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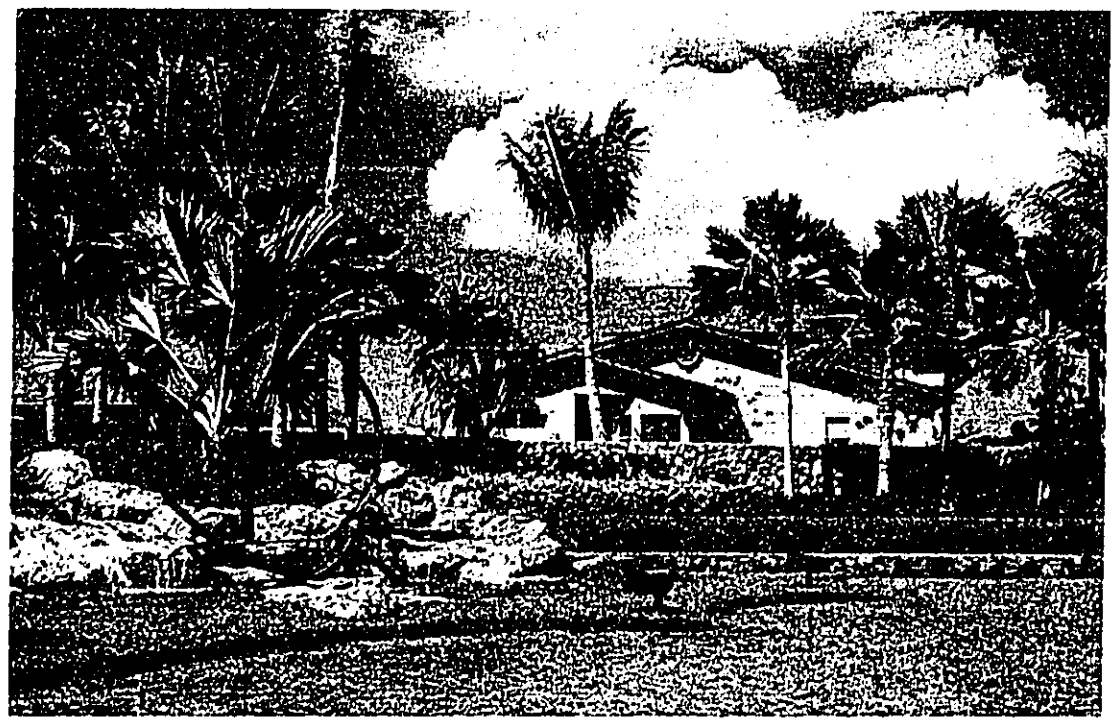
FINAL SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT



OCEAN POINTE™
MASTER PLAN (REVISED)

HASEKO

Final Supplemental Environmental Assessment

OCEAN POINTE
MASTER PLAN (REVISED)

HASEKO (EWA), INC.
820 Mililani Street, Suite 820
Honolulu, Hawaii 96813

™

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841 Bishop Street, Suite 400
Honolulu, Hawaii 96813

June 2001

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PREFACE

This Final Supplemental Environmental Assessment (EA) is prepared pursuant to Sections 5.4 and 5.4.1 of the Ewa Development Plan (Revised Ordinances of Honolulu Chapter 24-3) and in conformance with Chapter 343, Hawaii Revised Statutes and Title 11, Chapter 200, Hawaii Administrative Rules. Proposed is an applicant action by HASEKO (Ewa), Inc. ("HASEKO").

This document is prepared in support of an application for rezoning. An EA is required because the proposed rezoning encompasses more than 25 acres. The accepting agency is the City Department of Planning and Permitting ("DPP"). The Draft Supplemental Environmental Assessment was filed with DPP on March 28, 2001 and its notice of availability for public review was published in the Office of Environmental Quality Control's Environmental Notice on April 23, 2001.

HASEKO proposes a reconfiguration of its multi-use, master-planned Ocean Pointe project in Ewa ("Ocean Pointe" or the "Project"). An 1,100-acre project at the seaward edge of the east Ewa Plain, Ocean Pointe is a part of Oahu's secondary urban center. The focal point of the Project is a man-made, full-service marina with a maritime commercial complex including light industrial, commercial, and retail facilities as well as ancillary visitor accommodations. Also included within the Project will be a golf course, a 20-acre district park and 4,850 homes.

All the discretionary permits necessary for developing the Project have been obtained and development of its residential component commenced in late 1997. Zoning approvals were granted by the City in 1985 and 1993 to accommodate this master-planned Project. However, recent reconsideration of some infrastructure issues has led to the conclusion that the construction of the upper or east basin of the marina is environmentally unfavorable and that pursuing such course would not be productive. This determination and the need to convey regional storm waters towards the ocean, in turn, dictate a

reconfiguration of the Project. The Project's components remain essentially unaltered, although their locations and relative sizes are changed.

Ocean Pointe was formerly known as the Ewa Marina Community Development for which several environmental impact disclosure documents have been prepared, filed and accepted. All of these documents were prepared pursuant to Hawaii Revised Statutes Chapter 343, except one that was prepared by the US Army Corps of Engineers pursuant to the National Environmental Policy Act (NEPA):

1. The first environmental impact statement (EIS) encompassing the area that was known as Ewa Marina Phase I, including Increments 1 and 2, (see Figure 1) was accepted on February 20, 1981. This "programmatic" EIS was accepted subject to the requirement that more detailed supplements to the EIS be prepared for specific increments based on firmer and more detailed development concepts that would become available as the project progressed.
2. The Supplemental EIS for Phase I, Increment 1 was accepted on April 16, 1984.
3. The first Supplemental EIS for Phase I, Increment 2 was accepted by the City Department of Land Utilization (DLU) on April 16, 1986.
4. An EIS for Ewa Marina Phase II was accepted by DLU on May 14, 1991. (See Figure 1) This was not a supplemental EIS since it encompassed an area that was not previously included in the 1981 EIS (Phase II EIS).
5. In 1992, a second Supplemental EIS for Phase I, Increment 2 was prepared to address a reconfigured marina. This EIS was accepted on May 8, 1992 (1992 Supplemental EIS).
6. A Federal EIS for the 120-acre marina was prepared by the U.S. Army Corps of Engineers pursuant to NEPA in 1993. One of the alternatives considered in this Federal EIS was a

smaller marina in essentially the same configuration as is being proposed in this rezoning action.[1]

7. In conjunction with a shorefront common area facility for the project, an Environmental Assessment was prepared in April 1998. Pursuant thereto, DLU issued a finding of no significant impact and an EIS was not required.

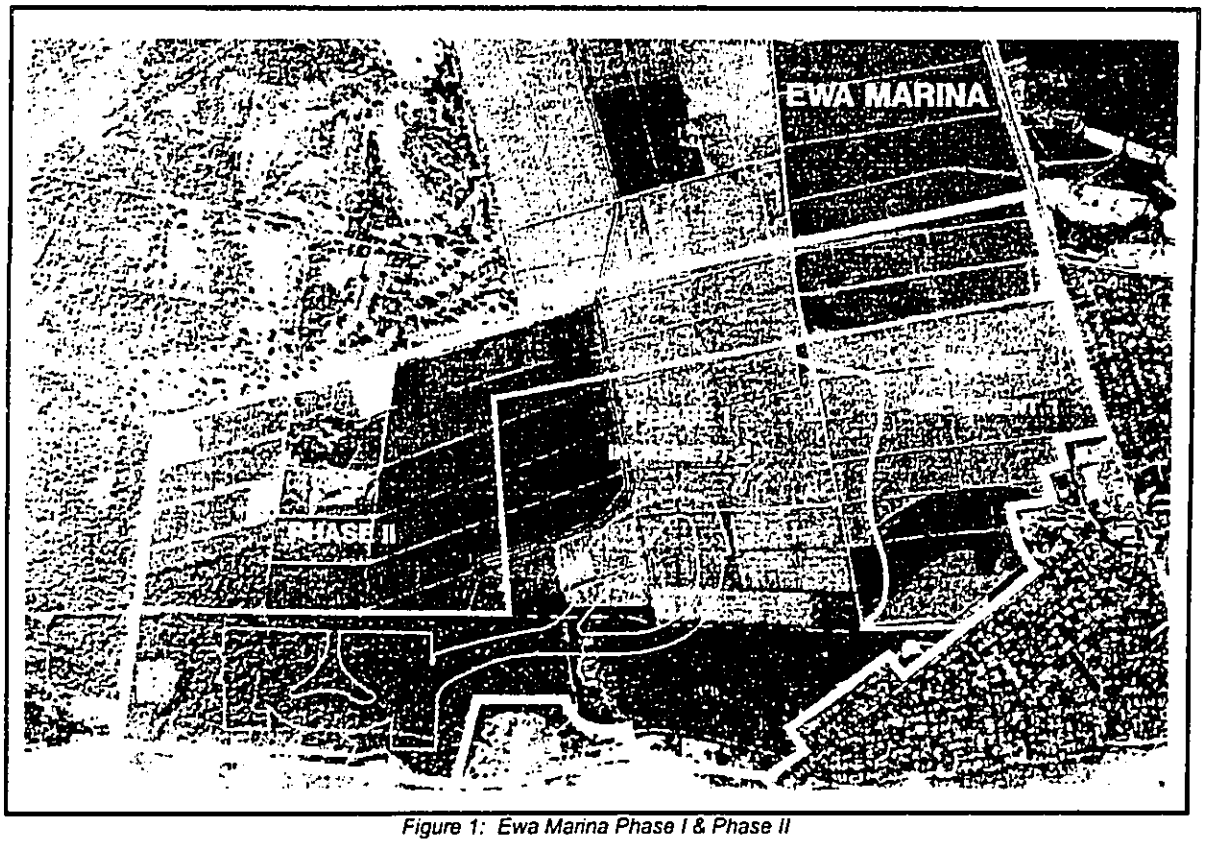

Figure 1: Ewa Marina Phase I & Phase II

The Phase II EIS, the 1992 Supplemental EIS and the Federal EIS, taken together, are comprehensive environmental disclosure documents that supported the Project's current land use approvals. Since the proposed action constitutes a reconfiguration of land uses that have already been approved, this EA serves as a supplement to these three environmental disclosure documents. Information is updated and, where appropriate, impacts are re-assessed for the proposed action. Subjects upon which there are no new or additional information

[1] The Federal EIS concluded that the environmental impacts associated with the smaller marina were not significantly different from the full scale marina. Thus, the Corps of Engineers approved the full scale

or upon which the proposed reconfiguration has no impact are not generally covered in this EA. The reader is directed to the Phase II EIS, the 1992 Supplemental EIS and the Federal EIS for a comprehensive discussion of the environment and the impacts of the Project on the environment.

marina, which, at the time, was HASEKO's preferred alternative.

SUMMARY

Applicant:	HASEKO (Ewa), Inc. 820 Mililani Street, Suite 820 Honolulu, Hawaii 96813 Contact: Paul Jordan Phone: (808) 536-3771 ext. 243
EA Preparer:	Oshima Chun Fong & Chung LLP 841 Bishop Street Suite 400 Honolulu, Hawaii 96813 Contact: Angela Fong Wayne E. Costa, Jr. Phone: (808) 528-4200
Accepting Agency:	Department of Planning and Permitting City and County of Honolulu 650 South King Street Honolulu, Hawaii 96813 Contact: Robert McGraw Phone: (808) 547-7276
Project Location:	Ewa, Oahu, Hawaii
Tax Map Key:	9-1-012 Parcels 2, 5, 8-17, 23, 39-40, 45-47 (por)
Area:	Approximately 450 acres
Recorded Fee Owner:	HASEKO (Ewa), Inc.
Existing Land Use:	Vacant
State Land Use Classification:	Urban
Development Plan Urban Land Use Map:	Ewa Development Plan
Development Plan Public Facilities Map:	Ewa Development Plan
Zoning:	P-2 Preservation, R-5 Residential, A-1 Low Density Apartment, A-2 Medium Density Apartment, B-2 Community Business District

Proposed Action:	Zoning changes to accommodate reduction in the size of proposed marina to address environmental and infrastructure issues; relocation and reconfiguration of golf course to accommodate alteration of regional drainage infrastructure; reconfiguration of residential and commercial areas due to master plan changes generated by reduced-scale marina and reconfigured golf course.
Impacts:	No significant impacts are anticipated beyond those anticipated for the current zoning and marina configuration as disclosed in previously accepted environmental disclosure documents.

I. DESCRIPTION OF AND NEED FOR PROPOSED ACTION

The proposed action is a reconfiguration of land uses that are already approved. The proposed changes are generated primarily as a result of reconsideration of infrastructure development and changes in surrounding land uses.

A. PROPOSED CHANGES

The most significant change being proposed to the Ocean Pointe master plan (sometimes referred to as the "Project") by this reconfiguration is the reduction in the size of the proposed marina from 120 acres to approximately 70 acres by elimination of the upper or east basin of the marina east of the Honouliuli sewer outfall.

The upper basin will become part of the golf course, which will be reconfigured from an east-west configuration to more of a north-south configuration. This new configuration will make the golf course a more effective part of the regional storm water drainage infrastructure. With the new configuration, the golf course will be reduced from 27 holes to 18 holes.

Reconfiguration of the golf course, in turn, generates changes in the configuration of the commercial and visitor accommodations areas adjacent to the marina. Additionally, due to the closure of Barbers Point Naval Air Station as a military installation, the northwest section of the Project site may be suitable for residential use. Although the areas designated for residential use are more dispersed throughout the Project site, the total number of housing units within the Project will be limited to the 4,850 housing units already approved.

One of the proposed changes is the addition of a community business area adjacent to the district park at the Project's northeast corner. It provides a location for a neighborhood business center that would primarily serve the adjacent residential areas in conformance with policies of the Ewa Development Plan. Compare Exhibit A (currently approved master plan) with Exhibit B (proposed master plan).

B. PROJECT DESCRIPTION

Ocean Pointe (which was formerly known as the Ewa Marina Community Development) is an 1,100-acre master-planned project located at Honouliuli in the Ewa District of Oahu. It lies along the shoreline between the Ewa Beach community and Kalaeloa (the former Naval Air Station Barbers Point), about 20 miles west of Honolulu (see Figure 2). The focal point of the project is a man-made, full-service marina with a maritime commercial complex including light industrial, commercial, and retail facilities as well as visitor accommodations. Also included within the Project will be a golf course, a 20-acre district park, and 4,850 homes.

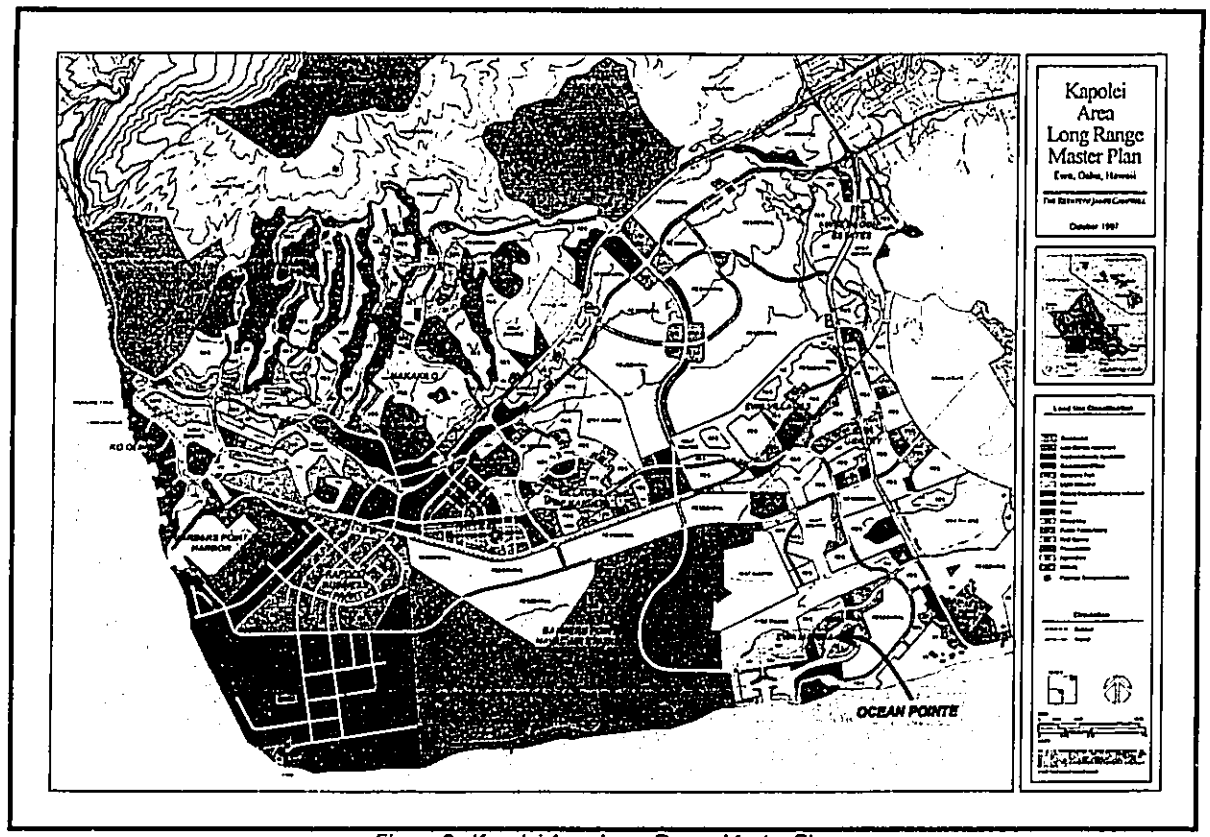

Figure 2: Kapolei Area Long Range Master Plan

Development of the Project requires land use approvals from Federal, State, and City agencies. All of the discretionary permits necessary for developing the Project under the current master plan have been obtained.

- A Department of the Army Corps of Engineers permit ("DA Permit"), PODCO 2117, was issued on

June 28, 1993 pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act.

- The 1,100-acre Project site was classified as Urban by the State Land Use Commission in three dockets: O74-23, A83-558, and A89-651.
- A water use permit for excavation of the marina into the caprock aquifer was issued by the State Commission on Water Resource Management in September 1998.
- On April 26, 2000, the State Board of Land and Natural Resources issued a Conservation District Use Permit ("CDUP") for construction of the marina entrance channel seaward of the shoreline.
- Zoning approvals for the current master plan configuration were granted by the City in 1985 (Ordinance 85-44) and 1993 (Ordinance 93-94).
- A Special Management Area Use Permit ("SMP") and Shoreline Setback Variance were granted by the City in 1993 (Resolution 93-286, CD1).
- In 1998, by way of Resolution 98-294, CD1, the City Council granted a Plan Review Use permit for the Ocean Pointe golf course.
- A decision to develop a shorefront community meeting facility, rather than residences, at the southeast corner of the Project triggered the need for a revised SMP and Site Plan Review approval, which were obtained in early 1999. (Resolution 98-272, CD1, adopted by the City Council on January 27, 1999, and Permit No. 98/SPR-7, issued by the Department of Planning and Permitting on February 11, 1999.)

C. NEED FOR PROPOSED ACTION

The concept of a man-made marina at this location was planned by the original landowners and ratified by the State and City governments long before HASEKO acquired the Project in 1988. It had long been planned that the marina would straddle the Honouliuli wastewater treatment plant sewer outfall line that runs north-to-south through the middle of the Project site (see Figure 3). As part of the original plans, the outfall would be lowered considerably where it intersected the marina to allow navigability of the upper basin of the marina. This would require the insertion of an inverted siphon into the existing outfall to lower that section of the outfall under the marina.

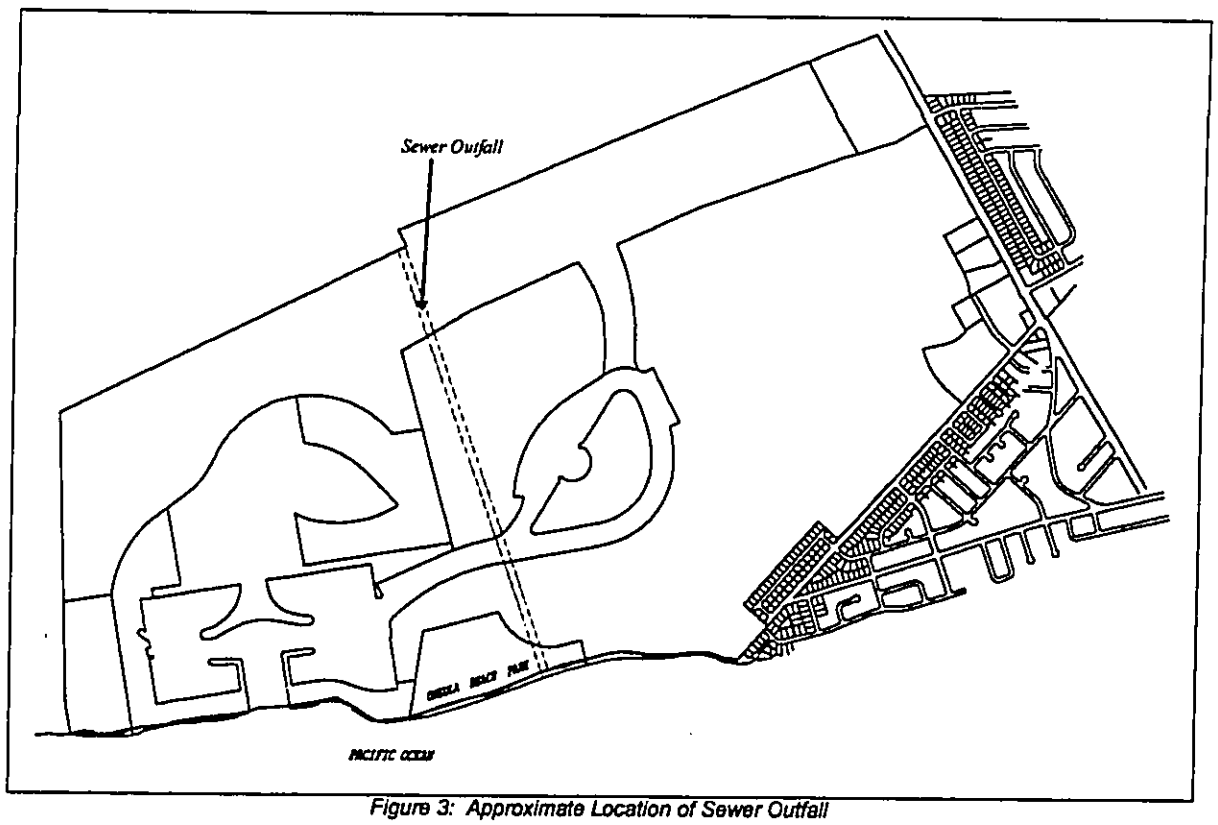

Figure 3: Approximate Location of Sewer Outfall

In 1980, the City Department of Public Works approved, in concept, plans for an inverted siphon in the sewer outfall to accommodate the construction of navigable waterways in the upper basin of the marina. This approval was likely based in part on the regulatory environment existing in the late 1970s and early 1980s.

By 1997, however, environmental awareness at all levels of government, including the City and the State, had progressed and the emphasis in the City's wastewater management program became focused on maintenance of wastewater collection and transmission facilities and the prevention of spills and other breakdowns of wastewater systems. As a result, the maintenance requirements associated with an inverted siphon became the subject of re-examination, and the City asked HASEKO to consider alternatives to siphoning the outfall. In response, The Limtiaco Consulting Group, Inc., in association with Berryman & Henigar, Inc., was retained to conduct engineering analyses at a conceptual level of alternatives to siphoning the outfall. One of the conclusions reached is that there is no feasible alternative to an inverted siphon to accommodate navigability over the outfall. The study also identified maintenance issues and a potential odor problem with facilities that would be associated with siphoning the outfall. Following a series of discussions with the City, HASEKO concluded that construction of a navigable upper basin east of the outfall is environmentally unfavorable and that it would not be productive to pursue that course.

Elimination of the marina's upper basin dictates changes to Ocean Pointe's regional drainage master plan. The drainage master plan that had been approved in 1997 assumed that drainage from properties within the Kaloi Gulch drainage basin mauka of Ocean Pointe would be directed into the upper basin of the marina before being released into the ocean. With the elimination of the upper basin, a revised drainage plan is necessary to divert storm waters directly into the marina's main basin.

Constraints to devising such a drainage plan were imposed by the current elevation of the sewer outfall and regional drainage infrastructure already in place and/or approved for properties mauka of Ocean Pointe. The revised drainage master plan for Ocean Pointe, which was approved by the Department of Planning and Permitting on February 22, 2001, does not require infrastructure alterations for any properties outside of Ocean Pointe. It does require, however, that the outfall be lowered (but not siphoned). Pursuant to the engineering

analyses conducted by The Limtiaco Consulting Group, Inc. in association with Berryman & Henigar, Inc., as documented in the Honouliuli Sewage Outfall Relocation Conceptual Engineering Feasibility Study (Final Report, May 2000), Haseko and the City conceptually agreed upon a method of lowering the outfall to accommodate regional drainage requirements.

The revised drainage master plan provides for the conveyance of storm waters through an 800-foot wide drainage channel, over the sewer outfall, and into the main basin of the marina. Since there can be no buildings constructed within the 800-foot drainage channel, economics dictate that it be incorporated into the golf course. Reduction in the size of the marina and the reconfiguration of the golf course triggered other changes in the configuration of the Project master plan. The proposed rezoning action is to accommodate these changes. While the Project will be reconfigured, the components will remain essentially unaltered.

II. PERMITS AND APPROVALS REQUIRED

Rezoning is required to accommodate the proposed reconfiguration. The zoning proposed under the reconfiguration is shown on the map attached as Exhibit C. Also, the following is a summary of the Project's current zoning versus the approximate zoning under the master plan reconfiguration.

ZONING CATEGORY	CURRENT MASTER PLAN	RECONFIGURED MASTER PLAN
R-5, Residential	364	423
A-1, Low Density Apt.	94	136
A-2, Medium Density Apt.	44	64
P-2, General Preservation	452	369
B-2, Community Business	80	7
BMX-3, Community Business Mixed Use	0	45
I-3, Waterfront Industrial	38	28
Resort	38	38
TOTALS	1,110	1,110

Because the reconfiguration does not change the components of the Project or the land uses, the other land use permits and approvals that have already been obtained (see Project Description, above) remain valid. However, minor modifications may be required for some of the permits and ratification of the reconfiguration will be sought from each of the agencies from which permits and approvals have been previously received.

III. OWNERSHIP AND AREA AFFECTED

HASEKO (Hawaii), Inc. acquired the 1,100-acre Project site in 1988 and transferred it to HASEKO (Ewa), Inc., a subsidiary, in 1992. Approximately 95 acres along Fort Weaver Road was transferred to another subsidiary, HASEKO Homes, Inc. in 1997 for the development of the Project's first residential phase. As of late March, 2001, over 400 single-family homes and townhomes have been conveyed in fee simple from HASEKO Homes to individual homeowners. The proposed zoning reconfiguration affects approximately 435 acres of the 1,100-acre site.

The areas affected by this proposed reconfiguration are within Tax Map Key (TMK) plats 9-1-012-2, 5, 8-17, 23, 39-40, 45-47 (por) (see Figure 4).

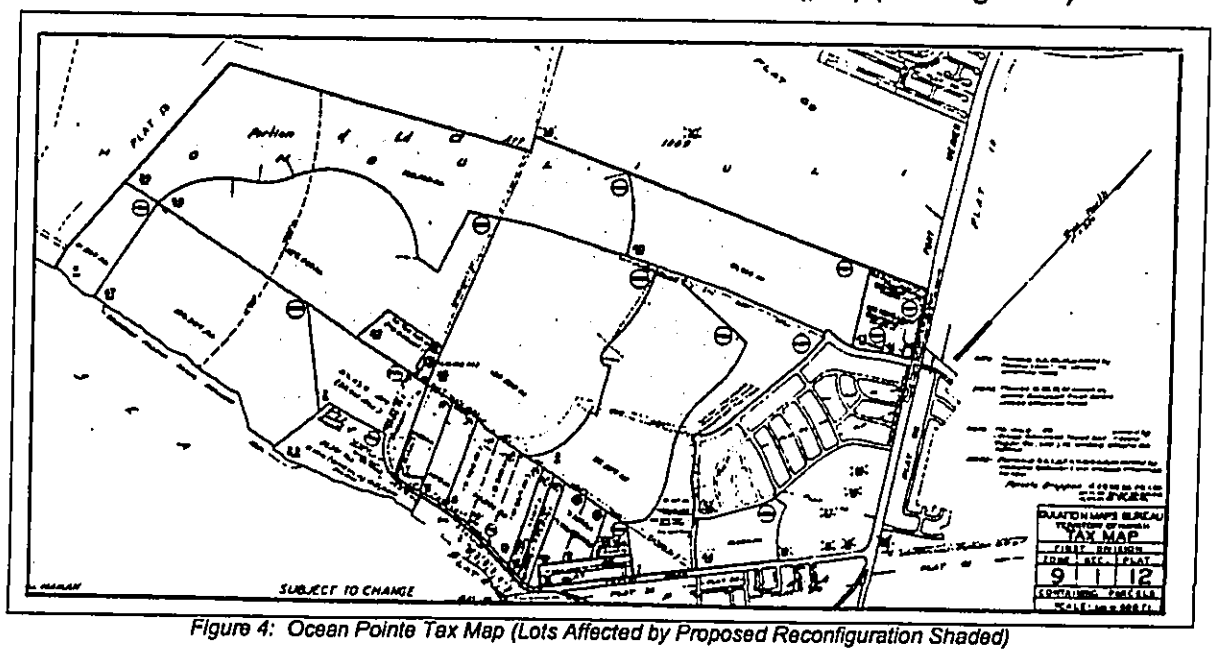

Figure 4: Ocean Pointe Tax Map (Lots Affected by Proposed Reconfiguration Shaded)

IV. CONSTRUCTION REQUIREMENTS

The reduction in the size of the marina means a reduction in the amount of fast land excavation. The 120-acre marina would have required excavation of approximately 5 million cubic yards of material. In contrast, the reduced-scale marina would entail approximately 2.6 million cubic yards of fast land excavation. The excavated material will be used to raise the average elevation of the land within the Project site to conform to flood hazard requirements and establish drainage patterns. Notwithstanding the significant decrease in excavated material, earthwork requirements can be balanced so as to not require off-site importation of fill material.

Grading of the landward areas, installation of infrastructure and utilities, and construction of structures will employ conventional land-based techniques.

V. DEVELOPMENT TIMETABLE

Construction on the residential component of the Project commenced in the fall of 1997. Sales began in June, 1998, and as of June, 2001, over 450 families reside in Ke 'Āina Kai, the first residential increment in Ocean Pointe.

Residential development is ongoing, and HASEKO anticipates developing an additional 300 to 400 housing units per year until the Project is fully built.

Dry material is being taken from the Kaloi drainage channel (which is proposed to be incorporated into the golf course) and from above the water table within the proposed marina footprint for use as fill for the residential development. The drainage channel and the marina will continue to be incrementally excavated in correlation with Project requirements for fill material and as necessary to accommodate regional and onsite drainage requirements.

The docks, piers, and other associated facilities will most likely be constructed after the marina is open to the ocean. Similarly, the maritime commercial complex surrounding the marina will be developed following construction of the marina.

It is anticipated that full build out of the master plan for Ocean Pointe will take another 15-20 years.

VI. DESCRIPTION OF EXISTING ENVIRONMENT, PROJECT IMPACTS, AND MITIGATION MEASURES

The three environmental impact statements that were prepared for the Project in 1991, 1992 and 1993 together provide a comprehensive description of the environment and the Project's impact. The Phase II EIS and the 1992 Supplemental EIS were prepared pursuant to HRS Chapter 343 by Tyrone T. Kusao, Inc. and Wilson Okamoto & Associates, respectively. The U.S. Army Corps of Engineers prepared a separate EIS in accordance with NEPA that was published in April 1993 (Federal EIS). Those environmental impact statements, taken together, supported the current land use approvals for the Project. Inasmuch as the proposed action constitutes a reconfiguration of land uses that have already been approved, this EA serves as a supplement to the Phase II EIS, the 1992 EIS and the Federal EIS. Information is updated and the impacts of the current master plan configuration, including the full 120-acre marina, are compared to the impacts of the proposed Project reconfiguration, including the reduced-scale marina. Subjects upon which there are no new or additional

information and upon which the proposed action has no different impact from the current master plan are not generally covered in this EA. The reader is directed to the Phase II EIS, 1992 EIS and the Federal EIS for a comprehensive discussion of the environment and the impacts of the Project on the environment.

A. PHYSICAL ENVIRONMENT

1. LANDWARD ENVIRONMENT

(a) Topography/Drainage

Ocean Pointe is located within the Ewa Coastal Plain, which is the largest coastal plain on Oahu. The Ewa plain is fairly flat and rises gently northward toward the Waianae Range. Ocean Pointe lies at the southern (seaward) edge of the Kaloi Gulch Drainage Basin, which incorporates approximately 7,000 acres beginning mauka of the H-1 Freeway.

Mauka of the H-1 Freeway the topography varies from semi-mountainous agricultural land to mountainous steep terrain. Currently, there are plans for the development of a new West Oahu campus for the University of Hawaii mauka of the H-1 Freeway.

The H-1 Freeway runs along the foothills on the north side of the plain at an elevation of approximately 200 feet above sea level where it crosses the Kaloi Gulch drainage basin. Between the freeway and the northern boundary of Ocean Pointe, the land drops rapidly first to Farrington Highway, then more gently through the future development of East Kapolei and through Ewa Villages. Around Renton Road, the natural grade of the land becomes even flatter, dropping to a grade of less than one-half percent.

The Ocean Pointe property is relatively flat with elevations ranging from 4 feet above mean sea level at the shoreline to 26 feet above mean sea level at the mauka boundary. The surface of the site is fairly uniform and slopes from the mauka boundary to the ocean at rates of 0.2% to 1.0%. Along the shoreline, a 3- to 5- foot high wave cut escarpment rises in elevation towards the west.

CORRECTION

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

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The H-1 Freeway runs along the foothills on the north side of the plain at an elevation of approximately 200 feet above sea level where it crosses the Kaloi Gulch drainage basin. Between the freeway and the northern boundary of Ocean Pointe, the land drops rapidly first to Farrington Highway, then more gently through the future development of East Kapolei and through Ewa Villages. Around Renton Road, the natural grade of the land becomes even flatter, dropping to a grade of less than one-half percent.

The Ocean Pointe property is relatively flat with elevations ranging from 4 feet above mean sea level at the shoreline to 26 feet above mean sea level at the mauka boundary. The surface of the site is fairly uniform and slopes from the mauka boundary to the ocean at rates of 0.2% to 1.0%. Along the shoreline, a 3- to 5- foot high wave cut escarpment rises in elevation towards the west.

Until relatively recently, the Kaloi Gulch drainage basin was comprised mostly of sugar cane fields that facilitated infiltration of surface water. The land has been straight plowed, contour plowed, leveled, filled and irrigated. Irrigation was aided by the construction of a ditch from the foothills towards the coastline. This ditch, now known as Kaloi Gulch, can carry about 500 cubic feet per second (cfs) of surface water flows.

When the region was predominantly in agriculture, surface flows were generally absorbed through infiltration and did not reach the sea. With progressing urbanization, the increase in the amount of hard surfaces and channelization result in significantly more storm water being carried downstream. When the region is fully built out, it is anticipated that approximately 12,000 cfs of storm water will be released into the ocean from the Kaloi Gulch drainage basin.

Currently, man-made and natural retention/detention features restrict flows from continuing downstream to Ocean Pointe. An old railroad bed south of Renton Road blocks Kaloi drainage basin flows and has contributed to flooding in Ewa Villages. To help alleviate potential flooding, recent improvements within the Ocean Pointe site were constructed to permit 2,500 cfs of flows from Ewa Villages to enter Ocean Pointe at the northern boundary with Ewa Makai-West.

When the marina is constructed, Ocean Pointe will be able to accept 10,700 cfs of Kaloi drainage basin flows from mauka properties. Additionally, the marina will accept existing flows from the Barbers Point Naval Air Station golf course and will serve as the final retention/detention basin for onsite storm water flows.

With the 120-acre marina, Kaloi Gulch storm flows were intended to enter the marina at the upper basin. With the elimination of the upper basin, a revised drainage plan is necessary to divert storm waters to the main basin. A revised drainage master plan for Ocean Pointe, which has been approved by the City Department of Planning and Permitting, provides for drainage flows to be diverted through the Project site, over the Honouliuli sewer

outfall, and into the main basin of the marina. The revised drainage plan also includes the lowering of the outfall line within the Ocean Pointe site, which is necessary to accommodate upstream drainage elevations that are currently in place and/or approved. No changes to the off-shore portion of the outfall line are contemplated.

Impact Comparison: Under either master plan, development of the Ocean Pointe project, including excavation of the marina, significantly alters the topography and drainage through the Project site. This alteration has long been planned as a necessary accommodation for the urbanization of the region. Both the marina and the golf course were described in the 1992 EIS and the Phase II EIS as being components of the regional drainage system.

The proposed reconfiguration of land uses is generated by, and in response to, changes in drainage patterns that, in turn, are the result of the decision to not siphon the Honouliuli sewer outfall. Utilization of the marina as the final retention/detention basin for regional drainage is not altered. However, a longer drainage path through the reconfigured golf course will provide more opportunities for silt to settle out in retention/detention basins within the golf course. Storm waters entering the marina, therefore, should be cleaner. Thus, the reconfiguration should have a positive environmental impact with respect to the quality of storm waters entering the marina.

(b) Hydrology

The Ewa plain was formed by a sequence of marine sedimentary deposits (wedges), referred to as caprock, overlying a sloping volcanic basement. The uppermost stratum of the caprock is a relatively "clean" fossil reef limestone, generally exposed at its makai end and covered by alluvium inland. The caprock is situated over the basalt drinking water aquifer and acts as a "cap", inhibiting flow from the basalt aquifer to the ocean. In the region of the proposed marina, there is essentially no hydrologic interaction between the basalt aquifer, which is about 1,100 feet below the surface, and the upper caprock aquifer, which, from the surface, is about 100 feet thick. This upper

stratum, referred to as the "caprock aquifer", contains brackish groundwater that is used for irrigation.

The caprock aquifer is an unconfined aquifer containing a brackish water lens overlying saltwater, except at the mauka portion of the plain where the brackish water lens extends down to the bottom of the aquifer. It is largely a man-made aquifer in that irrigation water return is a significant source of the aquifer's water. Other sources include rainfall and some leakage from the basalt aquifer near the mauka boundary of the caprock. Sugar cane irrigation was the most significant source of inflow. It was also the most significant withdrawal of caprock water.

The Ewa plain has been used for sugar cane cultivation since the 1880s. Originally, this was generally limited to the mauka portion of the plain and all irrigation water was supplied by basalt aquifer wells. Use of groundwater from the limestone aquifer for irrigation commenced in the 1930s, coincident with the expansion of the cultivated areas southward across the plain.

Since sugar cane cultivation on the Ewa plain ceased, the amount of recharge has significantly decreased, and, consequently, the amount that can be withdrawn from the caprock aquifer for irrigation purposes has decreased. While sugar cane was cultivated over the caprock, the sustainable yield was in excess of 20 mgd while furrow irrigation was practiced. Under the more efficient drip irrigation, the sustainable yield was reduced to about 12 mgd. At present, the sustainable yield is estimated to be about 5.7 mgd. Since Oahu Sugar stopped pumping to irrigate its fields in November 1994, pumpage has been reduced from in excess of 15 mgd to approximately 3.0 to 3.5 mgd in the Puuloa sector of the aquifer. Most of the current pumpage is for golf course irrigation; minor amounts are used for landscape irrigation in residential areas.

Caprock groundwater flow is generally north to south across the Ewa plain, with discharge to the ocean at the shore. At the eastern

boundary of the plain, the shoreline discharge is to the West Loch of Pearl Harbor.

In the vicinity of Ocean Pointe, groundwater elevations are reported at approximately 1 to 2 feet MSL (mean sea level). Near the northern boundary of the plain, groundwater levels are reported at elevations of approximately 2 feet. This indicates a very small gradient over most of the plain, with a relatively steep drop in head near the shore. The flat gradient across the plain is characteristic of carbonate aquifers with typically high hydraulic conductivities. The rapid decrease in piezometric head at the shoreline is characteristic of the conditions where a brackish water aquifer discharges to the sea.

The brackish water lens is typically about 80 feet thick over most of the Ewa plain. Near the shore, however, brackish water levels decrease relatively rapidly towards sea level, accompanied by a much more rapid increase in the elevation of the seawater-brackish water interface. As a result, the thickness of the brackish water lens is greatly reduced near the shore, creating a constriction of the flow. Groundwater velocities are increased due to this constriction, which causes a relatively steep hydraulic gradient near the shoreline and somewhat higher groundwater levels inland. Water levels measured in monitoring wells near the shore show evidence of greater resistance to flow there, compared with further inland. This phenomenon of greater resistance to flow, or reduced transmissivity, had been labeled (inappropriately) the "barrier effect".

The "barrier effect" is a hydrologic, and not a physical, barrier. The phenomenon will manifest itself wherever an intruding wedge of dense salt water constricts the depth of fresh or brackish groundwater and forces the brackish ground water vertically upward and over the salt water as the brackish water discharges into the ocean. Thus, when the shoreline is "cut away" for the marina, the "barrier effect" will re-establish itself at the new shoreline in a relatively short time and, therefore, restore the aquifer to approximately the same degree as before the marina is dredged.

Impact Comparison: Since publication of the 1992 EIS and the Federal EIS, the Commission on Water Resource Management (CWRM), through a contested case proceeding, analyzed what impact excavation of the marina would have on ground water resources. In that contested case proceeding, significant hydrological information was adduced, the highlights of which are provided above. The information allowed CWRM to conclude that although excavation of the marina will have an impact on the caprock aquifer, the marina is nonetheless a reasonable-beneficial use of this brackish ground water resource.

CWRM found that the construction of the marina will not change the total amount of ground water discharging into the ocean. In other words, the marina will not use water, so the consumptive use of water will be zero. However, the distribution of the discharge will be somewhat altered, with more water discharging into the marina first before entering the ocean.

CWRM's findings also indicated that the excavation for the marina will create a relocated shoreline that will have a local impact on groundwater levels. Computer simulations of the marina show that changes to the heads in the upper limestone aquifer decrease rapidly with distance from the marina. For the most part, measurable reductions in water levels are limited to the Ocean Pointe property. Outside of the Ocean Pointe property, computer simulations indicated that there may be a small measurable decline in head level at the Hawaii Prince golf course.

Reduction of the size of the marina reduces the amount of excavation into, and thereby, the impact on the caprock aquifer. With the elimination of the upper basin of the marina, which is the portion of the marina closest to the Hawaii Prince golf course, there is greater assurance that caprock water level reductions resulting from excavation of the marina would be limited to the boundaries of the Ocean Pointe property.

(c) Soils

Discovery of hazardous materials used in connection with sugar cane operations resulted in the listing of a large parcel of former Oahu

Sugar land as a Superfund site. Although a significant portion of the Ocean Pointe site had previously been cultivated in sugar cane, only a very small portion (4 acres) referred to as the "coral pit" was identified as part of the Superfund site. No contaminants have been discovered throughout the remainder of the Project site.

Soil sampling conducted in 1999 revealed that the coral pit site has petrochemicals, which are not deemed to be hazardous for CERCLA purposes. The areas of more serious concern within the Superfund site are a considerable distance away from the coral pit and not within Ocean Pointe. Based on these findings, the coral pit was partitioned from the rest of the Superfund site, and was issued a "no further action" decision under CERCLA by the State Department of Health ("DOH").

Although "cleared" under CERCLA, under State regulations the coral pit site was still deemed to be in need of remediation because the petrochemical residue in the June 1999 sampling were found to exceed State guidelines. However, after further investigations were conducted by HASEKO's consultant under the direction and guidance of DOH, DOH determined that no further action would be necessary and issued a letter on January 24, 2001, to that effect. See Exhibit D.

Impact Comparison: Under either master plan configuration, the coral pit will be incorporated into the golf course. Disturbance of the soils will be kept to a minimum. The coral pit will not be an area subject to heavy human traffic.

(d) Flora and Fauna

The 1992 EIS and the Federal EIS describe the anchialine pool and the coastal saltmarsh habitat dominated by the introduced succulent, pickleweed (*Batis Maritima*) that are located at the southwestern portion of the Project site.

Pursuant to agreement with the U.S. Fish and Wildlife Service and in compliance with a Department of the Army Corps of Engineers permit for the marina, 22 acres of this coastal saltmarsh habitat will remain

undisturbed to protect the endangered Hawaiian stilt that rest, forage and possibly nest in the wetland. A chain-link fence surrounds the 6.2-acre marsh to keep out mammals that prey on the stilt and to control human access so as to minimize disturbance to the endangered birds.

Since 1995, the presence and numbers of endangered birds in the wetland have been regularly monitored as required by the permit issued by the Department of the Army Corps of Engineers. A small number of the endangered Black-necked Stilt (*Himantopus mexicanus*) has been consistently encountered in the wetland. The stilt do not appear to be disturbed by nearby grading activities (in the marina footprint). See Exhibit E.

Because the anchialine pool will be destroyed in the construction of the marina, the Department of the Army Corps of Engineers has required that two replacement pools be constructed.

Impact Comparison: Since the wetland area will be preserved, the 1992 EIS and the Federal EIS reported that no significant adverse impacts to flora and fauna were anticipated. Replacement anchialine pools were deemed to provide sufficient mitigation for the loss of the anchialine pool at the shoreline. No significant impacts to flora and fauna were reported in the Phase II EIS.

The impacts on the wetland and the anchialine pool are no different under the currently approved land use plan and the proposed reconfiguration. As a condition to the DA Permit, the developer is required to maintain present hydrological conditions in the wetland. The anchialine pool will be destroyed under either land use configuration and, pursuant to the DA Permit will have to be replaced.

(e) Noise

A Final Environmental Impact Statement for the Disposal and Reuse of Naval Air Station Barbers Point, Hawaii dated February 1999 (the "Navy EIS"), was prepared by the Department of the Navy to evaluate the potential environmental impacts of the proposed disposal and subsequent reuse of Naval Air Station Barbers Point. The Navy EIS considered several

alternative uses, the most prominent being the reuse of Barbers Point as a State of Hawaii general aviation reliever airport (its current use) that would also accommodate the operations of the United States Coast Guard and Hawaii Army National Guard. The Navy EIS concluded that the closure and reuse of Naval Air Station Barbers Point under all reuse alternatives significantly reduces the number of overflights and noise from Barbers Point. Most of the Ocean Pointe site currently falls within the range of 60 Ldn and below, which is considered compatible with all land uses.

Impact Comparison: Only short-term, construction-related impacts are anticipated to be generated by the development of Ocean Pointe. Such noise impacts will not increase with the proposed reconfiguration, but may in fact decrease with less excavation into the hard limestone to create the marina.

With the reduction of noise levels due to the closure of the Barbers Point Naval Air Station, the northwestern section of the Project site may be suitable for residential development (see Section VI.A.4(a) below).

2. MARINE ENVIRONMENT

(a) Water Quality

Ocean waters immediately offshore of Ocean Pointe are designated Class A waters. The water quality standards for "wet" conditions apply since the shoreline discharge in this area exceeds 3 million gallons per day per mile.

In connection with, and as required by, the DA Permit, HASEKO has been sampling and monitoring ocean water quality offshore of the Project site for approximately ten years. The samples indicate the following (see Exhibit F, Water Chemistry Report, December 2000):

- A substantial number of water samples exceeded State DOH water quality standards for open coastal waters under

"wet" conditions for NO_3^- (nitrate + nitrite nitrogen) and turbidity.

- The lack of horizontal gradients of PO_4^{-3} (orthophosphate phosphorous), as well as uniformly low values in the limestone aquifer relative to the basalt aquifer indicates substantial adsorption prior to groundwater efflux at the shoreline. It is likely that phosphorous is the limiting nutrient in the nearshore area.
- Nearshore water quality is influenced by groundwater input, in which agricultural chemicals associated with sugar cane appears to remain, and by water flowing out of Pearl Harbor in a westerly direction along the coastline fronting the Project site.
- A lack of vertical stratification in the water column is likely the result of substantial mixing by wave action.

The Section 401 water quality certification issued by the State Department of Health calls for continued water chemistry sampling and monitoring through construction of the marina and for at least two years thereafter.

Impact Comparison: Water quality impacts of the Project, including the alternative reduced-scale marina, were extensively evaluated in the Federal EIS. Copies of the relevant pages of the Federal EIS are attached as Exhibit G. By letter dated January 15, 2001, Dr. Hans Krock of OCEES International, Inc. reconfirmed that the proposed smaller marina will likely have similar water quality conditions to that of the larger configuration. See Exhibit H.

Mitigation measures discussed in the Federal EIS have been incorporated as permit conditions to the DA Permit and the conservation district use permit.

(b) Marine Habitats

Coral coverage in the nearshore area fronting the Project is sparse. Physical conditions are relatively harsh compared to most Hawaiian marine environments with high wave action and sand scouring. The area ranks as one of the most barren, physically stressed, and biologically depauperate coastal areas in the whole state. Although there are fish, corals, lobsters, etc., their abundance is extremely limited by the severe physical conditions and by the lack of sheltering holes and ledges.

The 8-mile stretch of coastline between Pearl Harbor and Barbers Point has been known as a prime location for gathering limu. Much of that shoreline consists of sandy or rubble beaches that provide easy access to the nearshore reef platform where limu grows. The predominant areas where limu is gathered along the Ewa coast are 20 to 30 feet offshore in water depths of 2 to 3 feet. The only area along this coastline that does not consist of such coastal structure is the region from Oneula Beach Park to the eastern boundary of the Barbers Point Naval Air Station, i.e., the shoreline area fronting the proposed marina. This shoreline area consists of jagged limestone cliffs with no beaches. Incoming waves break on this seacliff making the nearshore reef platform extremely inaccessible and dangerous during most conditions, thus severely limiting the ability to safely enter the water to pick limu. Where the marina entrance channel will be located there are no beaches for limu to wash up on, and no easy or safe access to the ocean.

The Ewa coastline is open and influenced by both coastal current flow and adjacent deeper ocean circulation processes. A dominant feature of the offshore environment at Ewa is very high rates of mixing by waves and currents that make ocean access dangerous. Mixing is so complete that incoming ground water nutrients are consistently mixed to background oceanic levels within 15 feet of the rocky shoreline. Because the

reservoir of the background oceanic nutrients is infinitely large compared to the relatively small input from ground water, it is very likely that there will be no change whatsoever in the nutrient concentrations of the nearshore zone when ground water distribution is altered as a result of the excavation of the marina into the caprock aquifer. Consequently, nearshore and offshore marine life, including limu, will not be significantly affected by the excavation of the marina.

Impact Comparison: Evidence presented in the contested case proceedings for the conservation district use permit and the water use permit, and the findings made by the State Board of Land and Natural Resources and the Commission on Water Resource Management in these proceedings, largely confirm the information contained in the 1992 Supplemental EIS and the Federal EIS with respect to the marine habitats fronting the Ocean Pointe project and the assessment of the impact of the Project on these habitats.

While construction activities will temporarily displace some of the marine organisms, the populations will recover. Benthic organisms, over the long-term, will benefit from enhanced vertical relief and small ledges, holes, and undercuts made in the channel entrance walls that will provide a complex of habitat space for small fishes and other motile forms.

Although the size of the marina is proposed to be significantly reduced, the size and dimensions of the entrance channel will be unchanged. Thus, the impacts on marine habitats will be the same. Significantly less excavation into the caprock aquifer entails less alteration to ground water discharge into the ocean. Therefore, the conclusion is bolstered that marine life will not be significantly affected.

Additionally, the requirement that HASEKO construct an artificial reef as mitigation for disturbance of the marine habitat is not altered with the reduced-scale marina.

(c) Endangered and Threatened Species

Federal (DA Permit) and State (CDUP) authorizations, both of which impose numerous conditions, have already been issued for the proposed marina. The Incidental Take Statement of the National

Marine Fisheries Service ("NMFS"), that has been incorporated as a condition to the DA Permit, restricts blasting to the months of June through November inclusive to avoid impacts to humpback whales.

In compliance with conditions to the State Department of Health Section 401 Water Quality Certification and the Incidental Take Statement issued by NMFS, both of which have been incorporated as conditions to the DA Permit, HASEKO has conducted surveys of the threatened green sea turtle population in the vicinity of the Project. Over a nine-year monitoring period, the green sea turtle population in the area has remained relatively constant, with what appears to be some seasonal variation (lower summer population). The largest aggregations of green sea turtles have been in the region of extensive vertical relief, approximately one kilometer west of the proposed entrance channel. Very few turtles are sighted in the areas characterized by the kind of flat "hardpan" bottom characteristic of the proposed channel alignment. See Exhibit I, Sea Turtle Study, December 2000.

Impact Comparison: With adherence to conditions imposed by NMFS, the Project will not significantly adversely affect the endangered humpback whales and the threatened green sea turtles. Since the size and characteristics of the entrance channel seaward of the shoreline is the same under both the larger and smaller marina configuration, the impacts to threatened and endangered species will be no different than as previously assessed.

3. COMMUNITY RESOURCES

(a) Shoreline Access

Vehicular access to the shoreline is along an easement through Ocean Pointe extending from Papipi Road to Oneula Beach Park, a City beach park bordered on three sides by Ocean Pointe property.

The Ewa DP envisions linear shoreline access along the coast from Ko Olina to Ewa Beach. Within Ocean Pointe, this linear shoreline

access will include a pedestrian pathway around the marina to mitigate the break in the shoreline for the marina entrance channel.

Impact Comparison: Constructing the marina entrance channel will eliminate approximately 400 feet of shoreline. To mitigate for this loss of shoreline and to ensure continuous access along the shoreline, HASEKO is required to provide public access around the marina. Both pedestrian and vehicular access routes will enable the public to access both sides of the marina entrance channel. By eliminating the upper portion of the marina, the distance from one side of the marina entrance channel around the marina to the other side of the entrance channel will be shortened. No other alterations to shoreline and marina access, either vehicular or pedestrian, will result from the proposed reconfiguration.

(b) Beaches

Oneula Beach Park, owned by the City, is surrounded on three sides by the Ocean Pointe project. Currently a 28-acre park, it will be expanded when HASEKO dedicates approximately 9.4 acres of sandy beachfront property within Ocean Pointe to the City for beach park purposes. Oneula Beach Park is currently the subject of a master redevelopment plan being undertaken by the City.

Impact Comparison: The proposed reconfiguration does not affect the shorefront area of the Project or alter the terms upon which HASEKO will dedicate the land for expansion of Oneula Beach Park. The dedication, however, is contingent upon HASEKO's acquisition of grading permits for the Ocean Pointe golf course. Thus, the reconfiguration of the golf course impacts only the timing of the dedication of the beachfront property to the City.

(c) Historic and Cultural Resources

(1) Archaeological Resources

The DA Permit requires compliance with a Memorandum of Agreement ("MOA") that HASEKO entered into with the

National Advisory Council on Historic Preservation ("NACHP"), the State Historic Preservation Division of the Department of Land and Natural Resources ("SHPD"), and the Office of Hawaiian Affairs ("OHA"). The MOA provides for an archaeological mitigation plan, including preservation of six archaeological sites.

Currently, in addition to the archaeological monitoring of construction activities, the programs called for in the Archaeological Mitigation Plan are being carried out. The six sites slated for preservation are being stabilized. Interpretive signs will be located at each of the preservation sites when surrounding areas become accessible to the public.

(2) Traditional and Customary Native Hawaiian Practices

In contested case proceedings before the Board of Land and Natural Resources for a Conservation District Use Permit and before the Commission on Water Resource Management for a marina Water Use Permit, the impact of the Project on Native Hawaiian traditional and customary access and gathering rights was litigated. Copies of the relevant portions of the respective Findings of Fact, Conclusions of Law and Decision and Order issued by the Board of Land and Natural Resources and the Commission on Water Resource Management, which summarize the evidence establishing the extent of such practices at Ocean Pointe, the impact on those practices and the mitigation measures to protect those practices are attached as Exhibit J.

Through those proceedings it was established that Native Hawaiians, as well as others, utilize the shoreline and nearshore areas for gathering of marine resources, including limu, fish, lobster, and other shellfish. In both cases, the decision-makers determined that the Project will not have a significant adverse impact on these gathering practices. Scientific evidence elicited in both cases established that the environmental impacts of constructing and operating the marina would not result in a significant decline in marine resources. Additionally, the Board of Land and Natural Resources determined that the Project will increase opportunities for Native Hawaiians to access the shoreline and nearshore areas. Moreover, to ensure continued

access, the conservation district use permit, issued on April 26, 2000, mandates that access through the Project site be preserved for the purpose of enabling Native Hawaiians to get to the shoreline. (See discussion of shoreline access above.)

Impact Comparison: In 1992, an earlier configuration of the marina was altered to ensure the preservation of the six archaeological sites pursuant to the terms of the MOA. The current proposed reconfiguration of the Project master plan will have no effect on any of the six preservation sites, nor does it alter any of the terms of the MOA. Because the reconfiguration does not extend to any shoreline areas, the analysis of, and impact on, Native Hawaiian gathering rights are not altered. By eliminating the upper portion of the marina, the distance from one side of the marina entrance channel around the marina to the other side of the entrance channel will be shortened.

4. HAZARDS

(a) Restrictive Easement

Due to the proximity of Naval Air Station Barbers Point, the United States had obtained a restrictive easement in its favor over a portion of the northwesternmost edge of the Project site. By its own terms, the restrictive easement terminates "if NAS Barbers Point ceases to be used as a military air station." Thus, when NASBP closed on July 1, 1999, the restrictive easement was extinguished.

Impact Comparison: Under the current zoning configuration, the restrictive easement area is part of the Ocean Pointe golf course. Utilizing this area for the golf course was dictated, in part, by the terms of the restrictive easement, which prohibited residential and other uses, but specifically included golf course and clubhouse, marina, marina services, retail trade, and water recreation. Additionally, earlier drainage concepts envisioned drainage from mauka properties being diverted westward over the Ocean Pointe golf course then southward into the main basin of the marina.

With the termination of the restrictive easement and with current regional drainage plans, there may be more options available for utilization of this northwest corner. Thus, HASEKO proposes to reconfigure the golf course to more of a north-south configuration that conforms to the regional drainage path and to utilize the northwest section for residential and/or commercial purposes.

5. INFRASTRUCTURE

(a) Traffic/Roadways

The State Department of Transportation has led the effort in developing the Ewa Region Highway Transportation Master Plan to accommodate the growth of the secondary urban center. A task force of State and City agencies, and developers and landowners in the region, is working to identify roadway system improvements necessary to accommodate forecasted future traffic.

Access to and from the Project site is through Fort Weaver Road, which has been widened to a four-lane divided arterial with turn lanes at intersections. Ke`oneula Boulevard is the main access road into the project from Fort Weaver Road. The intersection is signalized and is located directly across from Hanakahi Street.

Kapolei Parkway will be one of the major roadways in the Ewa region. It will extend north from Ocean Pointe through the Ewa by Gentry development and connect to Farrington Highway and eventually take traffic to Kapolei Town Center. North of the Gentry development, the Kapolei Parkway will connect to the proposed North-South Road, which will take traffic to a new interchange on the H-1 Freeway.

Other improvements identified in the Ewa Region Highway Transportation Master Plan include Kunia Interchange improvements, Makakilo improvements, bridges, intersections and other minor roadways. Additional or alternative roadways may be needed to accommodate new public uses in Kalaeloa.

The City provides both express and standard bus service to the area along Fort Weaver Road.

Roadway improvements for a secondary roadway system within the Ocean Pointe have been described in the roadway master plan that was approved by the City Department of Transportation Services ("DTS") on July 14, 1997. Traffic impacts associated with the proposed revisions to the master plan are analyzed in the *Traffic Master Plan Update for Ocean Pointe* prepared by Pacific Planning & Engineering, Inc. (February 9, 2001). Revisions to the internal roadway network to accommodate the master plan changes are also included in this update. See Exhibit K.

Impact Comparison: Additional traffic generated by the development of the Ocean Pointe project have been evaluated and accommodated in regional traffic master plans. Mitigation measures have been incorporated into traffic master plans that have been approved by City and State transportation agencies. The proposed reconfiguration of the Project master plan does not significantly alter the anticipated populations of residents, overnight visitors, or users of the various amenities within the Project.

Only the internal roadway network within Ocean Pointe is affected by the proposed revisions to the master plan. The major revision to the internal roadway network is the elimination of two collector streets from the east-west roadway, resulting in increased traffic along the Kapolei Parkway in the north and southbound directions. Additionally, intersection changes are proposed for access to the elementary school and the district park at the northeast section of the Project site.

Approval of the proposed reconfiguration would necessitate an amended secondary roadway master plan which would have to be submitted to DTS for approval.

(b) Water

(1) Potable Water

HASEKO is a member of the Ewa Plain Water Development Corporation ("EPWDC"), which is developing new water sources, storage facilities and transmission lines to provide sufficient water for certain projects on the Ewa plain, including Ocean Pointe. The regional water system is being developed in accordance with the Ewa Water Master Plan of August 1987, which was approved by the Board of Water Supply ("BWS"). Pursuant to the master plan, the first phase of the regional water system has been completed, including a 36-inch main under Fort Weaver Road, reservoirs, wells, and pumping stations, and dedicated to the BWS in the summer of 1991.

The system that was dedicated to the BWS in 1991 includes six wells located in Honouliuli. These wells are permitted to withdraw approximately 6.6 million gallons of water per day (mgd). Pursuant to agreement amongst the members of EPWDC, which agreement is part of the dedication agreement with BWS, Ocean Pointe is allotted more than 2 mgd of the 6.6 mgd. That amount is sufficient to satisfy the potable water needs for approximately two-thirds of the entire Ocean Pointe project. With the development of the next phase of the regional water system, most, if not all, of Ocean Pointe's potable water needs will be provided for. EPWDC will either develop this next phase or its members will be able to apply directly to BWS to meet their water needs.

Impact Comparison: As part of the secondary urban center and one of the projects identified in the Ewa DP, Ocean Pointe's potable water needs have, in general, been accounted for. As actual development proceeds, Ocean Pointe will have to apply to BWS for hook up to meet actual water needs or develop water sources through EPWDC. The proposed reconfiguration will have no impact on the amount of potable water needed for the project nor sources and means of obtaining water.

(2) Nonpotable Water

The Ocean Pointe project is required to have a dual water system, using nonpotable water for irrigation and other appropriate uses.

Currently, the caprock aquifer is the primary source of nonpotable water in the east Ewa plain. In the near future, reclaimed water from the Honouliuli Wastewater Treatment Plant should be available for nonpotable uses.

HASEKO currently holds two water use permits for withdrawal of water from the Ewa caprock aquifer. As a condition to the water use permit for excavation of the marina, however, HASEKO will be required to relinquish both caprock water permits and utilize reclaimed water for the Project's nonpotable water needs.

Impact Comparison: Under either master plan configuration, HASEKO is committed to the use of nonpotable water for irrigation of the golf course and other appropriate uses. The reconfiguration proposes a smaller golf course which should result in a slight decrease in the amount of nonpotable water needed for irrigation. The sources of nonpotable water will not change.

(c) Wastewater

A sewer master plan for the first phase of residential development for Ocean Pointe was approved by the City Department of Wastewater Management (now known as the Department of Environmental Services) on May 22, 1997. Sewer services for the first phase of development is provided by the Ewa Beach Sewer System which runs along Papipi Road and Fort Weaver Road to the Honouliuli Wastewater Treatment Plant via the Ewa Pump Station.

A sewer master plan for the remainder of the Project is the subject of current discussion between HASEKO and the City Department of Environmental Services.

Impact Comparison: The reconfiguration of the Project master plan does not alter the wastewater needs for the Ocean Pointe project.

6. SURROUNDING LAND USES

Subsequent to the publication of the Phase II EIS, 1992 Supplemental EIS and the Federal EIS, there have been significant, but not unanticipated, changes in the land uses surrounding Ocean Pointe.

Sugar cane cultivation on the Ewa plain has been completely terminated. Some agricultural operations are still in existence pending construction of planned urban developments. However, all of the lands immediately surrounding Ocean Pointe have been classified as Urban and are within the Urban Growth Boundaries established by the Ewa DP.

Urban development within the Kaloi Gulch drainage basin generates the need for significant regional drainage improvements to handle increases in storm water flow resulting from increases in hard surfaces and channelization of flows. While each development project within the Kaloi Gulch drainage basin is expected to have sufficient retention and detention infrastructure to meet Federal, State, and City drainage requirements, Ocean Pointe is expected to accept approximately 10,700 cfs of flows from mauka properties within the Kaloi Gulch drainage basin. The marina is to serve as the final retention/detention basin for over 12,000 cfs of storm water flows before they enter the ocean.

Naval Air Station Barbers Point was officially closed on July 1, 1999. While the Navy retains some land there, it is no longer used as a military air station. As a result, the number of overflights and level of aircraft noise over the Project site has decreased. A mix of recreational, general aviation, residential and commercial uses are planned for the former site of the naval air station. These new uses were contemplated in the Ewa DP, and they are compatible with the Ocean Pointe development.

Impact Comparison: Decades ago, a marina was planned for this location to accommodate the increase in regional storm water flows that would result from urbanization of the region. Regional drainage improvements that are already in place and/or approved for developments within the Kaloi Gulch drainage basin that are mauka of Ocean Pointe place infrastructure and development constraints on Ocean Pointe which have resulted in the need for the proposed master plan reconfiguration. In order to direct 10,700 cfs of flows into the reduced-scale marina, an 800-foot wide drainage channel is planned over an area that contemplates marina and residential development in the currently approved Project master plan. The width of the drainage channel lends itself to incorporation into, and reconfiguration of, the golf course, which, in turn suggests reconfiguration of other components within the Project.

With the termination of a restrictive easement due to the closure of Barbers Point as a naval air station (see section VI.A.4(a) above) and the reconfiguration of the golf course, the northwest section of the Project site may now be suitable for residential and/or commercial purposes.

B. SOCIO-ECONOMIC ENVIRONMENT

1. PUBLIC SERVICES

(a) Police Protection

Ocean Pointe is located within the Honolulu Police Department's Leeward Oahu District 8 headquartered in Kapolei.

As part of the City and County of Honolulu's master plan prepared in 1995 for the Ewa Plains Regional Police Station, Ocean Pointe may be serviced by the Kapolei Police Station at some future date.

Impact Comparison: The development of Ocean Pointe has been accommodated in the plans for police protection for the region. Reconfiguration of the Ocean Pointe's project master plan does not alter the Project's need for police protection.

(b) Fire Protection

Fire protection for the Ocean Pointe project is provided by the Ewa Beach Station #24 located approximately one mile east of Ocean Pointe at 91-832 Pohakupuna Road. Ewa Beach Station #24 will be relocated to a site within Ocean Pointe (See Exhibit L) at some future date. HASEKO is dedicating approximately one acre to the City for this new fire station.

Impact Comparison: The reconfiguration of the Project master plan does not affect the location of the new fire station. The need for fire protection services is not affected by the reconfiguration.

(c) Public Education

Pursuant to Ordinance No. 93-94, HASEKO is obligated to dedicate to the State a 6-acre site for public school facilities. HASEKO has reached agreement with the Department of Education as to the location of the school site.

Impact Comparison: The proposed reconfiguration changes neither the location of nor HASEKO's obligation with respect to public school facilities. Internal roadway changes are being proposed for better vehicular access to the public school site. See Exhibit K, Traffic Master Plan Update.

(d) Child Care

Child care facilities within the 20-acre district park at the northeast corner of the Project site are planned. Pursuant to Ordinance No. 93-94, HASEKO is obligated to contribute $200,000 towards the construction of such facilities.

Impact Comparison: The proposed reconfiguration changes neither the location of nor HASEKO's obligation with respect to the child care facilities.

2. RECREATIONAL ACTIVITIES AND FACILITIES

(a) Parks

Pursuant to Ordinance No. 93-94, HASEKO is obligated to dedicate to the City a 20-acre district park at the northwest entrance to the Project site, and to contribute towards the development of park facilities.

Impact Comparison: The proposed reconfiguration changes neither the location of nor HASEKO's obligation with respect to this district park.

(b) Beaches

Oneula Beach Park, owned by the City, is surrounded on three sides by the Ocean Pointe project. Currently an approximately 28-acre park, it will be expanded when HASEKO dedicates approximately 9.4 acres of sandy beachfront property within Ocean Pointe to the City for beach park purposes. Oneula Beach Park is currently the subject of a master redevelopment plan being undertaken by the City.

Impact Comparison: The proposed reconfiguration does not affect the shorefront area of the Project or alter the terms upon which HASEKO will dedicate the land for expansion of Oneula Beach Park. The dedication, however, is contingent upon HASEKO's acquisition of grading permits for the Ocean Pointe golf course. Thus, the reconfiguration of the golf course impacts only the timing of the dedication of the beachfront property to the City.

(c) Boating

As a condition to the CDUP, HASEKO is obligated to dedicate to the State a boat launching ramp complex that shall include seven launching ramps, about 150 associated trailer parking, public parking, boat wash down areas, restrooms, and outside showers. The launching ramp complex shall be open and available 24 hours a day.

Additionally, the CDUP requires that at least fifty percent of the boat slips in the marina be made available to the general public at reasonable market rates.

Impact Comparison: Development of a marina at this site will significantly increase boating opportunities, both for those who want to berth their boats in the marina, and for those who would instead trailer their boats from elsewhere for launching from Ocean Pointe's marina. The reduced-scale marina does not alter this.

Although the upper basin of the marina will be eliminated with the proposed reconfiguration, Ocean Pointe will still be one of the largest marinas in the State. The upper basin was intended to primarily accommodate "private" boat slips that were connected to adjoining residential developments. The main basin, which, in the proposed reconfiguration constitutes the entire reduced-scale marina, was intended to accommodate most of the slips available to the general public. Thus, the reconfiguration should not have a significant impact on the availability of "public" boat slips. Moreover, it is possible for the reduced-scale marina to accommodate the 1,400 boat slips that were planned for the larger marina. There will be no reduction in the boat launching ramp complex that will be dedicated to the State.

(d) Canoe Paddling and Kayaking

Some members of the Ewa Beach and ocean recreation communities had expressed interest in utilizing the calm marina waterways for canoe paddling and kayaking, both for practicing and for launching into the open ocean.

Impact Comparison: It was anticipated that the upper basin of the marina would have significantly less boat traffic, and, therefore, be ideal for canoe paddling and kayaking practice. The amount of boating traffic anticipated within the reduced-scale marina would probably not be as conducive to canoe paddling and kayaking within the marina. However, canoes and kayaks would still be able to be launched safely into the calm waters of the marina basin and then head into the open ocean.

VII. RELATIONSHIP TO PLANS, POLICIES AND CONTROLS

Ewa Marina, now known as Ocean Pointe, is recognized in the Ewa Development Plan as a planned residential development.[2] Section 3.6.2.1 of the Ewa Development Plan sets forth the General Policies for the Ocean Pointe project as follows:

> Ewa Marina, when developed, should be the region's principal recreational marina destination for local residents and visitors. Developed on over 1,100 acres located between Ewa Beach and Kalaeloa (Barbers Point Naval Air Station), the community should be centered around a 120-acre marina which should serve as a major recreational resource and visual amenity for the community.
>
> The marina should provide recreational boating opportunities, supported by 1,400 boat slips, marine haul-out and other repair facilities, and a public boat ramp.
>
> The City supports timely development of the Ewa Marina as a key element needed to mitigate drainage impacts in the Kaloi Gulch watershed during major storms. The marina's role as a storm water storage and detention basin has been acknowledged and included in previously approved environmental impact statements and land use approvals for projects in the Kaloi Gulch watershed.
>
> Ewa Marina should provide substantial public areas through shoreline and waterfront access, expansion of One`ula Beach Park, and creation of a District Park on Fort Weaver Road. The public waterfront promenade at Ewa Marina should have a hard edge and should focus on boating activity. Shoreline parks linked by pedestrian ways should be provided for public use along the entire waterway. A golf course should provide a major open space and visual amenity while also providing detention basins to receive run-off from light storms.
>
> On the eastern end, the Ewa Marina community should consist of Low and Medium Density Residential neighborhoods extending from Ft. Weaver Road, encompassing the eastern "loop" of the marina and an island within the marina.

[2] Zoning approvals for the currently approved master plan had already been granted by the City in 1993 and HASEKO's Urban Development Plan (UDP) had been approved in 1994, prior to adoption of the Ewa Development Plan in 1997. In setting forth the policies for development of Ocean Pointe, the Ewa DP essentially reiterated the 1993 zoning and 1994 UDP approvals.

> The existing community commercial center at Ewa Beach should be enlarged by development on land along Ft. Weaver Road at the eastern corner of the Ewa Marina community.
>
> On the west, a mix of activities should be sited around the marina basin, including a Marina Mixed Use area with resort and commercial development, a High Density Residential area, and a Marine Industrial area. Ewa Marina is planned to have about 950 visitor units to support its marina-oriented activities.

With the exception of two minor details, the proposed rezoning is fully consistent with the policies set forth in the Ewa Development Plan. The exceptions are: 1) the 120-acre marina is reduced in size to 70 acres; and 2) the marina "loop" and the island are eliminated.

Notwithstanding its reduced size, the marina will still serve as "the region's principal recreational marina destination for local residents and visitors." It will still be a full-service marina with surrounding resort, commercial, and industrial activities.

The golf course changes in configuration but still provides a "major open space and visual amenity." Both the golf course and the marina are components of the regional drainage system as indicated in the Ewa Development Plan.

The rezoning application does not propose to change the number of residential units (4,850) nor the number of visitor units (950) already approved for the Project.

VIII. COMMENTS ON THE DRAFT SUPPLEMENTAL EA

The notice of the availability for public comment of the Draft Supplemental Environmental Assessment was published in the April 23, 2001 issue of the Office of Environmental Quality Control's Environmental Notice. The agencies and parties listed below provided written comments during the draft EA review period. All written comments and responses are reproduced in Appendix A.

Federal

Department of the Army, U.S. Army Engineer District Honolulu,

Civil Works Technical Branch

Department of the Navy, Commander, Patrol and Reconnaissance Force,
U.S. Pacific Fleet

United States Department of Transportation, U.S. Coast Guard,
Fourteenth Coast Guard District

State of Hawaii

Department of Business, Economic Development & Tourism

Land Use Commission

Department of Education

Department of Health

Disability and Communication Access Board
Environmental Health Administration

Department of Land and Natural Resources

Historic Preservation Division
Land Division

Office of Environmental Quality Control

Office of Hawaiian Affairs

City and County of Honolulu

Board of Water Supply

Department of Design and Construction

Department of Environmental Services

Department of Planning and Permitting'

Honolulu Fire Department

Honolulu Police Department

Other

Cates International, Inc.

Gentry Homes, Ltd.

Ko Olina Community Association

Life of the Land

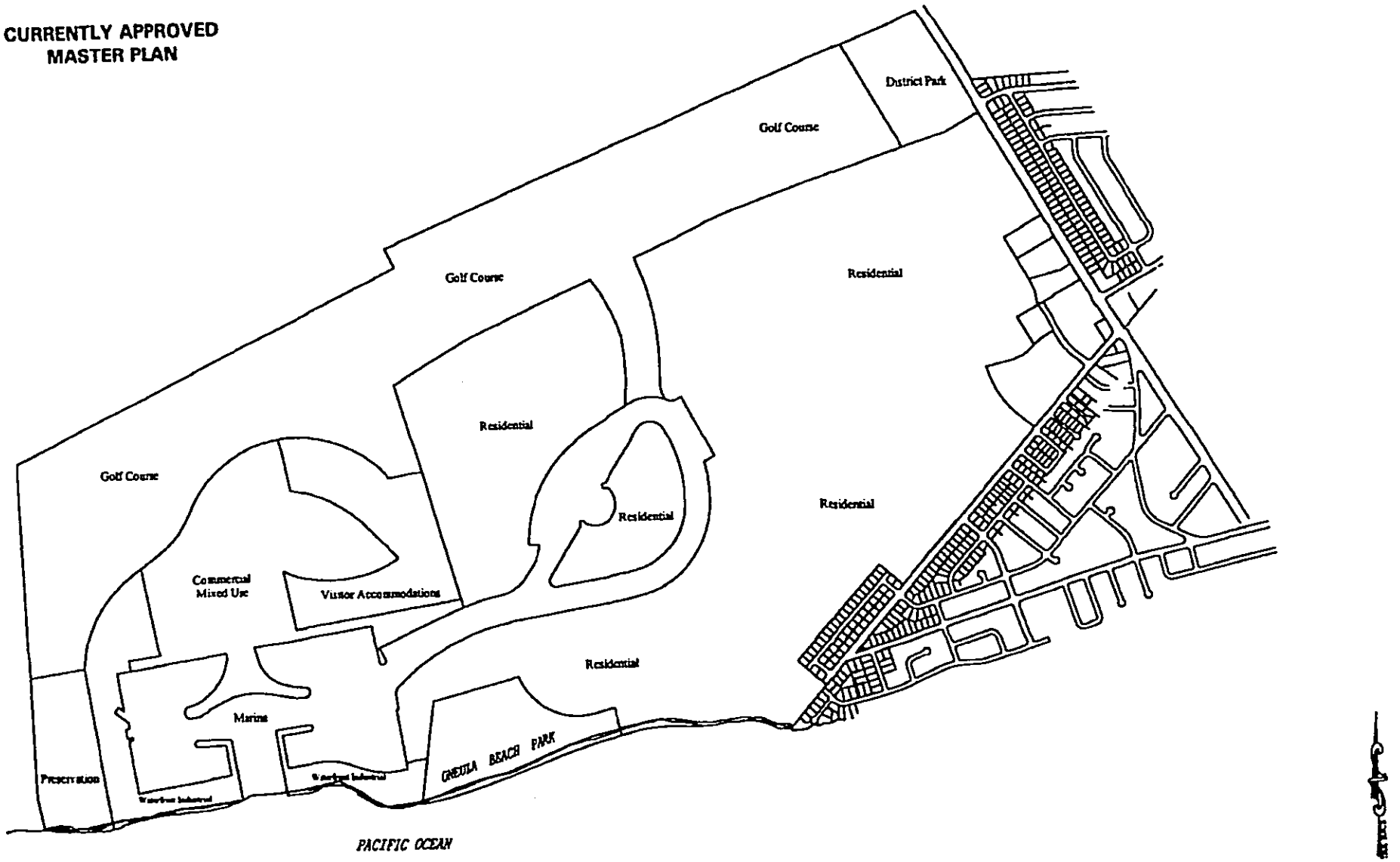
Nick Rodrigues

EXHIBIT A

Currently Approved Master Plan

OCEAN POINTE

CURRENTLY APPROVED MASTER PLAN



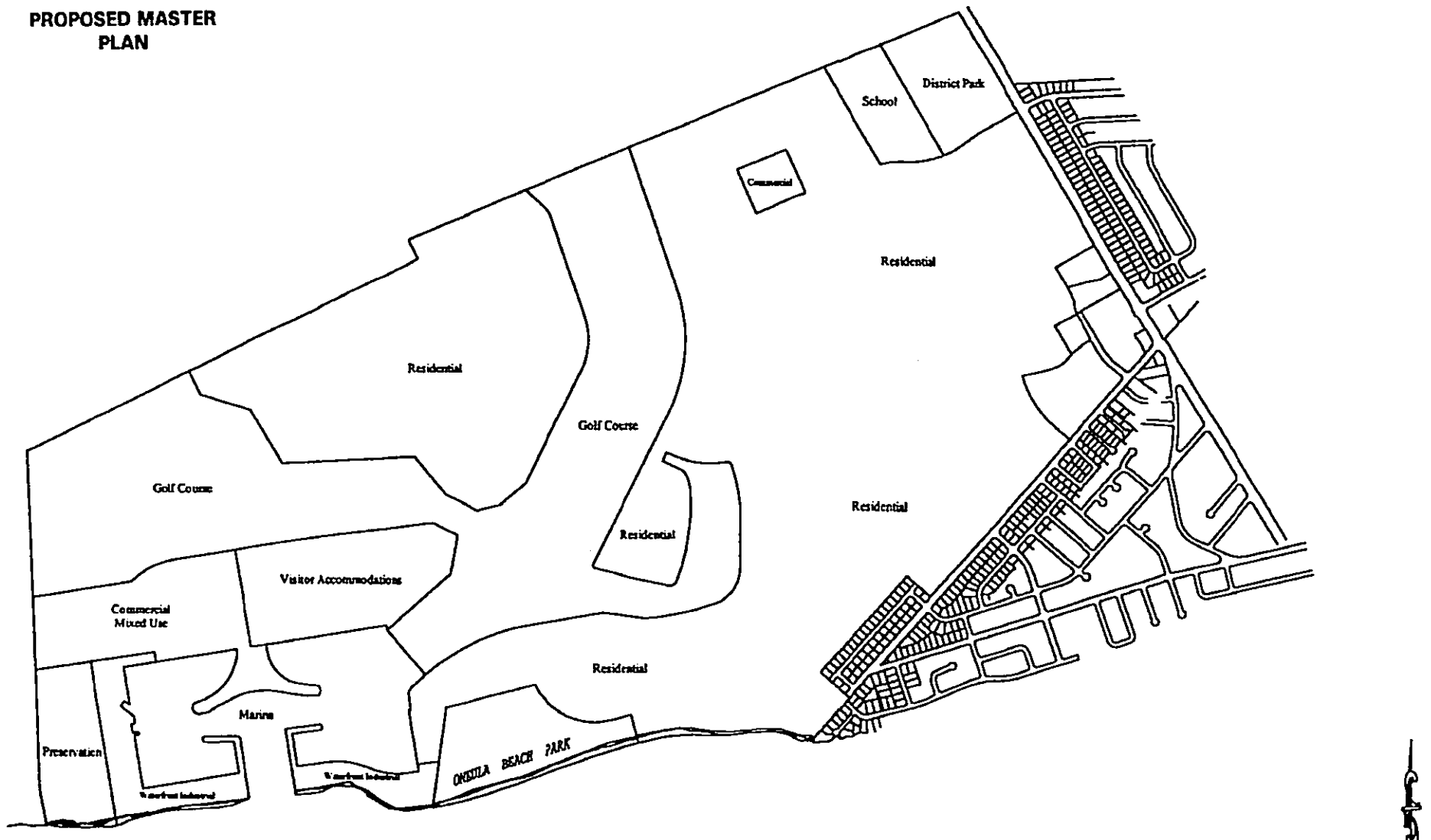
These materials are based on the current development plans for Ocean Pointe. They are conceptual in nature and there are no guarantees that all or any of the components will be developed or that the components will be developed as depicted here.

EXHIBIT B

Proposed Master Plan

OCEAN POINTE

PROPOSED MASTER PLAN



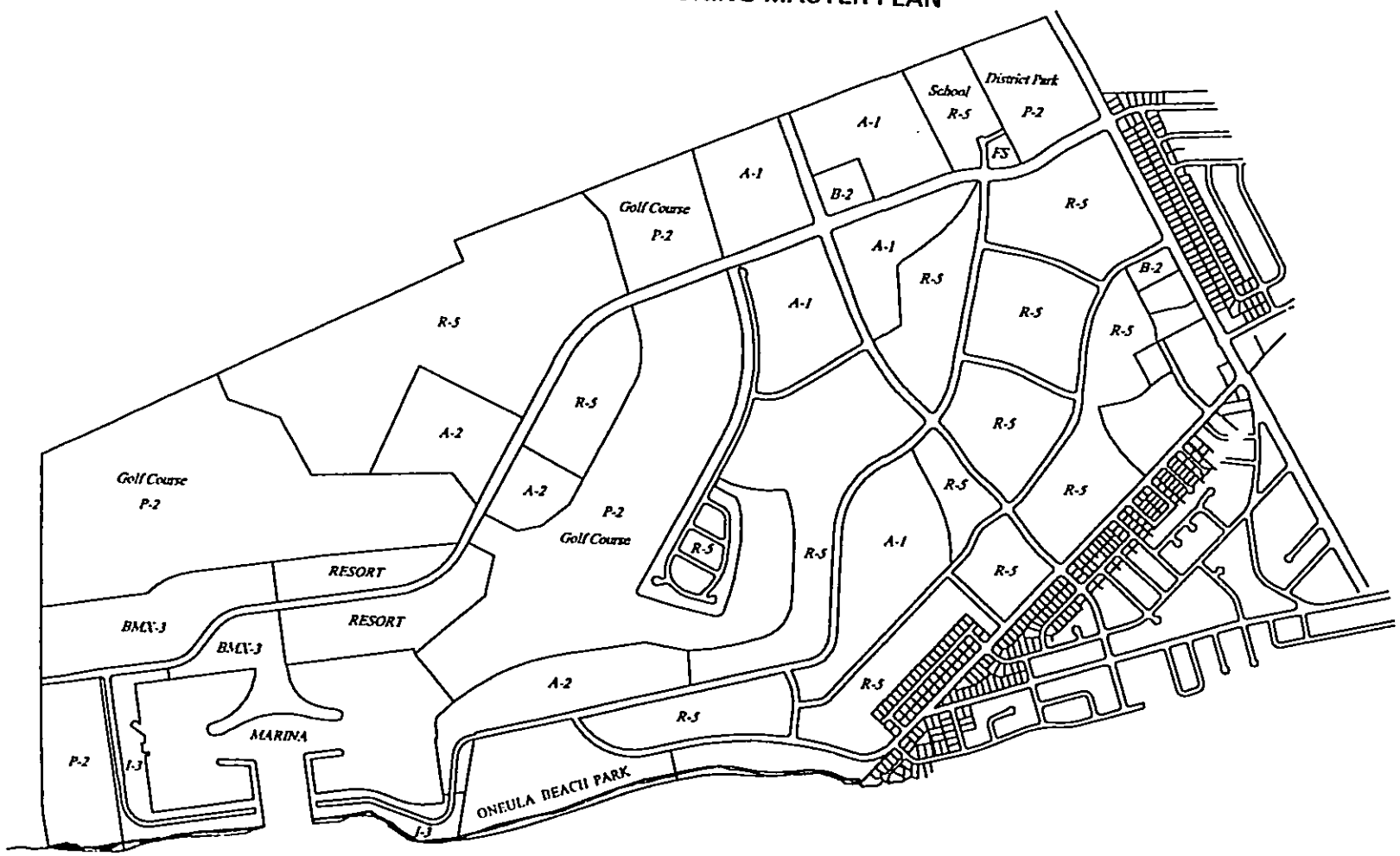
These materials are based on the current development plans for Ocean Pointe. They are conceptual in nature and there are no guarantees that all or any of the components will be developed or that the components will be developed as depicted here.

EXHIBIT C

Proposed Zoning Master Plan

OCEAN POINTE

PROPOSED ZONING MASTER PLAN



These materials are based on the current development plans for Ocean Pointe. They are conceptual in nature and there are no guarantees that all or any of the components will be developed or that the components will be developed as depicted here.

DMB ASSOCIATES, INC.
06/18/01

EXHIBIT D

Letter From DOH Dated January 24, 2001
Regarding No Further Action At Coral
Waste Pit Site

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

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

BRUCE S. ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH

In reply, please refer to:
HEER OFFICE
01-030-AP

January 24, 2001

Mr. Ray Kanna
Haseko (Hawaii) Inc.
820 Mililani, Suite 820
Honolulu, Hawaii 96813

SUBJECT: Ewa Sugar Mill/Oahu Sugar Co. – Coral Wastepit Site, Ewa, Hawaii

Dear Mr. Kanna:

The Hawaii State Department of Health (DOH) Hazard Evaluation and Emergency Response (HEER) Office has re-evaluated the Coral Wastepit Site (originally ranked a low priority in October 1999) based on the additional information provided in the J.R. Herold & Associates (JRHA) report *"Soil and Groundwater Investigation, Coral Waste Pit, Ocean Pointe (Ewa Marina), Ewa, Oahu, Hawaii"*, dated November 27, 2000. The area of concern is located within the western end of the pit, where petroleum hydrocarbons were discovered at a depth of approximately 14 inches below ground surface (bgs) during Site Inspection (SI) sampling activities conducted by the DOH in June 1999. A figure showing this area and sample locations are enclosed with this letter.

Trenching at and surrounding the location where the petroleum was initially discovered (location S6) indicates that the petroleum-impacted area extends out to an approximately 25-foot radius from S6. Soil samples from the two most visually impacted trenches (SS09 and SS10) indicate the presence of total petroleum hydrocarbons as diesel (TPH-Diesel) up to 3,300 milligrams per kilogram (mg/kg), TPH-Oil up to 3,900 mg/kg, ethylbenzene up to 0.23 mg/kg, chromium up to 11 mg/kg, zinc up to 4 mg/kg, and several polynuclear aromatic hydrocarbons (PAHs). TPH-Gas was not detected. Groundwater samples from a monitoring well installed at the most visually impacted location (SS09) indicate the presence of a few PAHs, a few pesticides, and zinc up to 0.27 mg/liter (mg/L). TPH-Diesel, TPH-Oil, TPH-Gas, and benzene, toluene, ethylbenzene, and xylenes (BTEX) were not detected. Except for zinc in the groundwater samples, the concentrations detected were all below the Project Action Levels specified in the JRHA *Work Plan* dated June 30, 2000 and approved by the DOH.

At this time, the HEER Office believes that these concentrations do not pose a health risk, as it appears that the petroleum hydrocarbons remaining in the groundwater are not migrating. Therefore, no further action appears necessary at this time in reference to this area of concern. However, you should be informed that if new information indicates that contamination is present at the site at levels that pose a threat to public health, the environment, or natural resources, DOH may require additional investigative and cleanup work. Should you have any questions regarding this matter, please contact Bryce Hataoka at (808) 586-4249.

Sincerely,

KEITH E. KAWAOKA
Manager, Hazard Evaluation and Emergency Response Office

Enclosure: Figure 3 from the November 2000 JRHA *Work Plan*

J.R. Herold & Associates
Environmental Professionals

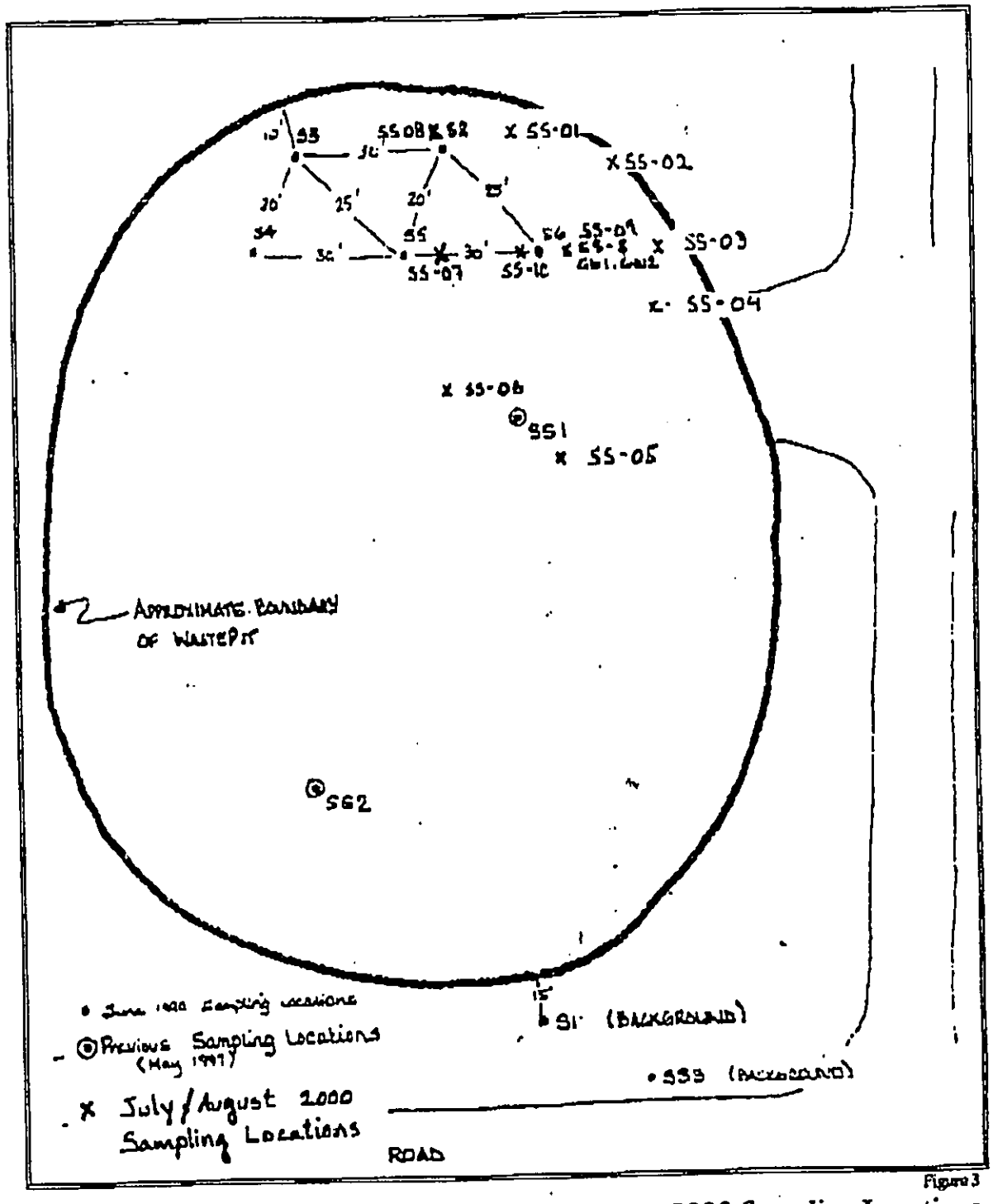


Figure 3

July/August 2000 Sampling Locations

Scale: 1" = Approximately 35'

RE926159 — 8/25/00 — Approved
Project Number — Date
Source: DOH, 1999 and JRHA Field Notes, 2000

EXHIBIT E

Quarterly Waterbird Survey Dated
February 2, 1998, January 28, 2001,
And April 13, 2001

Brigham Young University
Hawaii Campus
Museum of Natural History

DATE: 2 February 1998

TO: Raymond Kanna
Haseko (Ewa), Inc.
820 Mililani St.
Suite 810
Honolulu, Hawaii 96813-2938

FROM: Phil Bruner
Assistant Professor of Biology
Director, Museum of Natural History
BYU-Hawaii
Environmental Consultant - Faunal (Bird & Mammal) Surveys
Box 1775
BYU-H
Laie, Hawaii 96762 FAX: 293-3825

SUBJECT: Letter report for the First (1998) quarterly waterbird and shorebird survey of a Batis covered wetland located on the Haseko (Ewa), Inc. property, Ewa, Oahu, Hawaii.

INTRODUCTION

This report presents the results of a 29 January 1998 field survey of the Batis covered wetland located on Haseko (Ewa), Inc. property at Ewa, Oahu. The weather was clear with light NW winds. The wetland was very dry. The only wet areas were a few low spots with grass and water a couple of inches deep. A chain link fence now surrounds the wetland. No human or dog tracks were seen in the wetland. A Small Indian Mongoose (Herpestes auropunctatus) was observed crossing the wetland. A feral cat was also seen walking along the wetland's makai fenceline.

Only two species of birds were recorded on the survey. Six Pacific Golden-Plover were foraging and resting in the exposed mud flats. The family of five Black-necked Stilts that were seen on 1997 surveys were still present. As I entered the wetland that immediately took flight, circled the wetland two times and then flew off towards Barbers Point. They did not return while I was at the site. The three young produced in 1997 were still closely associated with the two adults, which are presumably their parents. All five birds appeared in good condition. The leg color of the juveniles was similar to the adults but the feather pattern around the head and neck was still typical of juveniles.

The present dry condition of the wetland limits its value as a foraging site. The stilt may be primarily using the wetland as a safe loafing area.

The noise of construction activity could be heard in the wetland. The birds did not react to this noise. They only began calling and flying around when I physically entered the wetland. While I was walking outside the fenceline they were either unaware of my presence or were not disturbed or startled.

Brigham Young University
Hawaii Campus
Museum of Natural History

28 January 2001

TO: Raymond Kanna
HASEKO (Ewa) Inc.
820 Mililani Street
Honolulu, HI 96813-2938

FROM: Phil Bruner
Environmental Consultant
Faunal (Bird & Mammal) Surveys
Box 1775 BYU-H
Laie, HI 96762

SUBJECT: Letter report for the first (2001) quarterly waterbird and migratory shorebird survey of the Batis covered wetland located on HASEKO (Ewa) Inc. land at Ewa, Oahu, Hawaii.

INTRODUCTION

The purpose of this report is to present the findings of the (first) quarterly field survey of the Batis wetland located on HASEKO (Ewa) property for the year 2001. The survey was conducted on 23 January 2001. The weather during the site visit was partly cloudy with brisk easterly winds. The vegetation on the site was lush, indicating little disturbance and perhaps some rain fall in the previous weeks. None of the small ponds located in the wetland contained standing water. The tracks of birds and mammals such as the Small Indian Mongoose (Herpestes auropunctatus) and cats (Felis catus) were abundant in the soil surrounding the dry ponds.

RESULTS AND DISCUSSION

Only two species of birds were tallied on the survey, the Black-necked Stilt (Himantopus mexicanus) and Pacific Golden-Plover (Pluvialis fulva). A pair (male and female) of stilt were present briefly as I entered the wetland. They quickly flew off towards the east and did not return while I was at the wetland. These birds were likely loafing since there was no wet areas suitable for foraging. Two winter plumaged plover were also seen resting in an open area on the east side of the wetland. They flew in circles around the wetland landing periodically and calling as long as I was on the site. No other waterbirds or shorebirds were recorded. The large number of tracks throughout the open bare areas attest to the frequent use of this wetland by stilt and plover. During periods of heavy rains standing water can accumulate and for a brief time may provide foraging opportunities on the invertebrates that would inhabit these shallow ponds. During dry periods the wetland serves as a resting area.

Brigham Young University
Hawaii Campus
Museum of Natural History

13 April 2001

TO: Raymond Kanna
HASEKO (Ewa) Inc.
820 Mililani Street
Honolulu, HI 96813-2938

FROM: Phil Bruner
Environmental Consultant
Faunal (Bird & Mammal) Surveys
Box 1775 BYU-H
Laie, HI 96762

SUBJECT: Letter report for the second (2001) quarterly waterbird and migratory shorebird survey of the Batis covered wetland located on HASEKO (Ewa) Inc. land at Ewa, Oahu, Hawaii.

INTRODUCTION

This report presents the findings or the (second) quarterly field survey of the Batis wetland located on HASEKO (Ewa) property for the year 2001. The survey was conducted on 10 April 2001. The weather during the site visit was clear with light tradewinds. The wetland was almost completely dry. Only two or three spots had wet soil. Two feral cats (Felis catus) were seen walking through the wetland. Cats were also abundant at the adjoining Barber's Point beach park.

RESULTS AND DISCUSSION

Two species of birds were seen on the survey, the Black-necked Stilt (Himantopus mexicanus) and Pacific Golden-Plover (Pluvialis fulva). Two male stilt were observed resting in a dry patch of open ground. They flew off towards Barber's Point when I approached. Two females and one male plover were also seen resting in the wetland. They did not fly off when I walked through the wetland. No other waterbirds or shorebirds were observed. The Black-necked Stilt have nested at this wetland when it contained standing water. This season they may not nest due to the dry conditions.

EXHIBIT F

Ocean Water Chemistry Report, December 2000

OCEAN POINTE

MARINE ENVIRONMENTAL MONITORING PROGRAM

WATER CHEMISTRY

December 2000

Prepared for

HASEKO (Ewa), Inc.
820 Mililani St., 8th Floor
Honolulu, HI 96813-2938

by

Marine Research Consultants
4467 Sierra Dr.
Honolulu, HI 96816

February 23, 2001

INTRODUCTION AND PURPOSE

Phase I of the proposed Ocean Pointe Project is located on 1,100 acres of land along the south shore of Oahu between Ewa Beach and Barbers Point Naval Air Station. The proposed project presently includes residential and commercial development, and approximately 120 acres of waterway providing slips for an estimated 1,400 boats. The planned marina will be excavated from dry lands behind the shoreline, and will be connected to the open ocean by an entrance channel that will bisect a broad offshore limestone platform that is the seaward extension of the Ewa Plain.

Construction of the proposed project will result in alteration of the physical, chemical and biological properties of the nearshore ocean waters in the vicinity of the Marina channel. In addition, development on land, including construction of the residential project has the potential to alter the offshore marine environment through runoff or wind-delivered dust. In order to establish the extent of such potential environmental alterations, one requirement of the Section 401 Water Quality Certification (WQC) issued by the State of Hawaii Department of Health on July 24, 1992 is the establishment of a monitoring program with the express purpose of evaluating the effects on water chemistry resulting from construction and operation of the Ocean Pointe project, including the residential and commercial development as well as the marina itself. The monitoring program is a continuation of a baseline study which described the existing character of the marine environment, including aspects of temporal (seasonal) and spatial variability (Marine Research Consultants, September 1990). The following report presents the data from the twenty-seventh increment of the water chemistry monitoring program that was conducted in December 2000. The results presented are from the thirteenth survey conducted in the during-construction phase of the Ocean Pointe development.

METHODS

This study was carried out in accordance with the methodology approved by the State of Hawaii Department of Health pursuant to the WQC issued for the Ewa Marina project. Three sites in the vicinity of the proposed Ocean Pointe channel alignment were previously selected as water chemistry sampling stations (see Figure 1). Two of the sites (O-W and O-E) were located to the west and east, respectively, of the site of the proposed entrance channel; the third site (Control) was located near the western

end of the property, adjacent to the Barbers Point Recreational Facility. At the request of the State of Hawaii Department of Health, an additional site was added to the sampling scheme in August 1992. The new sampling transect site, located in the center of the proposed entrance channel was designated O-C.

Water quality was evaluated at each site on transects that were oriented perpendicular to the shoreline and depth contours. Water samples were collected at seven stations on each transect from just seaward of the shoreline to approximately 500 m offshore. Such a sampling scheme was designed to span the greatest range of salinity with respect to potential input of materials from the shoreline. Sampling was more concentrated in the nearshore zone because this area is most likely to show the effects of shoreline modification. With the exception of the shoreline stations, samples were collected at two depths; a surface sample was collected within approximately 10 centimeters (cm) of the sea surface, and a bottom sample was collected within one m of the sea floor.

Water quality parameters evaluated included all of the specific criteria designated for open coastal waters in Chapter 11-54, Section 06 (Open Coastal waters) of the State of Hawaii Department of Health (DOH) Water Quality Standards. These criteria include: total nitrogen (TN), nitrate + nitrite nitrogen (NO_3^- + NO_2^-, hereafter referred to as NO_3^-), ammonium nitrogen (NH_4^+), total phosphorus (TP), chlorophyll *a* (Chl *a*), turbidity, total suspended solids (TSS), pH, salinity and temperature. In addition, orthophosphate phosphorus (PO_4^{-3}) and silica (Si) were also reported because these parameters are sensitive indicators of biological activity and the degree of groundwater mixing.

Fieldwork was conducted using a small boat, and by divers swimming from shore on December 28, 2000. Water samples were collected by opening 1-liter polyethylene bottles at the desired depth. Subsamples for nutrient analyses were immediately placed in 125-milliliter (ml) acid-washed, triple rinsed, polyethylene bottles and stored on ice. Analyses for NH_4^+, PO_4^{3-}, and NO_3^- were performed with a Technicon autoanalyzer using standard methods for seawater analysis (Strickland and Parsons 1968, Grasshoff 1983). TN and TP were analyzed in a similar fashion following oxidative digestion. Dissolved organic nitrogen (DON) and dissolved organic phosphorus (DOP) were calculated as the difference between TN and dissolved inorganic N, and TP and dissolved inorganic P, respectively.

Water for other analyses was subsampled from 1-liter polyethylene bottles and kept chilled until analysis. Turbidity was determined on 60-ml subsamples using a Monitek Model 21 nephelometer, and reported in nephelometric turbidity units (NTU). Chl *a* was measured by filtering 300 ml of water through glass-fiber filters; pigments on filters were extracted in 90% acetone in the dark at -20° C for 12-24 hours. Fluorescence before and after acidification of the extract was measured with a Turner Designs fluorometer. Salinity was determined using an AGE Model 2100 laboratory salinometer with a readability of 0.0001‰ (ppt). TSS was measured gravimetrically using a Cahn electrobalance.

In-situ field measurements included water temperature using a hand-held mercury thermometer with a readability of 0.01°C and pH using a portable meter with a readability of 0.01 pH units.

All laboratory analyses were conducted by Marine Analytical Specialists (Lab #HI00009), which possess the appropriate acceptability ratings from the Department of Health.

RESULTS OF WATER CHEMISTRY ANALYSES

Horizontal and Vertical Stratification

Prevailing weather conditions during the December 2000 survey consisted of clear skies, no wind and small surf. Sampling commenced at 0900 during a falling tide with an average tidal height of +1.5 ft above lower mean water. It should be noted that most of the previous samplings had occurred during substantially lower tidal stands. No rainfall occurred during the sampling or during the 48-hr period preceding sampling. Tables 1 and 2 show results of all water chemistry analyses for samples collected off the Ocean Pointe site on December 28, 2000. Table 1 shows results with concentrations of dissolved nutrients in micromolar units (µM), while Table 2 shows the same results in units of micrograms per liter (µg/L). Concentrations of eight dissolved nutrient constituents are plotted as functions of distance from the shoreline in Figure 2, while plots of salinity, turbidity, total suspended solids, Chl *a* and temperature versus distance from shore are shown in Figure 3.

Horizontal gradients in dissolved nutrients and salinity were very small or undetectable at all four sites during the December 2000 (Tables 1 and 2, Figures 2 and 3). The largest horizontal gradient occurred at the Control site, where surface concentration of NO_3^- had a range of approximately 0.35 µM between the shoreline and 500 m offshore. At the control site, salinity had a range of approximately 0.3‰ across the transect (Tables 1 and 2, Figures 2 and 3).

Horizontal gradients along the transects that are oriented perpendicular to shore have been evident in all past surveys to some extent. They are the result of mixing of low salinity groundwater with oceanic water. Low salinity groundwater, which typically contains high concentrations of Si and NO_3^-, percolates to the ocean at the shoreline, resulting in the nearshore zone of mixing evident in past surveys. The lack of such gradients in the present survey is a reflection of the tidal state during sample collection. As noted above, samples were collected during a substantially higher tidal stand than normal. As a result, the increased mixing of groundwater and seawater at the higher tide resulted in virtual elimination of the groundwater signal within the nearshore zone of mixing.

Dissolved nutrient species that are not associated with groundwater input (NH_4^+, DOP, DON) were also essentially constant along the length of the transects and of equal magnitude among the four sites (Figure 2).

Turbidity in the surface waters was highest near the shoreline and lowest in the sample collected 500 m from the shoreline on all transects (Figure 3). The highest turbidity values recorded were from the shoreline stations along the O-E transect (Figure 3 and Tables 1 and 2).

Measurements of total suspended solids (TSS) showed generally higher values in the region between the shoreline and 10 m offshore compared to stations farther offshore at all four sites (Figure 3). Similarly, concentrations of Chl *a* where generally slightly higher in the samples collected within 10 m of the shoreline compared to stations farther from shore (Figure 3, Tables 1 and 2).

Surface temperature during the December 2000 survey ranged between 25.7°C and 26.2°C for all samples collected (Figure 3, Tables 1 and 2). Within any one transect, temperature did not vary by any more than 0.1 C, with the exception of the O-E site

(Tables 1 and 2). At the O-E site, temperature increased from 25.9°C at the shoreline to 26.2°C in the offshore samples (Figure 3, Tables 1 and 2).

Tables 1 and 2 and Figures 2 and 3 also show concentrations of water chemistry constituents with respect to depth in the water column. Groundwater efflux in the nearshore zone often results in a surface lens with lower salinity and higher nutrient content relative to subsurface water. With the absence of horizontal gradients in salinity and groundwater nutrients from the Ocean Pointe sites, there is little evidence of vertical stratification. Although there are instances where concentrations measured in the surface water was different from that measured in the deep water, no consistent pattern of higher concentrations in either surface or deep water emerged from the December 2000 data.

Temporal Comparison of Monitoring Results

Figures 4-11 show histograms of the means and standard errors of data at each site over the course of field sampling prior to any construction activity, and during the construction phase of the Ocean Pointe residential project. Table 3 shows the P-values for single factor analysis of variance for the pre-construction and during construction values of six water chemistry constituents at each of four distances from shore at each of the four transects. Nine surveys conducted between August 1992 and October 1997 constitute the pre-construction phase of the project. Thirteen surveys from December 1997 to December 2000 comprise the during-construction data set.

Considering Si, NO_3^- and turbidity there is a general decrease in mean values with increasing distance offshore at all four sites during both phases of the project (Figures 4-11). There were no significant differences in Si, NO_3^- and turbidity at any sampling location (Table 3). Salinity shows the opposite trend with mean values lower within 10 m of the shoreline compared to the zone 50 - 500 m from the shoreline. Mean temperature at all the sites remained essentially constant from the shoreline to 500 m from the shoreline (Figures 5, 7, 9 and 11).

With respect to horizontal gradients in the mean concentrations of PO_4^{3-}, lower values were evident in the zone between 5 m and 50 m of the shoreline compared to the offshore and shoreline stations at the O-W, O-C and O-E sites (Figures 6, 8 and 10).

This trend was evident during both phases of construction. At the Control site, mean concentration of PO_4^{3-} did not vary to any great extent with distance offshore, with the exception of the 5 m from shore station during the construction phase (Figure 4). At the O-W, O-C and O-E transects, PO_4^{3-} was significantly greater in the samples collected 10 m from shore during construction compared to pre-construction (Table 3).

The mean concentration of NH_4^+ was relatively constant at all stations during both survey phases with one exception. Concentrations of NH_4^+ at the station 5 m from shore at the Control site during the construction phase were anomalously high. Comparing concentrations of NH_4^+ before construction and during construction, there were no significant differences at any of the survey sites (Table 3).

For the nutrients found in high concentrations in groundwater (NO_3^- , PO_4^{3-} and Si), salinity, turbidity and Chl *a* the error bars are very narrow for samples collected beyond 50 m of the shoreline at all four sites during both phases of construction (Figures 4-11). These results suggest that there is little variation in these constituents over time in the offshore waters. In contrast to offshore stations, nearshore stations show greater variability around the mean. The larger range in values reflects the variability of mixing of groundwater and ocean water throughout the period of monitoring, largely as a function of tidal state during the time of sample collection. NH_4^+ and temperature had greater variability around the means for all distances offshore (Figures 4-11).

While comparison of mean values in water chemistry constituents between construction phases is useful, the observation that concentrations of many constituents were higher during construction at the Control site, indicates that the changes in mean concentrations may be a result of natural factors and may not be solely a result of construction activities.

A concern regarding construction of the residential components of Ocean Pointe was the effect of dust generated by excavation on the nearshore ocean. To assess this effect, measurements of total suspended solids (TSS) in water samples collected on the ocean transects was initiated in March 1998 at the outset of construction. TSS is a measurement of all particulate material within a water sample, hence would be expected to increase if delivery of dust to the ocean surface resulted from

construction activities. Because TSS is not a component of the DOH water quality standards, this constituent was not measured as part of the standard suite of components during the pre-construction phase of monitoring. As a result, it is not possible to compare pre- and during construction values of TSS.

Table 4 shows measurements of TSS from each sampling site, as well as geometric means of measurements at each distance from shore according to date and shoreline location. As TSS is a function of resuspension of naturally occurring sediment, it would be expected that there would be gradients with decreasing values with increasing distance from shore (e.g., decreasing wave energy with increasing distance from shore). As a result, all calculations are performed to compare values at the same distances from shore. Inspection of Table 3 indicates that indeed there is a decreasing trend in geometric mean values of TSS with increasing distance from shore.

If airborne dust was adding to the suspended particle load of the water column, it would also be expected that there would be a gradient with increasing values in the downwind direction (e.g., increasing values to the west). Inspection of Table 3 indicates that at some of sampling stations, particularly those closest to shore (1S, 2S), there are slight gradients in the east-west direction. However, 2-Way Analysis of Variance (ANOVA) indicates that there are no significant differences ($p<0.05$) between Stations at any of the distances from shore (Table 3). If airborne dust generated from construction activities was increasing the sediment load of the water column, it would be expected that there would be substantial significant differences between stations, as it is unlikely that dust would be carried upwind of the construction area.

On the other hand, ANOVA statistics indicate that there are significant differences ($p<0.05$) in TSS at ten of the twelve sampling areas when compared by date. This result indicates that at each distance from shore, values of TSS generally varied more depending on the date of sampling (e.g., wave action) than the east to west location. As TSS at the Station most unlikely to be affected be dust from land (7D) differed significantly by date, while Station 2S, located one meter from shore did not show significant differences by date, it appears that input from land had little effect on TSS values of the nearshore ocean off the project site.

Conservative Mixing Analyses

A useful treatment of water chemistry data for interpreting the extent of material inputs from land is application of a hydrographic mixing model. In the simplest form, such a model consists of plotting the concentration of a dissolved chemical species as a function of salinity. It is possible to evaluate the extent of nutrient input from sources other than groundwater efflux by plotting the concentration of the dissolved material as a function of salinity (Officer 1979, Smith and Atkinson 1992, Dollar and Atkinson 1992).

Comparison of the curves produced by such plots with conservative mixing lines provides an indication of the origin and fate of the material in question. Figure 12 shows the concentrations of four dissolved nutrient constituents (Si, NO_3^-, NH_4^+, PO_4^{3-}) at the four sites plotted as functions of salinity for December 2000. Similar plots showing results from all twenty-seven monitoring surveys, grouped by year, are shown in Figure 13. Each plot also shows two conservative mixing lines that were constructed by connecting the endpoint concentrations of open ocean water and groundwater from two different regions. The dashed mixing lines show nutrient concentrations from a potable well drilled through the basaltic region of the Koolau mountains (Kunia II), while the solid mixing lines show nutrient concentrations from the irrigation well in the limestone aquifer of the Ewa plain directly mauka of the proposed Ocean Pointe Marina site. A primary difference between the two mixing lines is that the water in the irrigation well is likely to have received input from leached fertilizers used on sugarcane, while the well water from the basaltic aquifer should not be contaminated from any anthropogenic sources.

If the parameter in question displays purely conservative behavior (no input or removal from any process other than physical mixing), data points should fall on, or near, the conservative mixing line. If, however, external material is added to the system, data points will fall above the mixing line. If material is being removed from the system by processes such as biological uptake, data points will fall below the mixing line.

Dissolved Si represents a check on assumptions of the method, as this material is present in high concentration in groundwater, but is not a major component of fertilizer, and is not generally utilized rapidly within the nearshore environment by biological processes. For the December 2000 data, most data points fall in linear

arrays near the mixing line constructed from the limestone aquifer endpoint (Figure 12). One data point from the O-C transect falls below both mixing lines. None of distributions of data points show curvature, indicating that there is no detectable uptake of Si from the system.

Considering the entire data set (Figure 13), most of the data points for Si fall near or below the limestone aquifer mixing line. Data points for 1997 mostly fall below data points from the other years. It is also apparent that there is distinct upward concave curvature of the data set, particularly in the data points with salinities above 34‰. Such a pattern suggests that there is substantial uptake of Si in the coastal ocean beyond the nearshore zone, or that there is another source of water in the sampling regime. As surface water draining into Pearl Harbor is likely to have substantially lower concentrations of Si than groundwater, the lower nutrient concentrations in the offshore samples at the Ocean Pointe site suggests mixing of two water sources. It is possible that there was discharge of surface runoff from Pearl Harbor that could have affected the Ewa region. The relatively great variability between the pattern of data points comprising the mixing lines suggests that composition of groundwater input to the nearshore zone changes on a short time scale, possibly as a result of weather conditions (primarily rainfall) that affects the composition and volume of water draining from Pearl Harbor.

NO_3^- is the form of nitrogen most common in agricultural fertilizer mixes, and is the most mobile form of nitrogen within soils and groundwater. The data points for all transects fall well below both conservative mixing lines (Figure 12). Contrary to Si, the shape of the curve prescribed by the NO_3^- data points suggests substantial uptake of NO_3^- in the nearshore zone, or mixing of a third water mass. The occurrence of all data points below the mixing lines indicates that there is not an additional subsidy of NO_3^- to the ocean from activities on land.

The plots of NO_3^- versus salinity for the twenty-seven monitoring dates reveals that there are various distinctive characteristics between years (Figure 13). Many of the data points for 1990 surveys fall close to the irrigation well conservative mixing line, while data points from other years fall closer to the conservative mixing line constructed from groundwater from the basaltic aquifer. Nearly all of the data points from all other years fall below both lines, indicating a deficit of NO_3^- relative to the concentrations that should be present owing to mixing of groundwater and ocean water. This deficit may be a result of biotic uptake, or a result of mixing of water

sources from Pearl Harbor that could contain substantially lower NO_3^- than groundwater or ocean water.

The other form of dissolved inorganic nitrogen, NH_4^+, shows a different relationship between concentration and salinity distinct from that of Si and NO_3^-. There is very little difference in the concentrations of NH_4^+ between open ocean water and groundwater from either basaltic or limestone aquifers, resulting in a "flat" conservative mixing line (Figures 12 and 13). The plots of data points reveals that there is no indication of increased concentrations with decreased salinity. In December 2000, concentrations of NH_4^+ in the nearshore ocean samples occurred in a randomly scattered pattern with little of the inverse relationship between salinity and concentration that was apparent with NO_3^- (Figure 12). For the entire data set (Figure 13), the highest concentrations of NH_4^+ occurred at some of the highest salinities. Such a relationship suggests that the source of most NH_4^+ in the nearshore ocean is not from the land, but rather from biological processes occurring in the ocean, or possibly from water flowing from Pearl Harbor.

PO_4^{3-} is also a component of fertilizer but is usually not found to leach to groundwater to the extent of NO_3^-, owing to a high absorptive affinity of phosphorus in soils. The substantial difference between the two conservative mixing lines for PO_4^{3-} is likely a result of more adsorption of PO_4^{3-} in the limestone aquifer relative to the basalt aquifer. For both the December 2000 data (Figure 12), and the entire data set (Figure 13) there is little indication that concentrations of PO_4^{3-} are a function of input of groundwater as denoted by the flat mixing lines and data clusters. Rather, it appears that the concentrations of PO_4^{3-} are a result of mixing of either water masses of the same salinity, or from biological activity in the water.

Compliance with DOH Standards

DOH Water Quality Standards include specific criteria for three situations; criteria that are not to be exceeded during either 10% or 2% of the time, and criteria that are not to be exceeded by the geometric mean of samples. With twenty-seven samples collected over 10 years from each sampling station (22 samples from the O-C site), comparison of the 10% or 2% of the time criteria for any sampling station are not statistically meaningful. However, comparing sample concentrations to these criteria provide an indication of whether water quality is near the stated specific criteria.

Noted in Tables 1 and 2 are samples that exceed DOH 10% water quality standards for open coastal waters under "wet" conditions. The criteria for wet conditions are applied to the Ewa site assuming that this area likely receives at least 3 million gallons of groundwater input per mile per day. A comparison of water chemistry results with DOH criteria reveals that during December 2000 only one parameter (turbidity, in 17 instances) exceeded the 10% criteria. No measurements of NO_3^-, NH_4^+, TP, TN or Chl a exceeded DOH water quality standards during this survey.

As discussed above, NO_3^- is a normal constituent of groundwater, and is also the primary constituent of fertilizer nitrogen that is added to groundwater through leaching of agricultural chemicals. Assuming the concentration of NO_3^- in the basalt aquifer represents typical groundwater concentrations, it is apparent from the conservative mixing lines in Figure 12 that all nearshore samples will exceed DOH criteria at salinities less than approximately 34.5‰ with no further nutrient subsidy from land. All samples collected in December 2000 had salinities greater than 34.5‰ (Tables 1 and 2).

Tables 5 (µM) and 6 (µg/L) show geometric mean data from samples collected at the same locations over the entire course of the monitoring program (twenty-seven survey dates over ten years from the O-W, O-E, and Control sites and twenty-two surveys over seven years from the O-C site). Also shown in these tables are the samples that exceed the DOH geometric mean limits. DOH geometric mean specific criteria were exceed in seventeen cases for NO_3^-, eleven cases for TN, twenty-six cases for turbidity, and all but six cases of Chl *a*. No measurements of NH_4^+ or TP exceeded the geometric mean limits set by the DOH. All of the measurements of NO_3^- and TN that exceeded the DOH geometric mean limits were from samples collected within 10 m of the shoreline.

SUMMARY

- The 27th phase of the Ocean Pointe water chemistry monitoring program was carried out in December 2000. Forty-eight water samples were collected from three survey sites located off the project, as well as off a control site. Water samples were collected on transects perpendicular to shore extending from shoreline to a distance of approximately 500 m offshore. Analysis of fourteen

water chemistry constituents included parameters specified in DOH water quality standards.

- Unlike previous surveys, samples were collected during a medium high tide, and there were no elevated levels of dissolved nutrients (NO_3^-, PO_4^{3-}, TN, TP) or decreased salinity in the shoreline samples. All previous surveys were conducted during low tide and showed distinct horizontal gradients in the nutrients that occur in groundwater, and salinity. These results indicate that groundwater is mixed to background oceanic levels through the entire range of the sampling transects (shoreline to 500 m offshore) during high tides.

- Other water chemistry constituents that are not related to groundwater efflux (NH_4^+ DON and DOP) were relatively constant across the entire range of sampling from the shoreline to the open ocean. Turbidity, TSS, and Chl a showed a pattern of decreasing values with distance from shore at most of the sites while temperature was constant. The magnitude of concentration among the four sites showed only slight variation for DON, DOP, NH_4^+, turbidity and Chl *a* and temperature during December 2000.

- During December 2000 survey there was no indication of vertical stratification within the water column for any constituent.

- Comparative results of pre-construction and during-construction monitoring phases indicate few increases in water chemistry constituents during construction. The variability in the input and mixing characteristics of groundwater efflux at the shoreline off the Ocean Pointe site appears to affect water chemistry to a greater extent than does construction activity. Increases in mean values of water chemistry constituents at the control site (located at the Western end of the property) during the construction phase indicate that construction activities are not responsible for changes in water quality.

- The potential effects of dust generated by construction activities were evaluated by measurements of TSS. The lack of significant differences between TSS at each distance from shore along the east-west gradient of sampling stations indicates little effect from land. Values of TSS varied significantly by sampling date indicating that wave energy which resuspends natural particulates is the most important factor in influencing values of TSS.

- Scaling concentrations of dissolved Si and NO_3^- to salinity indicates that groundwater entering the ocean at the survey sites varies in composition from site-to-site, and survey-to-survey. During the most recent survey, plots of the concentrations of Si as functions of salinity reveal very little mixing of groundwater and ocean water in the nearshore zone. Plots of NO_3^- vs salinity prescribed data curves that indicate either biotic uptake of nutrients and/or mixing of a third water mass. If a third water mass is present in the offshore area, it is possible that it originates as water flowing out of Pearl Harbor and continuing in a westerly direction along the coastline. Scaling of NO_3^- to salinity revealed no external subsidy of NO_3^- other than from agricultural chemicals associated with sugarcane that appears to remain in the aquifer. As with Si, there is noticeable variation in NO_3^- concentrations with respect to salinity over the course of the monitoring program. Dissolved NH_4^+ in the ocean did not exhibit linear relationships with respect to salinity, indicating that concentrations of these constituents in the nearshore zone are not primarily a result of input from groundwater. Concentrations of phosphorus measured in the ocean samples are uniformly low, indicating little input to the ocean from land.

- No water samples exceeded the specific 10% or 2% State DOH water quality standards for NO_3^-, NH_4^+, TP, TN or Chl *a*. A number of measurements of turbidity did exceed the specific 10% and 2% State DOH standards. Calculations of geometric means of water chemistry constituents collected at each station over the last 10 years reveal exceedances of geometric mean criteria for NO_3^-, TN, turbidity and Chl *a* on all of the survey transects, including the control transect.

- The next phase of monitoring will be conducted in the first quarter of 2001.

REFERENCES CITED

Dollar, S. J. and M. J. Atkinson. 1992. Effects of nutrient subsidies from groundwater to nearshore marine ecosystems off the Island of Hawaii. Est. Coast. Shelf Sci. 35. In press.

Grasshoff, K. 1983. Methods of seawater analysis. Verlag Chemie, Weinheim, 419 pp.

Officer, C. B. 1979. Discussion of the behavior of nonconservative dissolved constituents in estuaries. Est. Coast. Mar. Sci. 9:569-576.

Smith, S. V. and M. J. Atkinson 1993. Mass balance analysis of C, N, and P fluxes in coastal water bodies, including lagoons. Coastal Lagoon Processes. (ed) B. Kjerfve, Elsevier Oceanography Series, 60. pp 123-145.

Strickland J. D. H. and T. R. Parsons. 1968. A practical handbook of sea-water analysis. Fisheries Research Bd. of Canada, Bull. 167. 311 p.

TABLE 1. Water chemistry measurements off Ocean Pointe collected on December 28, 2000. Abbreviations as follows: S=surface; D=deep; DFS=distance from shore. Also shown are the State of Hawaii, Department of Health (DOH) "not to exceed more than 10% of the time" and "not to exceed more than 2% of the time" water quality standards for open coastal waters under "wet" conditions. Shaded and boxed values exceed DOH 10% standards. For site locations, see Figure 1.

SITE	NO.	DFS (m)	PO4 (µM)	NO3 (µM)	NH4 (µM)	Si (µM)	DOP (µM)	DON (µM)	TP (µM)	TN (µM)	TURB (ntu)	TSS (mg/L)	SAL (ppt)	CHL a (µg/L)	TEMP (deg C)	pH
DOH 10% STD				**1.00**	**0.61**				**1.29**	**17.85**	**1.25**			**0.90**	*	**
2% STD				**1.78**	**1.07**				**1.93**	**25.00**	**2.00**			**1.75**		
CONTROL	1S	0.1	0.15	0.39	0.14	5.08	0.20	7.07	0.35	7.60	2.30	9.57	34.673	0.23	25.9	8.10
	2S	1	0.15	0.28	0.18	4.99	0.21	6.62	0.36	7.08	1.60	7.87	34.681	0.17	25.9	8.11
	3S	5	0.13	0.16	0.19	4.64	0.21	6.94	0.34	7.29	1.30	4.93	34.678	0.18	25.8	8.12
	3D	5	0.12	0.17	0.19	4.35	0.22	6.29	0.34	6.65	1.59	8.27	34.694	0.26	25.8	8.12
	4S	10	0.13	0.17	0.23	4.69	0.33	7.09	0.46	7.49	1.48	4.40	34.674	0.23	25.8	8.12
	4D	10	0.12	0.08	0.20	4.12	0.23	7.46	0.35	7.74	1.02	5.20	34.688	0.27	25.8	8.13
	5S	50	0.11	0.04	0.18	5.28	0.22	7.50	0.33	7.72	0.54	2.87	34.632	0.22	25.8	8.13
	5D	50	0.20	0.48	0.45	4.56	0.21	7.43	0.41	8.36	0.74	2.40	34.847	0.19	25.8	8.14
	6S	100	0.14	0.02	0.28	2.98	0.23	6.92	0.37	7.22	0.26	1.93	34.940	0.12	25.8	8.15
	6D	100	0.13	0.02	0.20	3.10	0.21	6.12	0.34	6.34	0.31	3.27	34.938	0.13	25.8	8.16
	7S	500	0.14	0.04	0.21	2.88	0.23	6.72	0.37	6.97	0.20	2.14	34.933	0.08	25.7	8.15
	7D	500	0.15	0.05	0.21	3.82	0.23	7.04	0.38	7.30	0.14	4.20	34.908	0.08	25.7	8.15
O-W	1S	0.1	0.14	0.10	0.26	3.27	0.20	7.15	0.34	7.51	1.06	11.20	34.838	0.30	25.8	8.13
	2S	1	0.11	0.10	0.28	3.67	0.22	7.54	0.33	7.92	0.86	4.80	34.822	0.42	25.8	8.12
	3S	5	0.11	0.07	0.26	3.90	0.21	6.27	0.32	6.60	0.97	4.93	34.812	0.34	25.8	8.12
	3D	5	0.12	0.08	0.27	3.51	0.20	6.20	0.32	6.55	0.92	5.20	34.825	0.27	25.8	8.12
	4S	10	0.12	0.11	0.32	4.08	0.20	6.92	0.32	7.35	0.77	4.80	34.807	0.35	25.8	8.12
	4D	10	0.18	0.11	0.17	4.37	0.17	6.28	0.35	6.56	0.75	5.87	34.781	0.33	25.8	8.12
	5S	50	0.13	0.02	0.27	3.73	0.20	6.38	0.33	6.67	0.38	3.80	34.898	0.15	25.8	8.14
	5D	50	0.12	0.01	0.20	3.62	0.20	8.69	0.32	8.90	0.33	2.87	34.894	0.16	25.8	8.14
	6S	100	0.14	0.06	0.19	3.60	0.24	5.68	0.38	5.93	0.29	3.20	34.922	0.11	25.8	8.16
	6D	100	0.15	0.04	0.18	3.27	0.23	6.56	0.38	6.78	0.30	2.93	34.925	0.09	25.8	8.16
	7S	500	0.15	0.05	0.26	2.69	0.22	6.79	0.37	7.10	0.16	7.29	34.908	0.07	25.9	8.13
	7D	500	0.16	0.08	0.13	3.40	0.19	5.34	0.35	5.55	0.15	4.80	34.865	0.08	25.9	8.13
O-C	1S	0.1	0.13	0.12	0.26	5.05	0.20	7.27	0.33	7.65	2.40	18.40	34.853	0.28	25.8	8.14
	2S	1	0.13	0.10	0.23	3.55	0.24	8.57	0.37	8.90	2.00	9.14	34.858	0.26	25.8	8.14
	3S	5	0.14	0.12	0.26	3.49	0.21	7.51	0.35	7.89	1.55	6.93	34.861	0.27	25.8	8.14
	3D	5	0.15	0.15	0.29	3.66	0.19	10.30	0.34	10.74	1.28	8.20	34.854	0.34	25.7	8.14
	4S	10	0.13	0.12	0.16	5.43	0.27	7.58	0.40	7.86	1.26	9.87	34.858	0.29	25.8	8.14
	4D	10	0.18	0.15	0.14	3.85	0.23	8.11	0.41	8.40	1.35	7.40	34.856	0.45	25.8	8.14
	5S	50	0.14	0.04	0.19	4.14	0.21	6.92	0.35	7.15	0.48	2.80	34.889	0.12	25.8	8.14
	5D	50	0.15	0.04	0.13	4.22	0.21	8.05	0.36	8.22	0.39	2.40	34.893	0.18	25.8	8.15
	6S	100	0.19	0.07	0.23	5.34	0.22	6.56	0.41	6.86	0.27	1.27	34.916	0.11	25.8	8.17
	6D	100	0.12	0.08	0.18	3.98	0.21	6.39	0.33	6.65	0.28	3.20	34.918	0.10	25.8	8.17
	7S	500	0.08	0.04	0.14	3.14	0.25	6.82	0.33	7.00	0.10	6.40	34.907	0.13	25.7	8.15
	7D	500	0.08	0.04	0.11	4.58	0.28	6.68	0.36	6.83	0.12	1.20	34.909	0.11	25.7	8.15
O-E	1S	0.1	0.11	0.13	0.12	6.24	0.27	7.12	0.38	7.37	3.10	15.93	34.869	0.18	25.9	8.13
	2S	1	0.12	0.15	0.20	5.05	0.29	7.96	0.41	8.31	3.20	13.00	34.862	0.18	25.9	8.13
	3S	5	0.16	0.10	0.21	4.78	0.22	8.35	0.38	8.66	2.30	7.80	34.876	0.20	25.8	8.13
	3D	5	0.10	0.08	0.20	4.67	0.23	8.41	0.33	8.69	2.10	12.47	34.874	0.21	25.8	8.14
	4S	10	0.32	0.07	0.13	5.21	0.13	8.04	0.45	8.24	2.00	11.93	34.851	0.20	25.8	8.13
	4D	10	0.09	0.08	0.11	4.76	0.35	7.74	0.44	7.93	1.82	10.87	34.855	0.19	25.8	8.13
	5S	50	0.07	0.11	0.03	4.71	0.26	8.25	0.33	8.39	0.39	8.14	34.859	0.10	25.9	8.08
	5D	50	0.07	0.09	0.02	4.70	0.26	8.06	0.33	8.17	0.42	7.93	34.858	0.38	25.8	8.07
	6S	100	0.08	0.12	0.08	4.17	0.27	7.79	0.35	7.99	0.28	2.80	34.893	0.17	26.2	8.14
	6D	100	0.08	0.11	BDL	4.18	0.24	8.10	0.32	8.21	0.37	3.40	34.891	0.19	26.1	8.15
	7S	500	0.11	0.11	0.01	3.10	0.26	7.41	0.37	7.53	0.12	2.87	34.891	0.10	26.2	8.14
	7D	500	0.25	0.10	0.08	3.09	0.21	7.75	0.46	7.93	0.13	4.43	34.893	0.09	26.2	8.14

* Shall vary no more that 1 °C from "ambient conditions"

** Shall not deviate more than 0.5 units from a value of 8.1

TABLE 2. Water chemistry measurements (in µg/L) off Ocean Pointe collected on December 28, 2000. Abbreviations as follows: S=surface; D=deep; DFS=distance from shore. Also shown are the State of Hawaii, Department of Health (DOH) "not to exceed more than 10% of the time" and "not to exceed more than 2% of the time" water quality standards for open coastal waters under "wet" conditions. Shaded and boxed values exceed DOH 10% standards. For site locations, see Figure 1.

SITE	NO.	DFS (m)	PO4 (µg/L)	NO3 (µg/L)	NH4 (µg/L)	Si (µg/L)	DOP (µg/L)	DON (µg/L)	TP (µg/L)	TN (µg/L)	TURB (ntu)	TSS (mg/L)	SAL (ppt)	CHL a (µg/L)	TEMP (deg C)	pH
DOH 10% STD				**14.00**	**8.50**				**40.00**	**250**	**1.25**			**0.90**		
2% STD				**25.00**	**15.00**				**60.00**	**350**	**2.00**			**1.75**	*	**
CONTROL	1S	0.1	4.65	5.46	1.96	142.75	6.20	98.98	10.85	106.40	2.30	9.57	34.673	0.23	25.9	8.10
	2S	1	4.65	3.92	2.52	140.22	6.51	92.68	11.16	99.12	1.60	7.87	34.681	0.17	25.9	8.11
	3S	5	4.03	2.24	2.66	130.38	6.51	97.16	10.54	102.06	1.30	4.93	34.678	0.18	25.8	8.12
	3D	5	3.72	2.38	2.66	122.24	6.82	88.06	10.54	93.10	1.59	8.27	34.694	0.26	25.8	8.12
	4S	10	4.03	2.38	3.22	131.79	10.23	99.26	14.26	104.86	1.48	4.40	34.674	0.23	25.8	8.12
	4D	10	3.72	1.12	2.80	115.77	7.13	104.44	10.85	108.36	1.02	5.20	34.688	0.27	25.8	8.13
	5S	50	3.41	0.56	2.52	148.37	6.82	105.00	10.23	108.08	0.54	2.87	34.632	0.22	25.8	8.13
	5D	50	6.20	6.72	6.30	128.14	6.51	104.02	12.71	117.04	0.74	2.40	34.847	0.19	25.8	8.14
	6S	100	4.34	0.28	3.92	83.74	7.13	96.88	11.47	101.08	0.26	1.93	34.940	0.12	25.8	8.15
	6D	100	4.03	0.28	2.80	87.11	6.51	85.68	10.54	88.76	0.31	3.27	34.938	0.13	25.8	8.16
	7S	500	4.34	0.56	2.94	80.93	7.13	94.08	11.47	97.58	0.20	2.14	34.933	0.08	25.7	8.15
	7D	500	4.65	0.70	2.94	107.34	7.13	98.56	11.78	102.20	0.14	4.20	34.908	0.08	25.7	8.15
O-W	1S	0.1	4.34	1.40	3.64	91.89	6.20	100.10	10.54	105.14	1.06	11.20	34.838	0.30	25.8	8.13
	2S	1	3.41	1.40	3.92	103.13	6.82	105.56	10.23	110.88	0.86	4.80	34.822	0.42	25.8	8.12
	3S	5	3.41	0.98	3.64	109.59	6.51	87.78	9.92	92.40	0.97	4.93	34.812	0.34	25.8	8.12
	3D	5	3.72	1.12	3.78	98.63	6.20	86.80	9.92	91.70	0.92	5.20	34.825	0.27	25.8	8.12
	4S	10	3.72	1.54	4.48	114.65	6.20	96.88	9.92	102.90	0.77	4.80	34.807	0.35	25.8	8.12
	4D	10	5.58	1.54	2.38	122.80	5.27	87.92	10.85	91.84	0.75	5.87	34.781	0.33	25.8	8.12
	5S	50	4.03	0.28	3.78	104.81	6.20	89.32	10.23	93.38	0.38	3.80	34.898	0.15	25.8	8.14
	5D	50	3.72	0.14	2.80	101.72	6.20	121.66	9.92	124.60	0.33	2.87	34.894	0.16	25.8	8.14
	6S	100	4.34	0.84	2.66	101.16	7.44	79.52	11.78	83.02	0.29	3.20	34.922	0.11	25.8	8.16
	6D	100	4.65	0.56	2.52	91.89	7.13	91.84	11.78	94.92	0.30	2.93	34.925	0.09	25.8	8.16
	7S	500	4.65	0.70	3.64	75.59	6.82	95.06	11.47	99.40	0.16	7.29	34.908	0.07	25.9	8.13
	7D	500	4.96	1.12	1.82	95.54	5.89	74.76	10.85	77.70	0.15	4.80	34.865	0.08	25.9	8.13
O-C	1S	0.1	4.03	1.68	3.64	141.91	6.20	101.78	10.23	107.10	2.40	18.40	34.853	0.28	25.8	8.14
	2S	1	4.03	1.40	3.22	99.76	7.44	119.98	11.47	124.60	2.00	9.14	34.858	0.26	25.8	8.14
	3S	5	4.34	1.68	3.64	98.07	6.51	105.14	10.85	110.46	1.55	6.93	34.861	0.27	25.8	8.14
	3D	5	4.65	2.10	4.06	102.85	5.89	144.20	10.54	150.36	1.28	8.20	34.854	0.34	25.7	8.14
	4S	10	4.03	1.68	2.24	152.58	8.37	106.12	12.40	110.04	1.26	9.87	34.858	0.29	25.8	8.14
	4D	10	5.58	2.10	1.96	108.19	7.13	113.54	12.71	117.60	1.35	7.40	34.856	0.45	25.8	8.14
	5S	50	4.34	0.56	2.66	116.33	6.51	96.88	10.85	100.10	0.48	2.80	34.889	0.12	25.8	8.14
	5D	50	4.65	0.56	1.82	118.58	6.51	112.70	11.16	115.08	0.39	2.40	34.893	0.18	25.8	8.15
	6S	100	5.89	0.98	3.22	150.05	6.82	91.84	12.71	96.04	0.27	1.27	34.916	0.11	25.8	8.17
	6D	100	3.72	1.12	2.52	111.84	6.51	89.46	10.23	93.10	0.28	3.20	34.918	0.10	25.8	8.17
	7S	500	2.48	0.56	1.96	88.23	7.75	95.48	10.23	98.00	0.10	6.40	34.907	0.13	25.7	8.15
	7D	500	2.48	0.56	1.54	128.70	8.68	93.52	11.16	95.62	0.12	1.20	34.909	0.11	25.7	8.15
O-E	1S	0.1	3.41	1.82	1.68	175.34	8.37	99.68	11.78	103.18	3.10	15.93	34.869	0.18	25.9	8.13
	2S	1	3.72	2.10	2.80	141.91	8.99	111.44	12.71	116.34	3.20	13.00	34.862	0.18	25.9	8.13
	3S	5	4.96	1.40	2.94	134.32	6.82	116.90	11.78	121.24	2.30	7.80	34.876	0.20	25.8	8.13
	3D	5	3.10	1.12	2.80	131.23	7.13	117.74	10.23	121.66	2.10	12.47	34.874	0.21	25.8	8.14
	4S	10	9.92	0.98	1.82	146.40	4.03	112.56	13.95	115.36	2.00	11.93	34.851	0.20	25.8	8.13
	4D	10	2.79	1.12	1.54	133.76	10.85	108.36	13.64	111.02	1.82	10.87	34.855	0.19	25.8	8.13
	5S	50	2.17	1.54	0.42	132.35	8.06	115.50	10.23	117.46	0.39	8.14	34.859	0.10	25.9	8.08
	5D	50	2.17	1.26	0.28	132.07	8.06	112.84	10.23	114.38	0.42	7.93	34.858	0.38	25.8	8.07
	6S	100	2.48	1.68	1.12	117.18	8.37	109.06	10.85	111.86	0.28	2.80	34.893	0.17	26.2	8.14
	6D	100	2.48	1.54	BDL	117.46	7.44	113.40	9.92	114.94	0.37	3.40	34.891	0.19	26.1	8.15
	7S	500	3.41	1.54	0.14	87.11	8.06	103.74	11.47	105.42	0.12	2.87	34.891	0.10	26.2	8.14
	7D	500	7.75	1.40	1.12	86.83	6.51	108.50	14.26	111.02	0.13	4.43	34.893	0.09	26.2	8.14

* Shall vary no more that 1 °C from "ambient conditions"

** Shall not deviate more than 0.5 units from a value of 8.1

TABLE 3. P-values for single factor analysis of variance (ANOVA) for pre-construction (n=9) and during construction (n=13) surface water chemistry data within 10 m of the shoreline at the four sampling transects off the Ocean Pointe Project. Shaded values indicate significant (P<0.05) increases during construction. For transect location, see figure 1.

TRANSECT	CONSTITUENT	DISTANCE FROM SHORE (m)			
		0.1	1	5	10
CONTROL	SILICA	0.73	0.66	0.66	0.79
	NITRATE	0.91	0.79	0.62	0.44
	PHOSPHATE	0.11	0.08	0.33	0.15
	AMMONIUM	0.83	0.06	0.49	0.02
	TURBIDITY	0.19	0.49	0.40	0.39
	CHL a	0.14	0.36	0.21	0.43
OCEAN WES	SILICA	0.42	0.15	0.16	0.53
	NITRATE	0.21	0.07	0.02	0.24
	PHOSPHATE	0.85	0.33	0.36	0.01
	AMMONIUM	0.83	0.50	0.43	0.09
	TURBIDITY	0.90	0.38	0.69	0.64
	CHL a	0.35	0.27	0.78	0.89
OCEAN CENTRAL	SILICA	0.35	0.57	0.50	0.18
	NITRATE	0.24	0.13	0.92	0.76
	PHOSPHATE	0.22	0.68	0.05	0.01
	AMMONIUM	0.04	0.04	0.16	0.24
	TURBIDITY	0.09	0.35	0.36	0.20
	CHL a	0.24	0.35	0.26	0.50
OCEAN EAST	SILICA	0.27	0.29	0.14	0.32
	NITRATE	0.15	0.16	0.13	0.09
	PHOSPHATE	0.02	0.05	0.01	0.02
	AMMONIUM	0.59	0.37	0.44	0.24
	TURBIDITY	0.40	0.68	0.64	0.74
	CHL a	0.87	0.99	0.80	0.85

TABLE 4. Geometric means of total suspended solids (TSS) at each sampling distance from shore during the construction period of the Ocean Pointe Project (March 1998 to December 2000). Also shown are results of 2-way analysis of variance calculations.

SITE	SAMPLE NO.	DFS (m)	GEOMETRIC MEAN (n=11)	2-WAY ANOVA			
				STATION	df=3	DATE	df=10
				F	signif.	F	signif.
CONTROL	1S	0.1	12.95	0.91	0.44	3.88	0.00
O-W	1S	0.1	13.29				
O-C	1S	0.1	12.18				
O-E	1S	0.1	11.24				
CONTROL	2S	1	17.91	1.02	0.40	1.05	0.43
O-W	2S	1	11.10				
O-C	2S	1	9.44				
O-E	2S	1	10.02				
CONTROL	3S	5	9.83	0.80	0.50	14.17	0.00
O-W	3S	5	9.44				
O-C	3S	5	8.47				
O-E	3S	5	9.92				
CONTROL	3D	5	10.10	2.15	0.11	6.30	0.00
O-W	3D	5	8.19				
O-C	3D	5	7.78				
O-E	3D	5	9.91				
CONTROL	4S	10	9.17	0.71	0.55	5.70	0.00
O-W	4S	10	9.28				
O-C	4S	10	8.04				
O-E	4S	10	9.25				
CONTROL	4D	10	8.13	0.98	0.41	3.50	0.00
O-W	4D	10	8.88				
O-C	4D	10	7.87				
O-E	4D	10	9.08				
CONTROL	5S	50	7.70	2.570	0.070	5.22	0.00
O-W	5S	50	6.86				
O-C	5S	50	5.13				
O-E	5S	50	6.81				
CONTROL	5D	50	7.15	1.60	0.20	2.96	0.01
O-W	5D	50	6.62				
O-C	5D	50	4.09				
O-E	5D	50	6.10				
CONTROL	6S	100	5.83	1.63	0.20	3.50	0.00
O-W	6S	100	5.70				
O-C	6S	100	3.77				
O-E	6S	100	4.98				
CONTROL	6D	100	7.54	2.18	0.11	1.77	0.11
O-W	6D	100	5.02				
O-C	6D	100	4.57				
O-E	6D	100	4.09				
CONTROL	7S	500	2.29	2.04	0.13	3.91	0.00
O-W	7S	500	3.48				
O-C	7S	500	3.14				
O-E	7S	500	2.77				
CONTROL	7D	500	3.02	1.57	0.22	3.50	0.00
O-W	7D	500	3.07				
O-C	7D	500	2.17				
O-E	7D	500	2.11				

TABLE 5. Geometric means of water chemistry measurements collected from four sites off Ocean Pointe during surveys conducted between June 1990 and December 2000 (N=27 surveys for the West, East and Control sites; N=22 for the Central site). For calculation of geometric means, detection limits were used for sample data below the detectable limit. Abbreviations as follows: S=surface; D=deep; DFS=distance from shore. Also shown are State of Hawaii, Department of Health (DOH) geometric mean water quality standards for open coastal waters under "wet" conditions. Shaded and boxed values exceed DOH geometric mean standards. For sampling site locations, see Figure 1.

SITE	NO.	DFS (m)	PO4 (µM)	NO3 (µM)	NH4 (µM)	Si (µM)	DOP (µM)	DON (µM)	TP (µM)	TN (µM)	TURB (ntu)	SAL (ppt)	CHL a (µg/L)	TEMP (deg C)	pH
DOH GM STD				**0.36**	**0.25**				**0.64**	**10.71**	**0.50**		**0.30**	*	**
CONTROL	1S	0.1	0.09	5.58	0.13	30.53	0.24	8.31	0.35	16.15	0.98	33.330	0.96	25.5	8.09
	2S	1	0.08	3.54	0.13	23.52	0.25	8.14	0.35	13.27	0.89	33.770	0.92	25.4	8.10
	3S	5	0.08	1.25	0.15	14.48	0.25	9.24	0.36	11.98	0.77	34.060	0.66	25.3	8.12
	3D	5	0.07	0.95	0.15	13.94	0.25	8.90	0.34	10.96	0.84	34.100	1.01	25.2	8.11
	4S	10	0.06	0.40	0.13	9.56	0.25	8.35	0.32	9.33	0.68	34.260	0.63	25.2	8.12
	4D	10	0.06	0.29	0.14	9.27	0.25	8.08	0.32	8.95	0.66	34.290	0.72	25.2	8.12
	5S	50	0.06	0.06	0.15	5.49	0.26	8.14	0.33	8.45	0.58	34.490	0.64	25.1	8.10
	5D	50	0.05	0.05	0.13	5.46	0.27	8.11	0.34	8.44	0.61	34.480	0.69	25.1	8.10
	6S	100	0.06	0.04	0.15	4.31	0.26	7.50	0.34	7.80	0.46	34.570	0.47	25.1	8.11
	6D	100	0.07	0.04	0.13	4.17	0.25	7.85	0.33	8.13	0.45	34.580	0.66	25.1	8.11
	7S	500	0.09	0.04	0.13	3.06	0.25	7.31	0.35	7.54	0.22	34.710	0.30	25.1	8.15
	7D	500	0.10	0.05	0.11	3.13	0.24	7.20	0.35	7.43	0.21	34.710	0.28	25.2	8.15
O-W	1S	0.1	0.12	4.18	0.15	26.82	0.27	8.48	0.41	15.95	0.92	33.560	1.02	25.4	8.09
	2S	1	0.09	3.60	0.20	20.91	0.24	8.71	0.35	15.04	0.69	33.810	0.83	25.5	8.12
	3S	5	0.06	0.70	0.14	10.46	0.24	8.25	0.32	10.62	0.59	34.210	0.74	25.3	8.12
	3D	5	0.06	0.55	0.15	10.06	0.25	8.67	0.32	11.05	0.59	34.200	0.84	25.3	8.13
	4S	10	0.06	0.31	0.14	8.04	0.25	8.51	0.32	9.80	0.57	34.300	0.73	25.3	8.12
	4D	10	0.06	0.31	0.13	8.05	0.24	8.67	0.33	9.83	0.58	34.310	0.77	25.2	8.12
	5S	50	0.06	0.12	0.11	5.27	0.24	8.10	0.32	8.59	0.51	34.500	0.58	25.2	8.11
	5D	50	0.06	0.09	0.15	5.02	0.25	8.07	0.33	8.51	0.50	34.520	0.61	25.2	8.11
	6S	100	0.08	0.05	0.12	3.99	0.24	7.57	0.34	7.83	0.35	34.620	0.38	25.2	8.13
	6D	100	0.08	0.05	0.14	3.72	0.24	7.58	0.34	7.83	0.34	34.640	0.48	25.2	8.13
	7S	500	0.09	0.04	0.13	3.36	0.24	7.23	0.34	7.45	0.19	34.710	0.29	25.2	8.15
	7D	500	0.10	0.05	0.14	3.19	0.24	7.09	0.36	7.33	0.19	34.720	0.27	25.1	8.16
O-C	1S	0.1	0.07	2.50	0.25	12.58	0.28	8.88	0.36	12.77	0.93	34.080	0.84	25.4	8.17
	2S	1	0.06	2.26	0.25	11.86	0.26	8.71	0.33	11.97	0.67	34.170	0.77	25.4	8.18
	3S	5	0.06	1.08	0.22	9.04	0.26	8.65	0.33	10.56	0.59	34.290	0.74	25.3	8.18
	3D	5	0.06	1.15	0.24	9.05	0.27	8.68	0.34	10.68	0.56	34.280	0.82	25.4	8.18
	4S	10	0.07	0.30	0.18	6.19	0.26	8.66	0.34	9.40	0.52	34.480	0.65	25.3	8.16
	4D	10	0.06	0.24	0.20	5.51	0.27	8.26	0.34	8.87	0.50	34.500	0.69	25.3	8.16
	5S	50	0.07	0.07	0.16	4.08	0.27	8.14	0.35	8.43	0.40	34.640	0.51	25.1	8.13
	5D	50	0.08	0.08	0.17	3.76	0.27	7.80	0.36	8.11	0.38	34.640	0.58	25.1	8.13
	6S	100	0.09	0.06	0.18	3.81	0.27	7.66	0.37	7.98	0.31	34.670	0.37	25.1	8.14
	6D	100	0.09	0.06	0.18	3.76	0.26	7.66	0.36	7.98	0.32	34.660	0.45	25.1	8.14
	7S	500	0.10	0.06	0.18	3.18	0.26	7.16	0.37	7.47	0.18	34.720	0.31	25.2	8.16
	7D	500	0.10	0.06	0.15	2.93	0.27	7.10	0.37	7.38	0.17	34.770	0.34	25.2	8.16
O-E	1S	0.1	0.07	1.89	0.22	11.76	0.28	8.23	0.36	13.17	0.93	33.990	0.76	25.7	8.21
	2S	1	0.06	1.49	0.23	10.91	0.27	7.90	0.34	12.12	0.75	34.080	0.66	25.6	8.21
	3S	5	0.06	0.47	0.19	7.64	0.26	7.89	0.33	10.31	0.70	34.290	0.64	25.5	8.20
	3D	5	0.06	0.43	0.17	7.50	0.25	8.26	0.33	10.32	0.69	34.330	0.68	25.4	8.19
	4S	10	0.07	0.21	0.18	5.16	0.25	8.08	0.34	8.98	0.66	34.510	0.57	25.3	8.18
	4D	10	0.07	0.20	0.16	5.18	0.26	8.05	0.34	8.85	0.62	34.510	0.58	25.3	8.18
	5S	50	0.08	0.09	0.13	4.29	0.26	7.98	0.36	8.41	0.43	34.600	0.48	25.3	8.15
	5D	50	0.08	0.09	0.10	4.54	0.27	8.19	0.37	8.63	0.47	34.570	0.57	25.3	8.14
	6S	100	0.09	0.08	0.14	4.02	0.25	7.73	0.36	8.03	0.31	34.640	0.36	25.4	8.14
	6D	100	0.10	0.08	0.11	3.71	0.24	7.77	0.36	8.08	0.31	34.650	0.40	25.3	8.14
	7S	500	0.10	0.06	0.13	3.47	0.26	7.38	0.37	7.66	0.17	34.700	0.27	25.4	8.15
	7D	500	0.11	0.05	0.10	2.97	0.26	7.46	0.38	7.70	0.16	34.740	0.29	25.4	8.16

* Shall vary no more that 1 °C from "ambient conditions"

** Shall not deviate more than 0.5 units from a value of 8.1

TABLE 6. Geometric means of water chemistry measurements (in µg/L) collected from four sites off Ocean Pointe during surveys conducted between June 1990 and December 2000 (N=27 surveys for the West, East and Control sites; N=22 for the Central site). For calculation of geometric means, detection limits were used for sample data below the detectable limit. Abbreviations as follows: S=surface; D=deep; DFS=distance from shore. Also shown are State of Hawaii, Department of Health (DOH) geometric mean water quality standards for open coastal waters under "wet" conditions. Shaded and boxed values exceed DOH geometric mean standards. For sampling site locations, see Figure 1.

SITE	NO.	DFS (m)	PO4 (µg/L)	NO3 (µg/L)	NH4 (µg/L)	Si (µg/L)	DOP (µg/L)	DON (µg/L)	TP (µg/L)	TN (µg/L)	TURB (ntu)	SAL (ppt)	CHL a (µg/L)	TEMP (deg C)	pH
DOH GM STD				**5.00**	**3.50**				**20.00**	**150.0**	**0.50**		**0.30**	*	**
CONTROL	1S	0.1	2.79	78.12	1.82	860.9	7.44	116.3	10.85	226.10	0.98	33.330	0.96	25.5	8.09
	2S	1	2.48	49.56	1.82	663.3	7.75	114.0	10.85	185.78	0.89	33.770	0.92	25.4	8.10
	3S	5	2.48	17.50	2.10	408.3	7.75	129.4	11.16	167.72	0.77	34.060	0.66	25.3	8.12
	3D	5	2.17	13.30	2.10	393.1	7.75	124.6	10.54	153.44	0.84	34.100	1.01	25.2	8.11
	4S	10	1.86	5.60	1.82	269.6	7.75	116.9	9.92	130.62	0.68	34.260	0.63	25.2	8.12
	4D	10	1.86	4.06	1.96	261.4	7.75	113.1	9.92	125.30	0.66	34.290	0.72	25.2	8.12
	5S	50	1.86	0.84	2.10	154.8	8.06	114.0	10.23	118.30	0.58	34.490	0.64	25.1	8.10
	5D	50	1.55	0.70	1.82	154.0	8.37	113.5	10.54	118.16	0.61	34.480	0.69	25.1	8.10
	6S	100	1.86	0.56	2.10	121.5	8.06	105.0	10.54	109.20	0.46	34.570	0.47	25.1	8.11
	6D	100	2.17	0.56	1.82	117.6	7.75	109.9	10.23	113.82	0.45	34.580	0.66	25.1	8.11
	7S	500	2.79	0.56	1.82	86.3	7.75	102.3	10.85	105.56	0.22	34.710	0.30	25.1	8.15
	7D	500	3.10	0.70	1.54	88.3	7.44	100.8	10.85	104.02	0.21	34.710	0.28	25.2	8.15
O-W	1S	0.1	3.72	58.52	2.10	756.3	8.37	118.7	12.71	223.30	0.92	33.560	1.02	25.4	8.09
	2S	1	2.79	50.40	2.80	589.7	7.44	121.9	10.85	210.56	0.69	33.810	0.83	25.5	8.12
	3S	5	1.86	3.80	1.96	295.0	7.44	115.5	9.92	148.68	0.59	34.210	0.74	25.3	8.12
	3D	5	1.86	7.70	2.10	283.7	7.75	121.4	9.92	154.70	0.59	34.200	0.84	25.3	8.13
	4S	10	1.86	4.34	1.96	226.7	7.75	119.1	9.92	137.20	0.57	34.300	0.73	25.3	8.12
	4D	10	1.86	4.34	1.82	227.0	7.44	121.4	10.23	137.62	0.58	34.310	0.77	25.2	8.12
	5S	50	1.86	1.68	1.54	148.6	7.44	113.4	9.92	120.26	0.51	34.500	0.58	25.2	8.11
	5D	50	1.86	1.26	2.10	141.6	7.75	113.0	10.23	119.14	0.50	34.520	0.61	25.2	8.11
	6S	100	2.48	0.70	1.68	112.5	7.44	106.0	10.54	109.62	0.35	34.620	0.38	25.2	8.13
	6D	100	2.48	0.70	1.96	104.9	7.44	106.1	10.54	109.62	0.34	34.640	0.48	25.2	8.13
	7S	500	2.79	0.56	1.82	94.8	7.44	101.2	10.54	104.30	0.19	34.710	0.29	25.2	8.15
	7D	500	3.10	0.70	1.96	90.0	7.44	99.3	11.16	102.62	0.19	34.720	0.27	25.1	8.16
O-C	1S	0.1	2.17	35.00	3.50	354.8	8.68	124.3	11.16	178.78	0.93	34.080	0.84	25.4	8.17
	2S	1	1.86	31.64	3.50	334.5	8.06	121.9	10.23	167.58	0.67	34.170	0.77	25.4	8.18
	3S	5	1.86	15.12	3.08	254.9	8.06	121.1	10.23	147.84	0.59	34.290	0.74	25.3	8.18
	3D	5	1.86	16.10	3.36	255.2	8.37	121.5	10.54	149.52	0.56	34.280	0.82	25.4	8.18
	4S	10	2.17	4.20	2.52	174.6	8.06	121.2	10.54	131.60	0.52	34.480	0.65	25.3	8.16
	4D	10	1.86	3.36	2.80	155.4	8.37	115.6	10.54	124.18	0.50	34.500	0.69	25.3	8.16
	5S	50	2.17	0.98	2.24	115.1	8.37	114.0	10.85	118.02	0.40	34.640	0.51	25.1	8.13
	5D	50	2.48	1.12	2.38	106.0	8.37	109.2	11.16	113.54	0.38	34.640	0.58	25.1	8.13
	6S	100	2.79	0.84	2.52	107.4	8.37	107.2	11.47	111.72	0.31	34.670	0.37	25.1	8.14
	6D	100	2.79	0.84	2.52	106.0	8.06	107.2	11.16	111.72	0.32	34.660	0.45	25.1	8.14
	7S	500	3.10	0.84	2.52	89.7	8.06	100.2	11.47	104.58	0.18	34.720	0.31	25.2	8.16
	7D	500	3.10	0.84	2.10	82.6	8.37	99.4	11.47	103.32	0.17	34.770	0.34	25.2	8.16
O-E	1S	0.1	2.17	26.46	3.08	331.6	8.68	115.2	11.16	184.38	0.93	33.990	0.76	25.7	8.21
	2S	1	1.86	20.86	3.22	307.7	8.37	110.6	10.54	169.68	0.75	34.080	0.66	25.6	8.21
	3S	5	1.86	6.58	2.66	215.4	8.06	110.5	10.23	144.34	0.70	34.290	0.64	25.5	8.20
	3D	5	1.86	6.02	2.38	211.5	7.75	115.6	10.23	144.48	0.69	34.330	0.68	25.4	8.19
	4S	10	2.17	2.94	2.52	145.5	7.75	113.1	10.54	125.72	0.66	34.510	0.57	25.3	8.18
	4D	10	2.17	2.80	2.24	146.1	8.06	112.7	10.54	123.90	0.62	34.510	0.58	25.3	8.18
	5S	50	2.48	1.26	1.82	121.0	8.06	111.7	11.16	117.74	0.43	34.600	0.48	25.3	8.15
	5D	50	2.48	1.26	1.40	128.0	8.37	114.7	11.47	120.82	0.47	34.570	0.57	25.3	8.14
	6S	100	2.79	1.12	1.96	113.4	7.75	108.2	11.16	112.42	0.31	34.640	0.36	25.4	8.14
	6D	100	3.10	1.12	1.54	104.6	7.44	108.8	11.16	113.12	0.31	34.650	0.40	25.3	8.14
	7S	500	3.10	0.84	1.82	97.9	8.06	103.3	11.47	107.24	0.17	34.700	0.27	25.4	8.15
	7D	500	3.41	0.70	1.40	83.8	8.06	104.4	11.78	107.80	0.16	34.740	0.29	25.4	8.16

* Shall vary no more that 1 °C from "ambient conditions"

** Shall not deviate more than 0.5 units from a value of 8.1

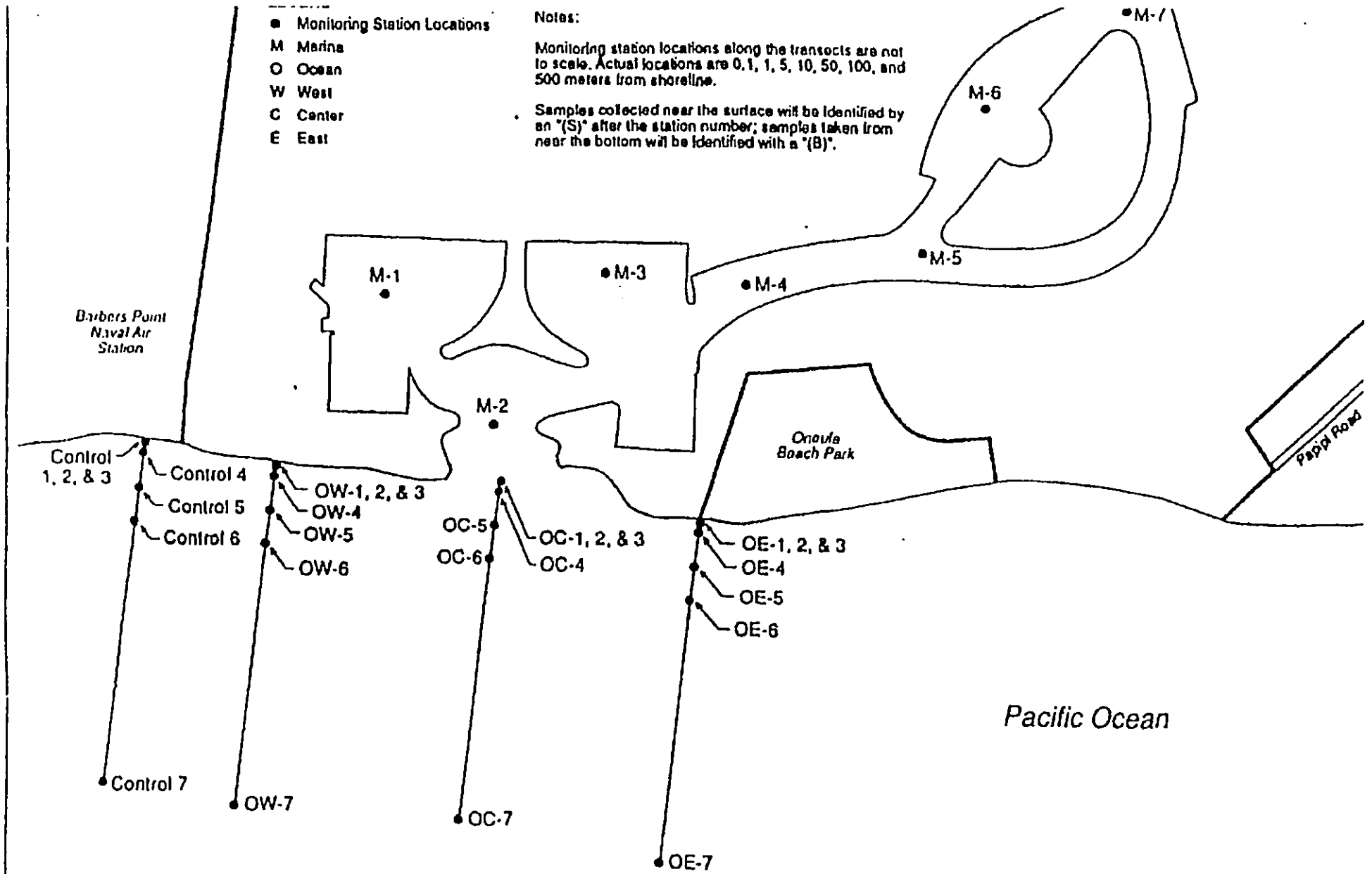


FIGURE 1. Map showing locations of ocean sampling stations on transects designated as O-E, O-C, O-W and Control off the proposed Ewa Marina site.

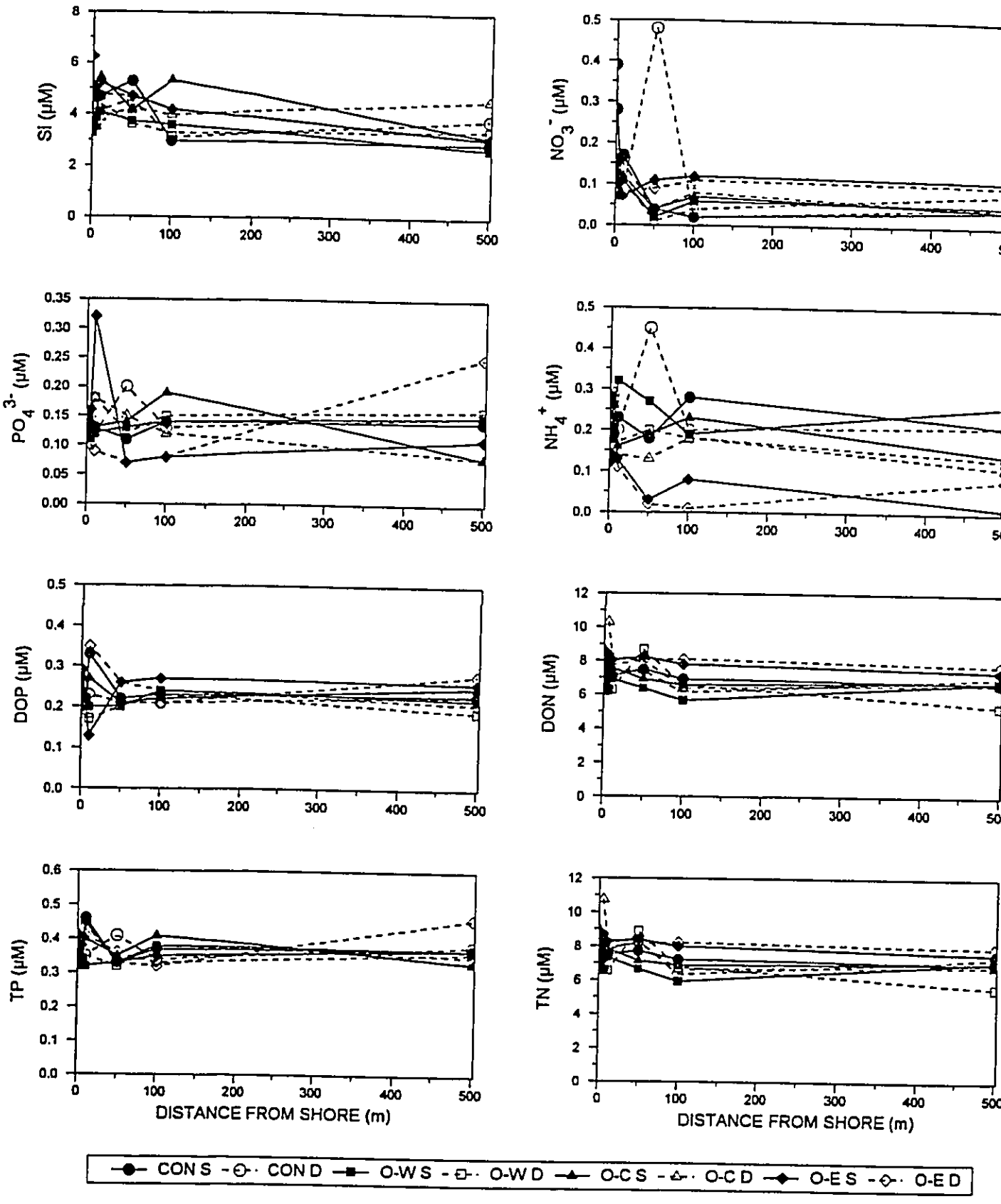


FIGURE 2. Plots of dissolved nutrients in surface (S) and deep (D) samples collected on December 28, 2000 as a function of distance from the shoreline in the vicinity of Ocean Pointe. Site abbreviations as follows: CON (ocean control); O-W (ocean west); O-C (ocean central); O-E (ocean east). For site locations, see Figure 1.

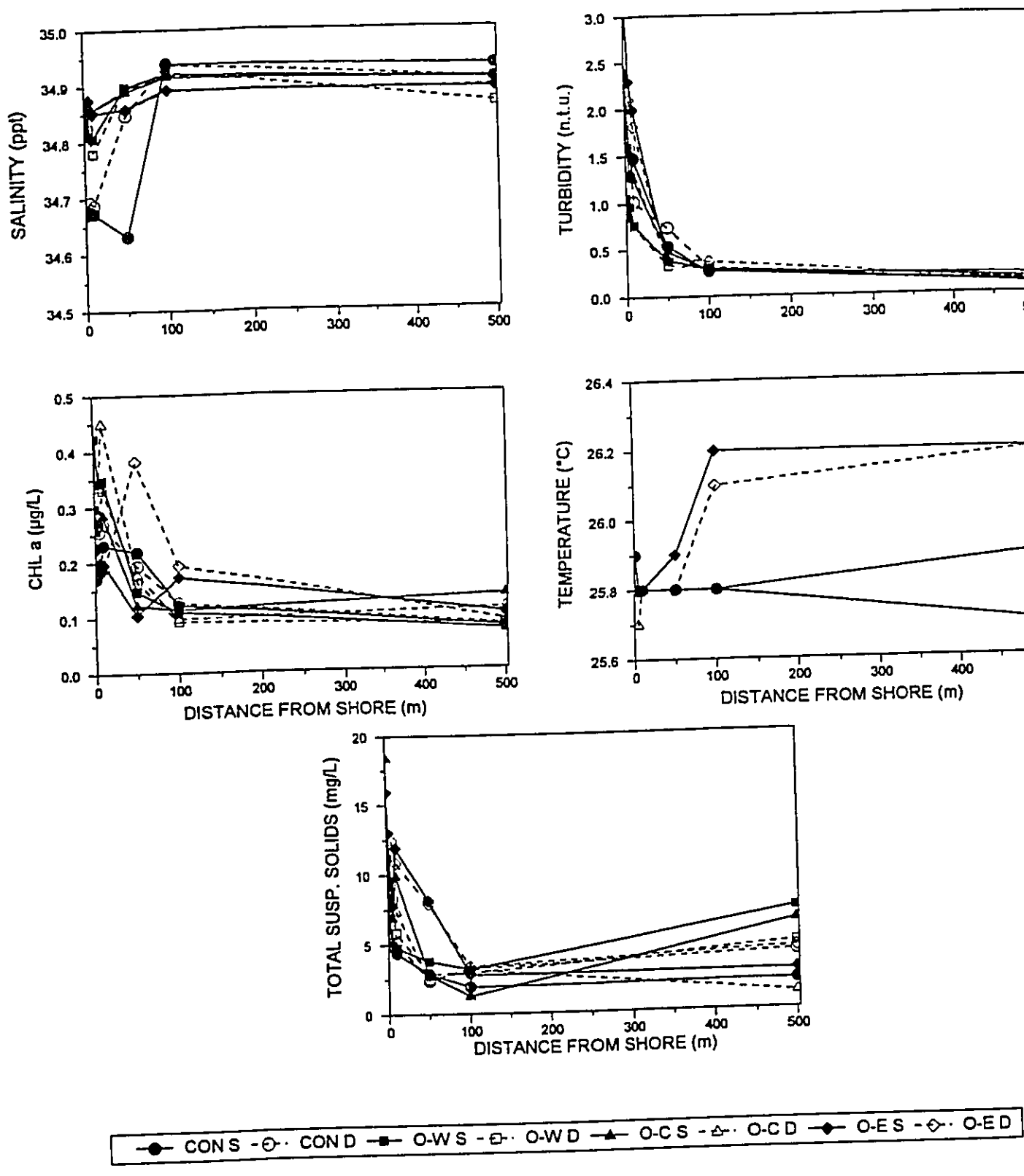


FIGURE 3. Plots of water chemistry constituents in surface (S) and deep (D) samples collected on December 28, 2000 as a function of distance from the shoreline in the vicinity of Ocean Pointe. Site abbreviations as follows: CON (ocean control); O-W (ocean west); O-C (ocean central); O-E (ocean east). For site locations, see Figure 1.

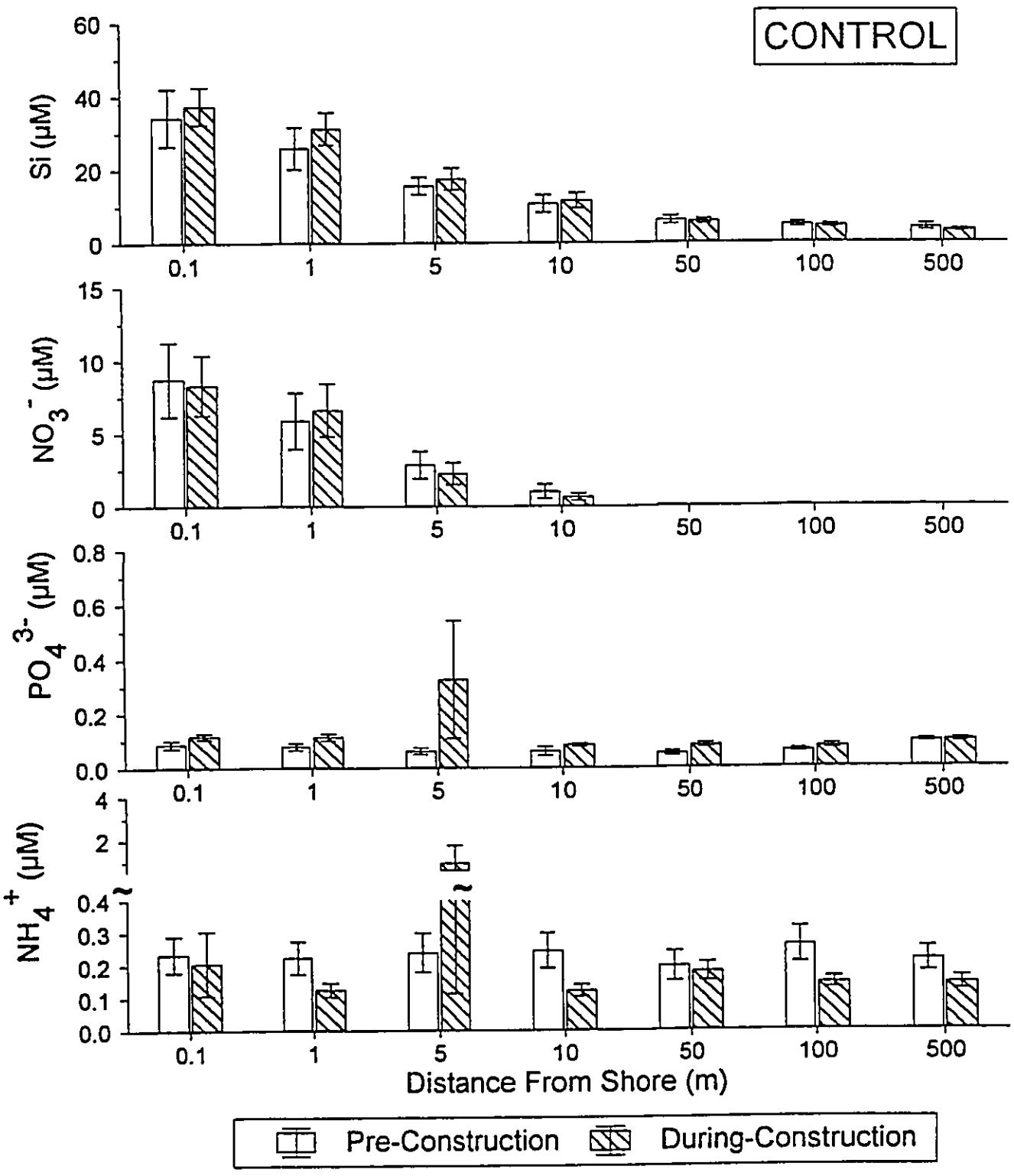


FIGURE 4. Bar plots comparing dissolved nutrient constituents measured in surface water samples collected at the Control site offshore of Ocean Pointe during different phases of construction. Pre-construction data are means from surveys conducted between August 1992 and October 1997 (N=9). During- construction data are means from surveys conducted since December 1997 (N=13). Error bars represent standard error of the mean. Note Y-axis scale break for NH4. For site location, see Figure 1.

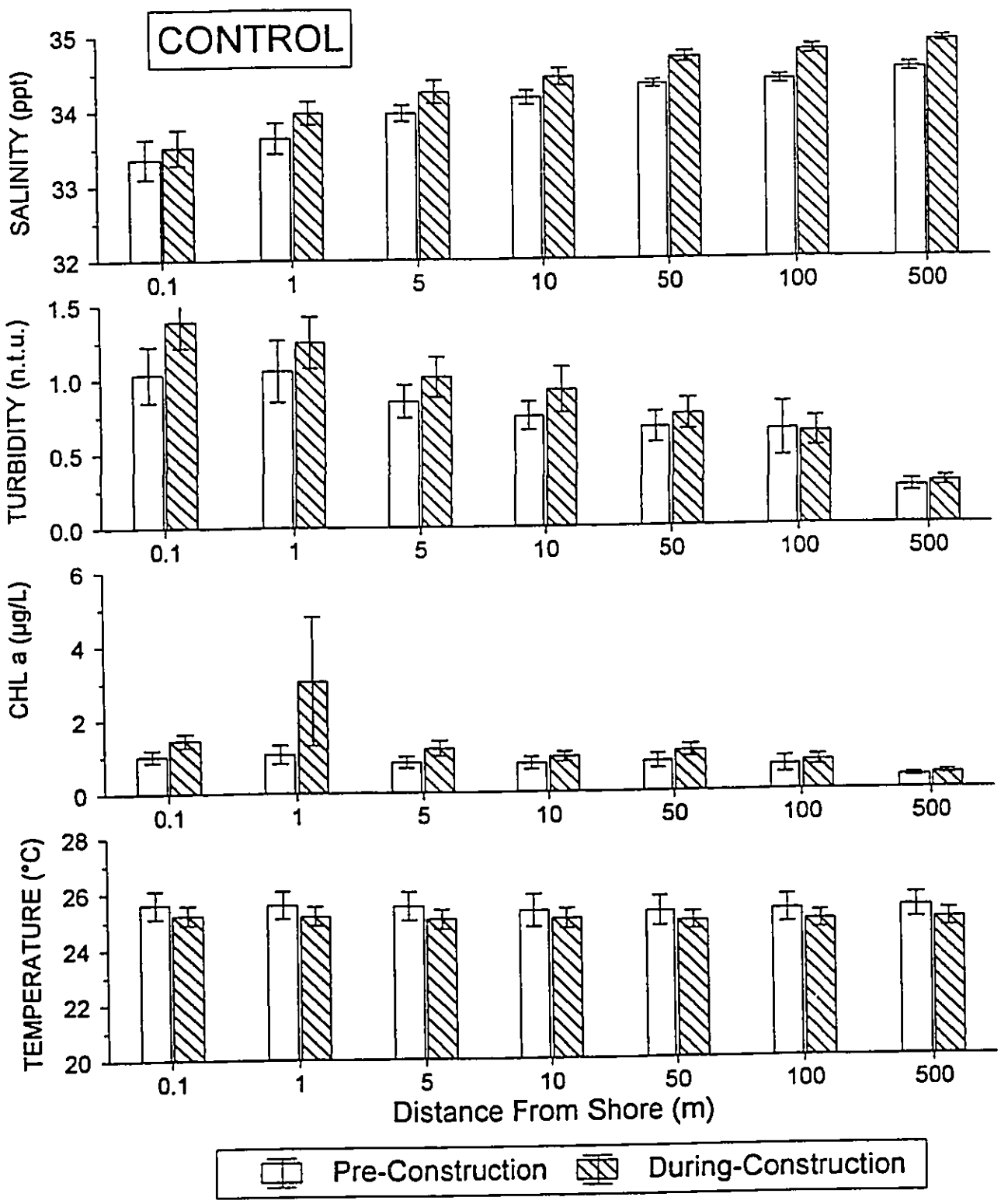


FIGURE 5. Bar plots comparing water chemistry constituents measured in surface water samples collected at the Control site offshore of Ocean Pointe during different phases of construction. Pre-construction data are means from surveys conducted between August 1992 and October 1997 (N=9). During- construction data are means from surveys conducted since December 1997 (N=13). Error bars represent standard error of the mean. For site location, see Figure 1.

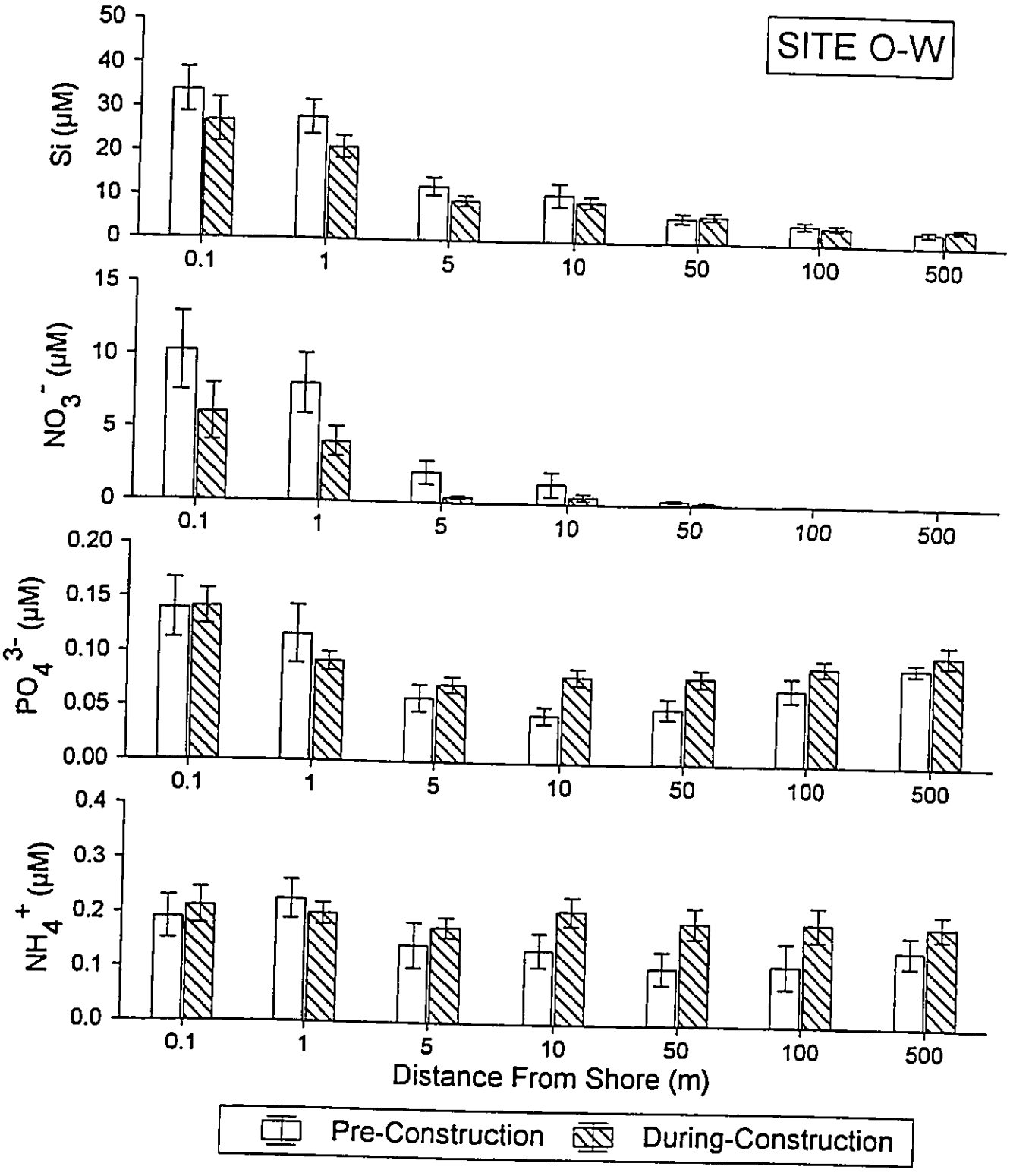


FIGURE 6. Bar plots comparing dissolved nutrient constituents measured in surface water samples collected at the Ocean West (O-W) site offshore of Ocean Pointe during different phases of construction. Pre-construction data are means from surveys conducted between August 1992 and October 1997 (N=9). During-construction data are means from surveys conducted since December 1997 (N=13). Error bars represent standard error of the mean. For site location, see Figure 1.

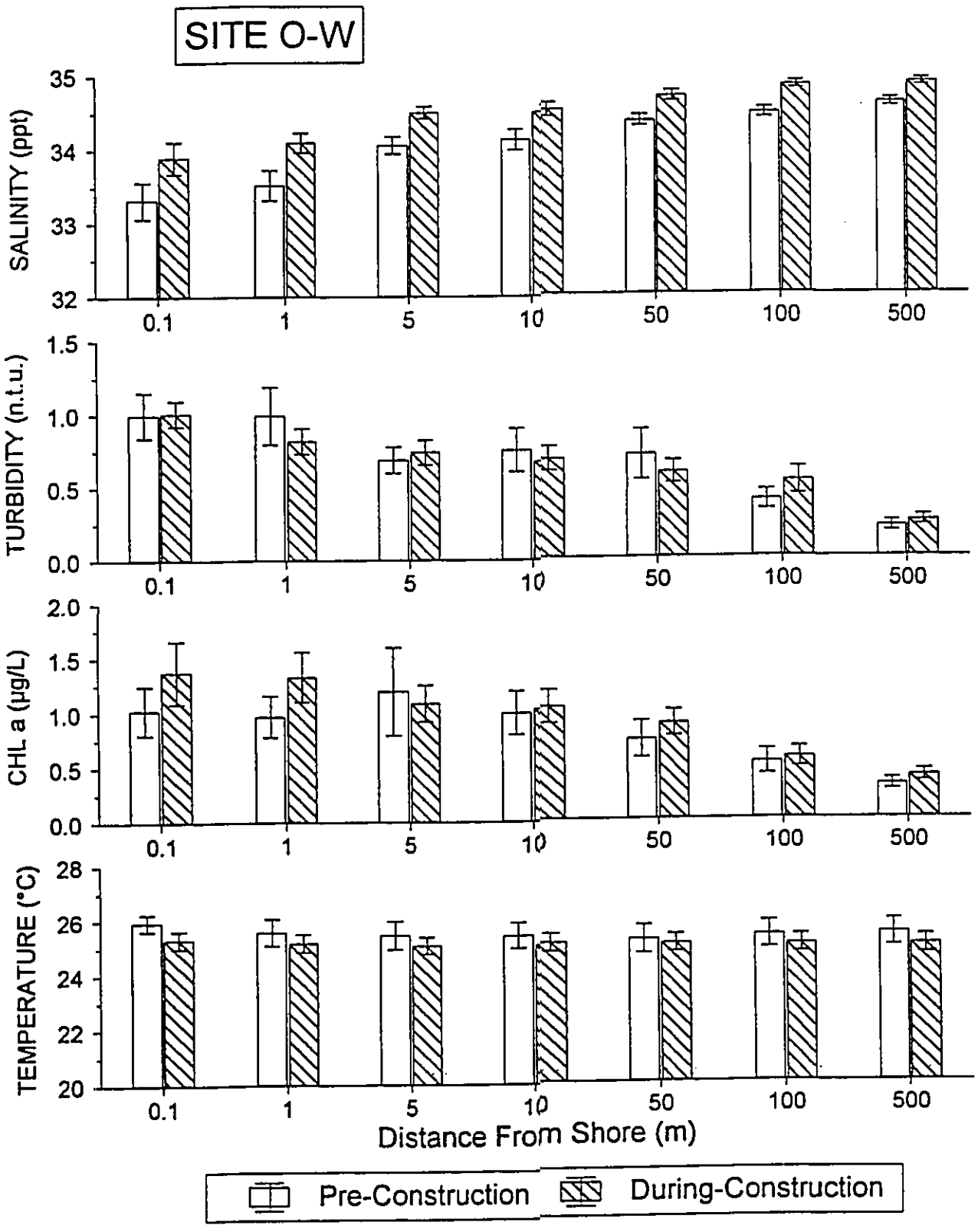


FIGURE 7. Bar plots comparing water chemistry constituents measured in surface water samples collected at the Ocean West (O-W) site offshore of Ocean Pointe during different phases of construction. Pre-construction data are means from surveys conducted between August 1992 and October 1997 (N=9). During-construction data are means from surveys conducted since December 1997 (N=13). Error bars represent standard error of the mean. For site location, see Figure 1.

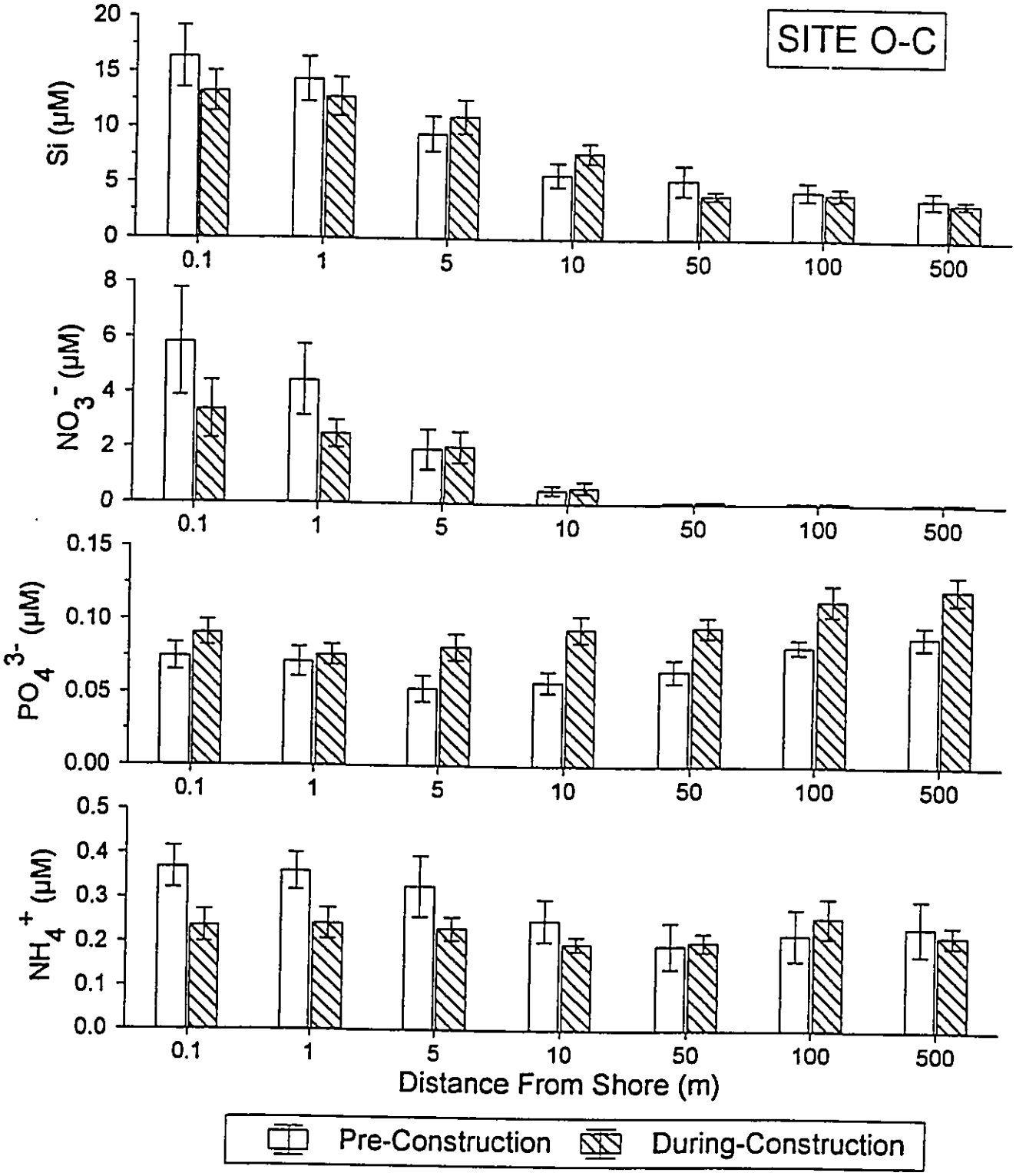


FIGURE 8. Bar plots comparing dissolved nutrient constituents measured in surface water samples collected at the Ocean Central (O-C) site offshore of Ocean Pointe during different phases of construction. Pre-construction data are means from surveys conducted between August 1992 and October 1997 (N=9). During-construction data are means from surveys conducted since December 1997 (N=13). Error bars represent standard error of the mean. For site location, see Figure 1.

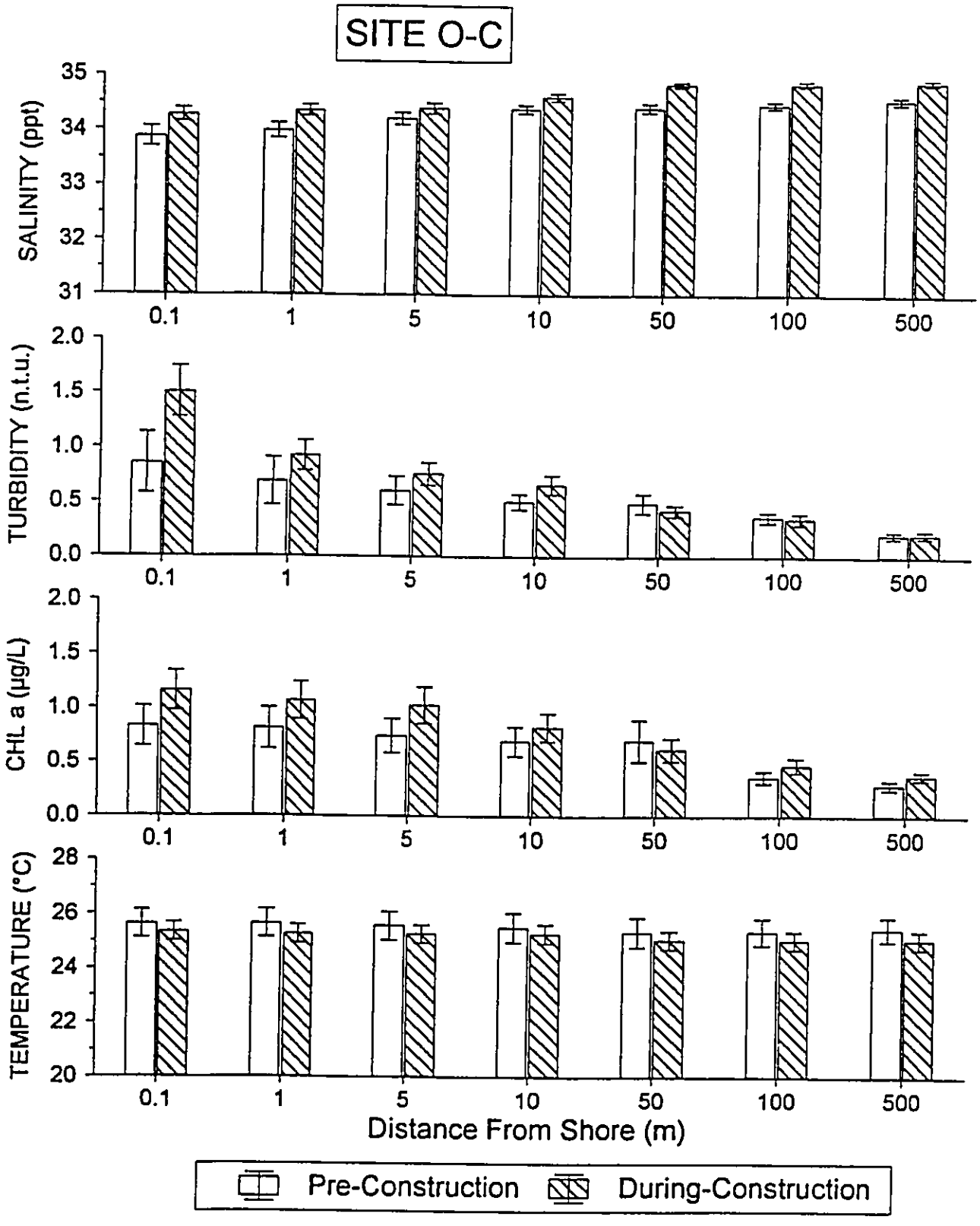


FIGURE 9. Bar plots comparing water chemistry constituents measured in surface water samples collected at the Ocean Central (O-C) site offshore of Ocean Pointe during different phases of construction. Pre-construction data are means from surveys conducted between August 1992 and October 1997 (N=9). During-construction data are means from surveys conducted since December 1997 (N=13). Error bars represent standard error of the mean. For site location, see Figure 1.

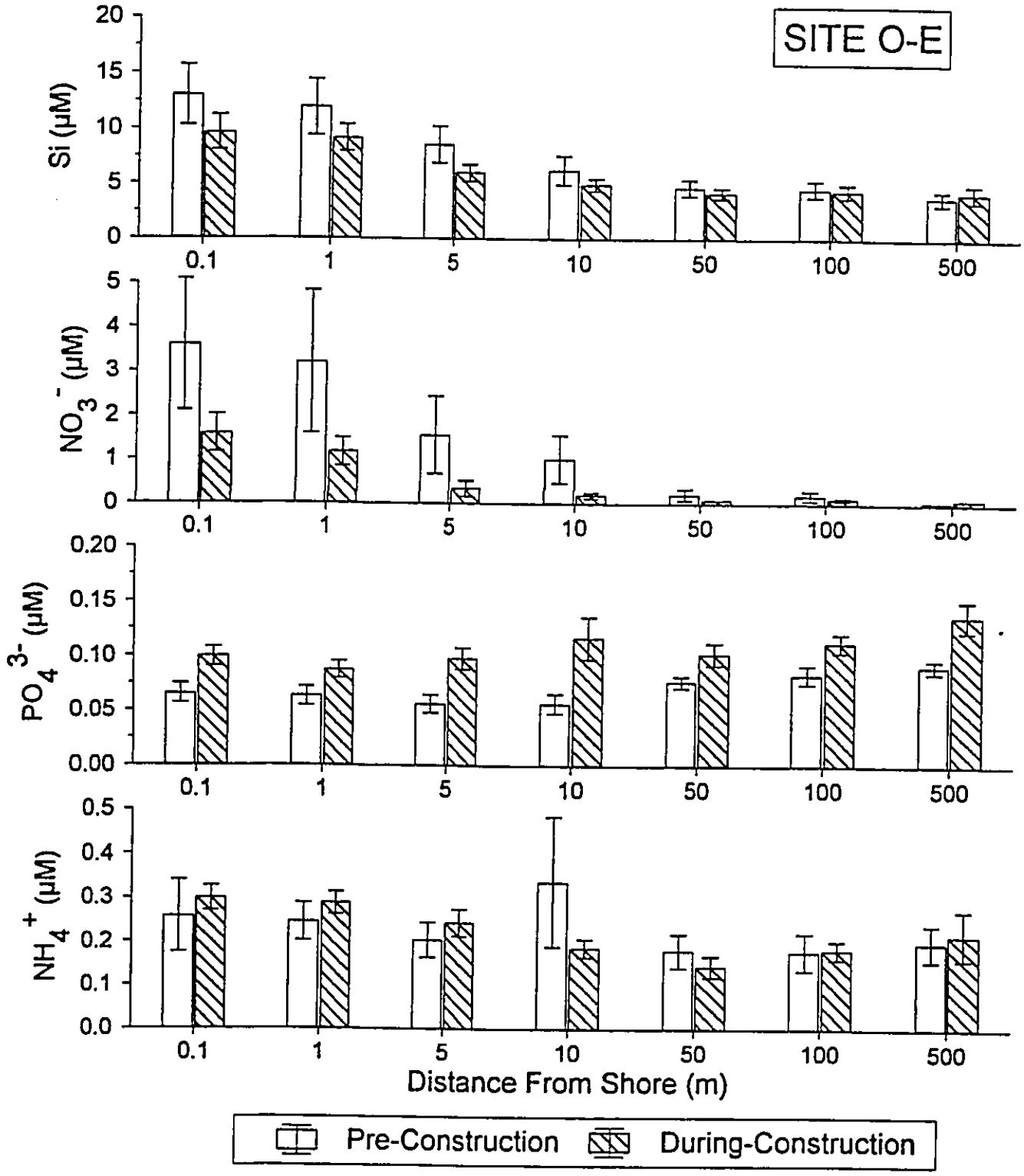


FIGURE 10. Bar plots comparing dissolved nutrient constituents measured in surface water samples collected at the Ocean East (O-E) site offshore of Ocean Pointe during different phases of construction. Pre-construction data are means from surveys conducted between August 1992 and October 1997 (N=9). During-construction data are means from surveys conducted since December 1997 (N=13). Error bars represent standard error of the mean. For site location, see Figure 1.

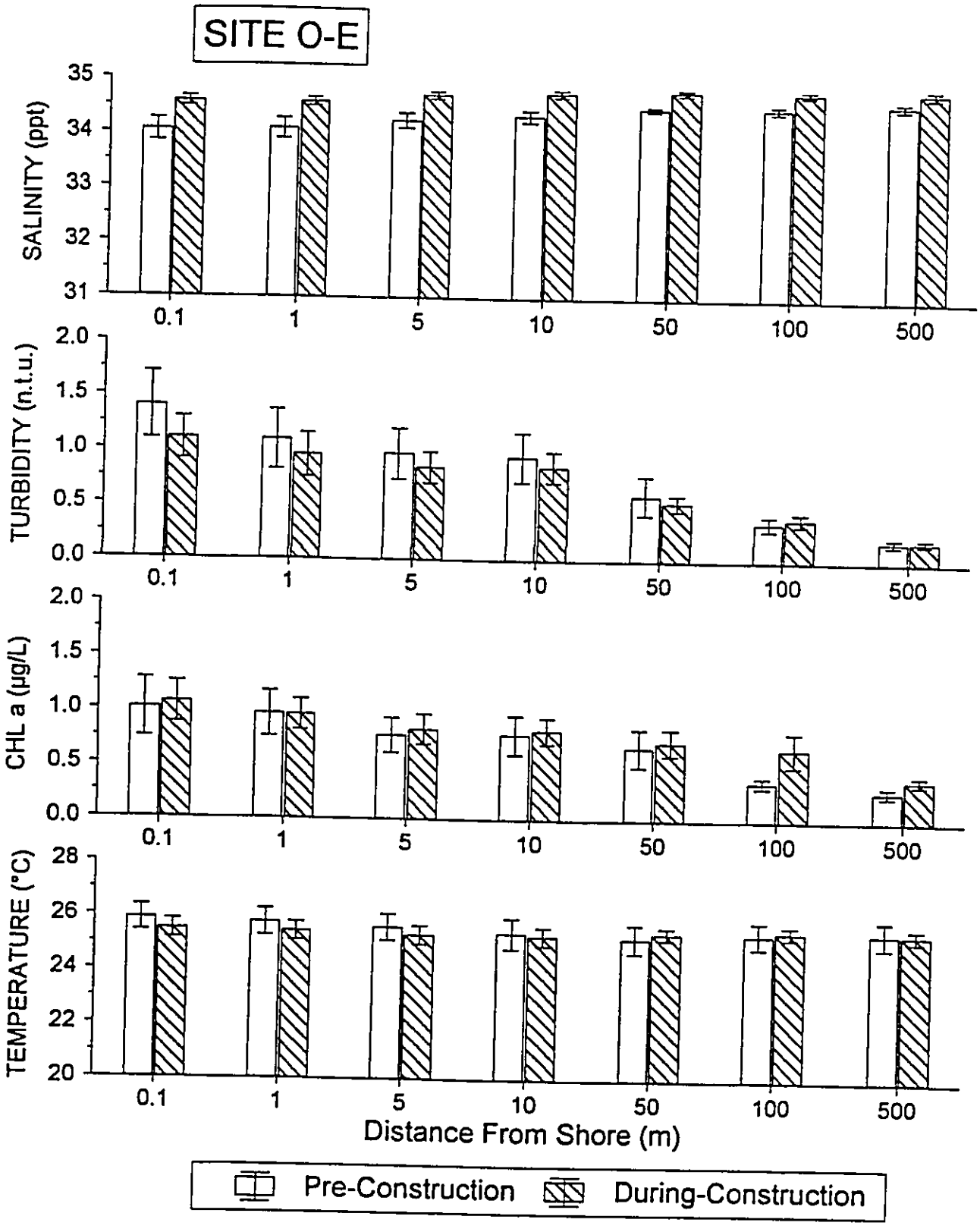


FIGURE 11. Bar plots comparing water chemistry constituents measured in surface water samples collected at the Ocean East (O-E) site offshore of Ocean Pointe during different phases of construction. Pre-construction data are means from surveys conducted between August 1992 and October 1997 (N=9). During-construction data are means from surveys conducted since December 1997 (N=13). Error bars represent standard error of the mean. For site location, see Figure 1.

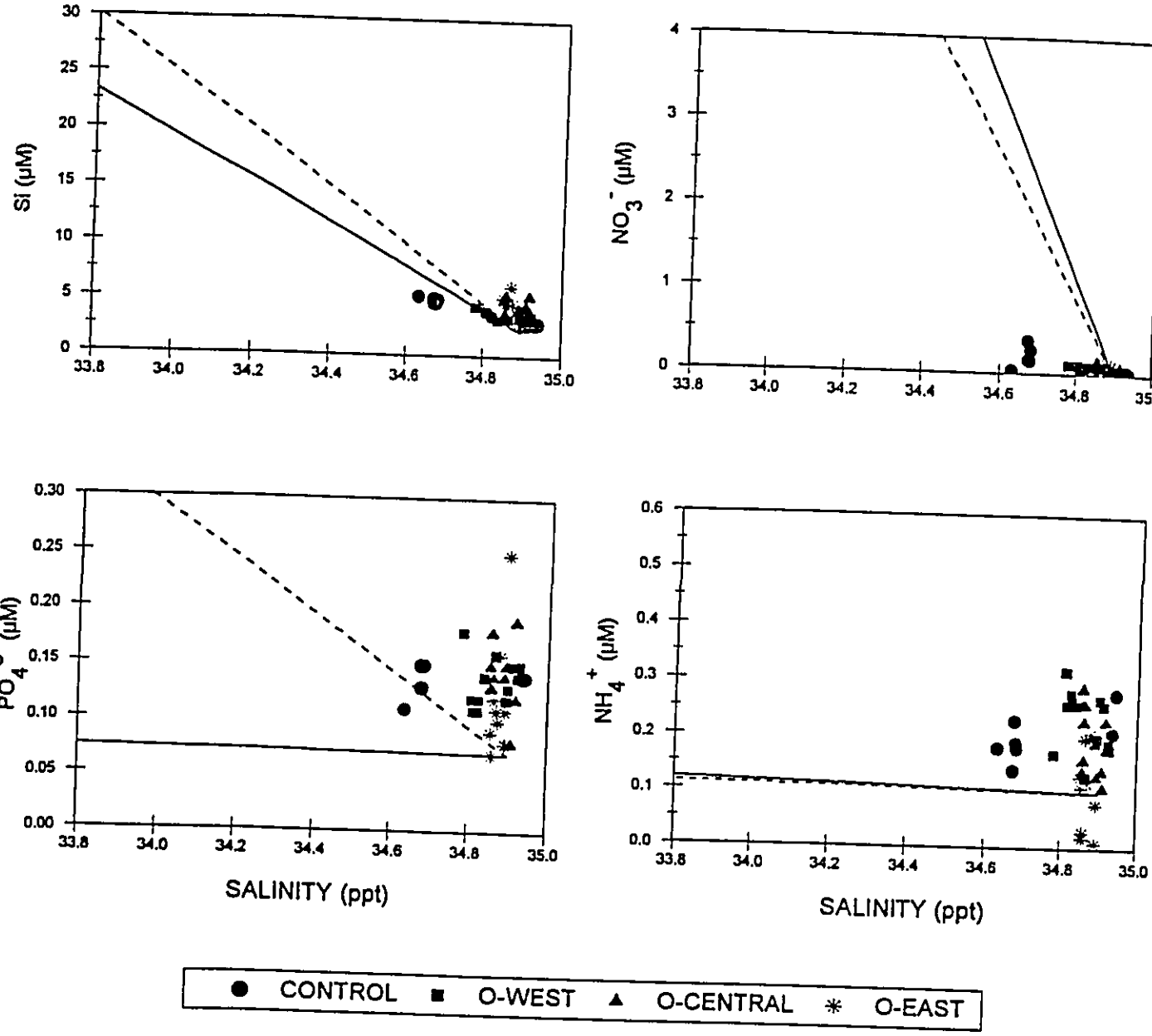


FIGURE 12. Mixing diagram showing concentration of dissolved nutrients from samples collected off Ocean Pointe in December 2000 as functions of salinity. Straight lines in each plot are conservative mixing lines constructed by connecting the concentrations in open ocean water with well water from a limestone aquifer (solid line) or with an upland basalt aquifer (dotted line). Well water was sampled December 29, 2000. For sampling site locations, see Figure 1.

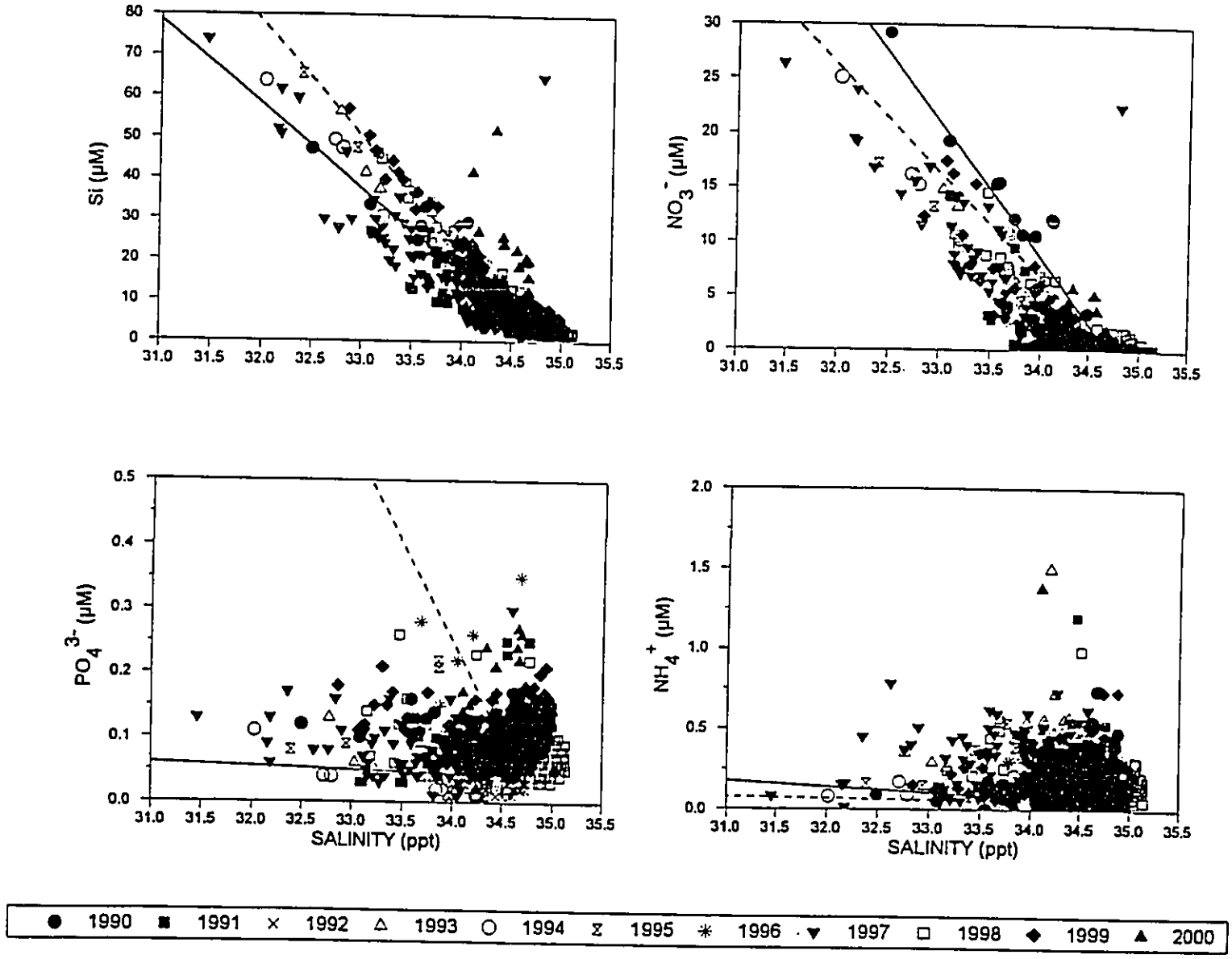


FIGURE 13. Mixing diagram showing concentration of dissolved nutrients from all samples collected off Ocean Pointe since June 1990 as functions of salinity. Straight lines in each plot are conservative mixing lines constructed by connecting the concentrations in open ocean water with well water from a limestone aquifer (solid line) or with an upland basalt aquifer (dotted line). Surveys were conducted twice per year in 1990-1992, once per year in 1993-1995, two times in 1996, and four times per year in 1997-2000.

EXHIBIT G

Federal EIS Excerpt
(Pages 4-18 through 4-20)

FINAL
Environmental Impact Statement
US Department of the Army
Permit Application

Proposed
Ewa Marina
Ewa Beach
Oahu, Hawaii

US Army Corps of Engineers
Honolulu District

April 1993

held there until most of the suspended material has settled out. Some of the water would evaporate from these basins during the settling period, while the remainder (which would contain small amounts of silt and finer-sized suspended particles) would flow back into the enclosed marina. A hydraulic dredge may be used to clean the portion of the marina bottom nearest the entrance before the last few feet of material are removed to open it to the ocean. This would minimize the amount of material that could become re-suspended when the last few feet of shoreline are removed. These measures would limit immediate post-construction impacts on turbidity levels.

(b) Constructing the entrance channel would require extensive in-water work. Unlike the marina itself, this work cannot be carried out behind a protective berm. Moreover, the high wave energy characteristic of the nearshore environment along the Ewa shoreline makes it impossible to effectively control the spread of material suspended in the water column as a result of such activities. Consequently, this dredging would temporarily increase turbidity levels in the vicinity of the construction work. The intermittent nature of construction work, together with the fact that it would be spread along a 3,000-foot-long channel would limit the effect that it has on any one location.

(c) Both of the action alternatives would require disposal of the 300,000 cubic yards of material that would be excavated during construction of the entrance channel. As described in Chapter 2, the Applicant proposes to dispose of this material at the US EPA designated South Oahu dredged material ocean disposal site. The material is not contaminated with pollutants and consists of newly dredged coralline material that does not require bioassay or bioaccumulation testing under joint Corps and EPA test procedures. At the disposal site, water turbidity would temporarily increase. Experience with disposal of similar material at this location shows that ambient water clarity would return to normal levels at the edges of the dump site within minutes. As stated in the Summary, page S-3, of this *Final EIS*, the reasonably foreseeable environmental impacts of ocean disposal were evaluated in the *EPA Final EIS for Hawaii Dredged Material Disposal Site Designation*, September 1980, and the Corps of Engineers *Final EIS, Harbor Maintenance Dredging in the State of Hawaii*, September 1975. Both Final EIS are adopted for the purposes of this permit EIS.

(3) Compliance With Water Quality Standards During Regular Operation.

(a) The extensive water quality monitoring program that is being conducted for the proposed project indicates that nearshore State Department of Health Water Quality Standards for NO_3 and Total Nitrogen are sometimes exceeded under existing conditions. None of the activities that are proposed as part of the Ewa Marina project would contribute significant amounts of these nutrients to the water column. Moreover, the widespread shift from agricultural to urban uses that is expected to occur across the Ewa plain would lead to lower fertilizer use and, presumably, decreased nutrient supplement to the groundwater. Other things being equal, this could lead to lower nutrient levels in nearshore waters. It cannot be determined at this time if this anticipated reduction would bring these waters into compliance with the existing State standards.

(b) Water quality within marinas is typically dominated by:

- Tidal exchange, where tidal currents moving into and out of the marina facilitate turbulent mixing that replaces "old" marina water with new water from the ocean.
- Wind-induced mixing and flushing, where the action of the wind blowing across the surface of the water produces turbulent mixing in the upper layer of the water body and produces a corresponding return flow of water in the lower layer of the marina.
- Gravitational (or density driven) circulation produced by the mixing of water with different densities (this occurs where there is a substantial discharge of fresh or brackish groundwater into the enclosed body of water).

Calculations show that wind-induced mixing is not a major factor for the Ewa Marina project (Mackie Martin & Associates Pty. Ltd., October 1991). Hence, analyses have focused on the flushing effects of the tides and the substantial groundwater inflow into the marina.

(c) OCEES International, Inc. (March 1990, July 1990, October 1990, November 1990, September 1991, and February 1992) used a two-layer computer model to estimate the exchange characteristics and expected water quality conditions associated with the Ewa Marina project. Both the Applicant's preferred alternative and the reduced-scale alternative were evaluated. The study predicted an average residence time of water leaving the marina of about 7 days for the preferred alternative. For the reduced scale alternative, average residence time would be generally longer because of the greater average depth relative to the tidal prism.

(d) The results of the water quality model analysis determined that chlorophyll-a concentration (a measure of phytoplankton productivity) would be the principal water quality parameter affected by the proposed marina. Higher nutrient concentrations in the marina would stimulate phytoplankton growth. Chlorophyll-a concentrations would be a function of the residence time in the marina, hence, slightly higher for the reduced-scale alternative. Chlorophyll-a and other water quality parameters within the marina would meet State standards for "wet" embayments but would require a dilution of about 24:1 before meeting the "wet" open coastal criteria for chlorophyll-a.

(e) The nearshore waters into which the marina would discharge are already turbid as a result of the high wave energy characteristic of the nearshore environment. The organisms there are adapted to survival under these conditions, and it is unlikely that the additional chlorophyll-a concentration would have a significant adverse effect on the existing system. By capturing the groundwater discharge that now occurs along a broad reach of shoreline and routing it to a single discharge point at the marina's mouth, the proposed project would result in lower salinity in the immediate vicinity of the marina entrance than presently occurs. The relative buoyancy of the freshest part of the discharge means that the surface layer of the ocean would be the most affected. This is the zone of greatest wave activity, and the turbulence would tend to dilute and disperse the discharge rapidly. Hence, the benthic biota would tend to be buffered from the effects of this change.

(f) Rainfall in upland portions of the Kaloi Gulch watershed would, under certain conditions, generate stormwater runoff into the marina through the major stormwater drainage channels that are planned to accommodate regional runoff. The volume and quality of water that would reach the marina under such conditions depend upon the stormwater retention measures and stormwater conveyance structure capacities that are incorporated into future upstream development. However, even with relatively stringent limitations on the peak flow volumes that future upstream development is allowed to pass on to downstream neighbors, there are times when runoff from upland areas would reach the marina.

(g) Sedimentation basins planned for the drainageways, as well as the use of broad, gently sloping drainage swales to convey runoff through the golf course would tend to allow suspended sediment to settle out before runoff reaches the marina. However, regardless of the effectiveness of these upstream controls, some sediment would flow into the marina during intense rainfall events. This would temporarily increase turbidity and sedimentation levels near the discharge points. The larger particles would settle out within the marina, allowing it to act as a regional sediment basin for this material. However, silt- and finer-sized particles can be expected to remain in suspension, producing elevated turbidity levels until the water has reached the ocean. The material that settles within the marina would gradually reduce water depths, necessitating periodic maintenance dredging. The dredged material from this maintenance activity would have to be disposed of in approved ocean disposal areas. The most likely ocean disposal location is at the EPA Designated South Oahu Dredged Materials Disposal Site.

(h) Groundwater flowing into the marina would convey nitrates and nitrites into the marina. In future years, typical urban pollutants (e.g., termicides, lawn fertilizers, street contaminants, etc.) would also enter the marina, either in the groundwater or as surface runoff. Within the marina itself, boats moored and operated there would constitute another source of potential contamination. Fuel and other petroleum products, floating trash and even human waste products may inadvertently be discharged into harbor waters. Given the limited flushing that would occur within the marina and the large area that is tributary to it, those effects may be unavoidable. The Applicant has indicated that it would impose restrictive covenants on the users of its property to minimize their contribution to the nutrient load, but the marina's location at the extreme downstream end of a large drainage basin means that a regional watershed management approach is needed to be most effective.

(i) If a DA permit for either of the construction alternatives is issued, plans detailing the dredging and excavation methods to be used and the erosion control practices to be incorporated in the contract documents would be prepared by the Applicant and submitted to the Corps for review and approval before construction is allowed to begin. Preliminary plans for these have already been submitted to the State Department of Health as part of the 401 Water Quality Certification process. The limited size of the first phase of construction would allow these measures to be refined in light of actual field experience before the main portion of the marina and entrance channel are constructed.

(j) The Applicant has prepared a preliminary plan for maintaining the waterways. These are currently being refined, and the Applicant would be required to demonstrate that adequate provisions for the long-term maintenance of the new facilities, including provisions for periodic maintenance dredging and the designation of the party to be financially responsible for this maintenance, have been made. Most of these controls would also be subject to the review and approval of the State Department of Health under the provisions of its 401 Certification for the proposed project.

(k) Pursuant to Section 401 of the Clean Water Act and the State of Hawaii Water Quality Regulations, the State Department of Health must certify that the project is consistent with existing State Water Quality standards before the Corps of Engineers can issue a DA permit. On January 2, 1992, the Department of Health published a "Public Notice" of its intent to issue a 401 certification for the proposed project and asked for public comments. Only one comment letter was received, and after determining that the issues raised in the letter had been adequately addressed in its review, the Department issued a Section 401 certification on July 24, 1992 (Appendix C).

(4) Permit Denial

(a) If the marina construction were not authorized, the Applicant would construct at least one drainageway and ocean outlet to accommodate regional drainage from the Kaloi Gulch drainage basin. Up to 10,000 cfs of sediment-laden freshwater could be discharged at the shoreline during peak flows. Upstream sediment basins and other pollution control techniques could reduce the magnitude of the peak flow and remove the coarsest material from the discharge during smaller, more frequent storm events, but silt and smaller-sized particles would remain in suspension. It is unlikely that these control mechanisms would be completely effective during large storms because the magnitude of the flow does not permit adequate residence time for settling before discharge into the ocean.

(b) Neither the Applicant nor the Corps has modeled the dispersion of the discharge from an ocean shoreline storm drainage outlet. Over the long-term, the relatively high wave energy that characterizes the nearshore environment fronting the Applicant's property is likely to insure that sediment deposits do not persist in the vicinity of the storm drainage outlet. Short-term water quality

EXHIBIT H

Letter from Krock Dated January 15, 2001
Regarding Water Quality Conditions Of
Reduced Marina

OCEES International, Inc.
Ocean Engineering & Energy Systems

125 Maunalanikai Place, Honolulu, Hawaii 96816, U.S.A.
Phone/Fax: (808) 732-7853
E-mail: krock@aloha.net

January 15, 2001

Raymond J. Kanna
Project Manager
HASEKO
820 Mililani Street, Suite 820
Honolulu, Hawai'i 96816

Subject: Ewa Marina Water Quality

Dear Mr. Kanna:

This letter is in response to your request that I make a preliminary evaluation of the expected water quality in the newly proposed Ewa Marina.

OCEES International conducted predictive water quality studies in 1990 and 1991 on previously proposed configurations of Ewa Marina. Those studies concluded that the "wet" water quality criteria for embayments would be met within the marina and that the "wet" open coastal waters criteria would be met with a dilution of about 14 to 1. The concentration of chlorophyll-a was determined to be the critical parameter and total phosphorus (TP) was found to be the limiting nutrient.

The proposed smaller Ewa Marina configuration would result in several changes – some positive and some negative with respect to water quality. There would be less fresh water induced exchange and a smaller tidal prism. There would also be a smaller total volume and less surface drainage and consequently less input of TP. The probable net effect of these positive and negative changes on the chlorophyll –a concentration is not likely to be significant. To be more qualitative would require a detailed run of the exchange model with appropriate growth kinetics for the new marina configuration.

In sum, the newly proposed smaller Ewa Marina will likely to have similar water quality conditions to that of the previous larger configuration.

Sincerely,

Hans Krock Ph.D., P.E.
President

EXHIBIT I

Sea Turtle Study, December 2000

Assessment of Sea Turtle Populations
In the Vicinity of the
Proposed Ocean Pointe Marina, Oahu, Hawaii

Cumulative Report No. 27

Prepared by:
Marine Research Consultants
4467 Sierra Dr.
Honolulu, HI 96816

December 2000

INTRODUCTION

Background

The site for the proposed Ocean Pointe project is approximately 1,100 acres of land situated between Barbers Point Naval Air Station and the Ewa Beach community on Oahu's southern shore. The proposed project presently includes a 120-acre marina that will eventually be home for approximately 1,400 boats. The marina will be excavated from fast land behind the shoreline and will be connected to the open ocean by an entrance channel that will cross a broad fringing reef. The planned entrance channel is approximately 125 meters wide and 900 meters long; it will be about 6 meters deep, shoaling to about 4 meters after it crosses the existing shoreline. Preliminary calculations indicate that construction of the proposed entrance channel will involve the removal of approximately 300,000 cubic meters of

bottom material and the alteration of approximately 115,000 square meters of habitat.

An application for a Department of the Army permit was filed with the Honolulu District of the U.S. Army Corps of Engineers on October 20, 1989, and the Corps issued a Public Notice describing the application on November 30, 1989. Responses to the Public Notice indicated a concern over possible effects on sea turtles, particularly the green sea turtle (*Chelonia mydas*). In order to evaluate these potential effects, the applicant, Haseko (Hawaii), Inc., contracted with Marine Research Consultants to develop and implement an ongoing, multi-year turtle monitoring program. Based in part on the results of the monitoring program, the biological opinion prepared by the National Marine Fisheries Service pursuant to Section 7 (b) of the Endangered Species Act indicates that the marina is not likely to endanger the population of green sea turtles. Accordingly, Haseko was granted a no jeopardy decision on the Section 7 application. Nevertheless, the Section 401 Water Quality Certification (WQC) issued by the State Department of Health requires monitoring of turtle abundance offshore of the proposed site. This report describes the objectives of the monitoring program, the methodology that is being used, and the findings through the 27th survey conducted in December 2000.

Overview of the Physical Environment

The bottom topography off the Ocean Pointe Marina site is essentially homogeneous at depths of 10 meters and greater. The bottom consists of a relatively flat limestone platform with little structural relief. At depths of less than 8 meters, there is very little coral cover, with most of the bottom consisting of exposed limestone substrate and patches of sand. At depths of between 8 and 10 meters, areas of hard bottom typically have a moderate cover of the coral *Pocillopora meandrina*. Shallow, sand-filled sand surge channels are fairly common features of this area. At depths between 10 and 15 meters, heads of *Porites lobata* scattered over the flat bottom provide the preponderance of vertical relief. Most of these colonies are fairly bioeroded and at least partially overgrown by calcareous algae. At depths greater than about 15 meters, sporadic small ledges and occasional patches of coral (mostly *Porites compressa*), occur on a bottom composed of limestone flats and sand plains. The ledge that occurs in many areas off Oahu is not apparent in the Ewa region.

There is one atypical region in the vicinity of the planned marina. An area of substantial vertical relief is located in water depths of about 10 meters directly offshore from the western boundary of the Ocean Pointe property. This area is approximately 500 meters by 100 meters in extent and is characterized by a longitudinal ridge system that rises 1 to 2 meters above the otherwise flat limestone and sand bottom. The long axes of the ridges are aligned parallel to the shoreline and depth contours, and they are undercut, probably by wave action, to form ledges and crevices between 0.25 and 1 m deep. In some areas, the undercut crevices have been smoothed by repeated contact with turtle shells. Some of the turtle-excavated pits measure up to 1 m in height, and 2 m in width, suggesting long-term usage as turtle resting sites.

Program Objectives

The turtle monitoring program that was developed for the Ocean Pointe project has the following objectives:

1) collect data concerning the number of turtles present during daylight hours in nearshore waters between White Plains Beach (formerly Officers Beach) at the Barbers Point Naval Air Station and the eastern limits of the Ocean Pointe site;

2) determine characteristics of the turtles that are sighted (species, size, sex, distinguishing marks, and behavior);

3) correlate sightings with environmental factors that might explain their presence and behavior; and

4) reach preliminary conclusions about the extent to which the turtles sighted might be affected by the proposed Ocean Pointe project.

Methodology

All turtle surveys are conducted by a qualified diver/biologists. In order to provide efficient coverage of the large area that is being surveyed, the biologists work from a steerable sled that is towed behind a small, outboard motor-powered boat. The use of a steerable tow sled allows large areas to be covered much more efficiently than if divers were forced to work in a free-swimming mode or to make "bounce" dives from the dive boat.

The survey pattern that is being used consists of a gridded pattern, with the transects running parallel to the shoreline. The exact routing varies depending upon surf conditions, and is described in the survey results portion of each report. When wave conditions permit, the transects cover the entire area between the 3 and 20 meter depth contours. In calm conditions, the survey methodology provides for a transect length of approximately 2.9 kilometers (1.8 miles) and coverage of approximately 230 hectares (575 acres). As surf size increases, it is necessary to shift the transects farther offshore.

In addition to the extensive investigations, intensive investigations of the area of substantial limestone relief are conducted by divers swimming the entire area and examining all undercuts and ledges for resting turtles. With all methods of investigation, upon sighting a turtle the diver attempts to observe the following:

- its species (either green sea turtle or hawksbill turtle);

- its approximate carapace length (an indicator of size and age);

- the turtle's sex;

- the presence of any distinguishing marks (such as tags, identification numbers, tumors or coloration) that would facilitate re-identification of the animal on subsequent surveys; and;

- the activity that the turtle is engaged in at the time of the sighting.

For the initial ten monitoring reports, cumulative data for all surveys was included. Beginning with the eleventh survey, the reporting format has been modified in that only data from the most recent survey is presented in detail, along with a table summarizing the cumulative program. Overall trends that continue to evolve from the long-term results are discussed in the last section of each monitoring report.

SURVEY 27 -- December 24, 2000

Conditions

The 27th survey was conducted during a period of slack winds with a small south swell. Underwater visibility was considered low to moderate, estimated at 25-30 feet. During the survey there was little current. The survey included the entire protocol of extensive tows of the area and intensive swimming surveys of the areas where turtles have been documented to congregate (see Figure 1). Following the 14th survey in November 1992, which was the was the first survey conducted since Hurricane Iniki struck on September 11, 1992, it was discovered that the sunken barge had been moved to an unknown location. However, a smaller portion of the barge was discovered closer to the shoreline during the December 1993 survey, and is denoted as Site 2 on Figure 1.

Results

It is estimated that nine different turtles were seen during the survey on December 24, 2000. Five turtles were observed during the swimming survey of Site 1 (Figure 1), and four turtles were observed on the barge site (Site 2) (Figure 1). No turtles were observed during the tow surveys. All underwater sightings appeared to be of green sea turtles (*Chelonia mydas*). The overall number of turtles was considered low in relation to past surveys (see Table 1).

As indicated by the following tabulation, all turtles observed were at least 50 cm in carapace length. All turtles were seen swimming slowly along the bottom or resting in depressions on the bottom or in caves. In the past, when surveys were conducted during periods of calm surface conditions, numerous turtles were observed resting on the sea surface. During the present survey, several turtles were observed on the surface in the vicinity of Site 1. During the survey, only one turtle was sexually identifiable as a male, with the remainder identified as females. These results are consistent with the previous surveys in 1992-1999 when nearly all turtles observed were large in size, and either females or sexually non-identifiable.

Of the nine turtles observed during the December 2000 survey, one was noted to have a small visible tumor on her right eye. This result is also consistent with past surveys; few of the large individuals have been observed to have tumors. No tags or painted identification numbers were observed. During a previous survey in 1992, one turtle was observed to have a painted identification number (U-382) on her carapace. It appeared that this turtle was not present in the Ewa area during surveys conducted over the past several years.

Observations of Turtles, Survey 27, December 24, 2000

Site 1: "Turtle House"

Coordinates: 21°17.478'N, 158°02.447'W

No.	Sex	Length (cm)	Behavior	Comments
1	♀	80	Swimming over reef	
2	♀	80	Resting in hole	
3	♂	70	Resting in hole	
4	♂	65	Swimming over reef	
5	♀	55	Resting in hole	

Site 2: "Sunken Barge"

Coordinates: 21°17.452'N, 158°02.544'W

6	♀	70	Resting on bottom next to barge
7	♀	80	Resting on bottom next to barge
8	♀	80	Swimming over reef
9	♀	70	Swimming over reef

CUMULATIVE FINDINGS AND CONCLUSIONS

Results of the December 2000 survey were somewhat inconsistent with surveys of the previous ten years. The area of marked vertical bottom relief off the western boundary of the property and the sunken barge remnants remain very active turtle aggregation sites. In addition, after extensive and repetitive towing over the entire area fronting the marina site, these areas remain the only identified regions where turtles aggregate. The region of extensive vertical relief is approximately 1 kilometer west of the proposed entrance channel to the marina. The extensive excavation of the soft limestone substratum in the ridge system suggests that turtles have used the area for millennia. The sunken barge remnants are located approximately 1 kilometer east of the proposed entrance channel.

The behavior of turtles at the aggregation sites, however, appeared to be somewhat different than in the past. Turtles as a whole appeared to be much more skittish on the approach of divers than in the past. In addition, a larger percentage of the excavated resting caves were empty during the present survey when compared to the past surveys. The skittish behavior in the area of high turtle concentration suggests that some hunting activity may be taking place. Observations of turtle abundance and behavior will be closely monitored in future surveys.

Table 1 shows a summary of results of turtle observations from November 1990 to December 2000. Survey results to date show two distinct levels of abundance. The results of most of the surveys have been similar, with green sea turtles present in relatively large aggregations (≈12-22 individuals) in the region having the vertical relief

sufficient for providing shelter space for protection during daylight resting behavior. Repetitive sightings of similar sized individuals also suggested that the same turtles had been inhabiting the area during the course of the survey program.

Results of surveys 7 through 9 (August - October 1991), 12 (June 1992) and 18 (March 1995), and the survey in December 1999 and December 2000 were similar to each other in that only 6-11 turtles were observed in the area. The reduction of underwater sightings in August 1991 was attributed in part to decreased visibility owing to turbid conditions associated with wave turbulence. During the other surveys, however, visibility was not substantially limited by resuspended material, and the number of sightings was consistently low. As mentioned above, while the number of turtles observed in the area was low in December 2000, the behavior of turtles was also somewhat different in that the large turtles tended to avoid divers to a greater degree than in the past.

The pattern of somewhat lower counts in the summer may represent a seasonal pattern of higher usage of the Ewa area in the winter and spring months, and movement to other regions during the summer. Reduced abundance in the summer off Ewa may represent seasonal migration to breeding grounds in the Northwest Hawaiian Islands (NWHI). The sighting in September 1992 of a tagged turtle that was recorded as being in the nesting area of French Frigate Shoals only about one month earlier verifies that there is some exchange between the Ewa area and breeding grounds on a relatively short time frame. However, the count of 14 and 17 turtles in surveys in July 1998 and 1999 (relatively high in summer), 11 in December 1999 and 9 in December 2000 (relatively low in winter) does not appear to follow the trend, suggesting that other factors may also be responsible for seasonal variability.

Characteristics of the individuals observed in all surveys to date continues to be similar. Most have been mature individuals with carapace lengths greater than about 50 cm; only a few sub- adults or juveniles have been observed (Table 1). Only several of the turtles sighted to date have exhibited extensive or large tumors on their heads or appendages. Small tumors have been noted on only a small number of individuals. Another attribute that is evident in the surveys is the sex distribution of turtles. In all

but two surveys, there have been more females than males observed. During the course of the 27 surveys, only 59 males have been encountered out of a total count of 338 turtles (17% males).

The similarity in turtle counts and population attributes (most individuals between 50 and 100 cm in carapace length, and predominantly females) indicates relative constancy of the population during the tenth year of the monitoring effort. Such consistency suggests that the results of the surveys are providing a good representation of the number of turtles inhabiting the area.

Another consistent finding from all of the surveys is that few turtles have been sighted in the areas characterized by the kind of flat "hardpan" bottom characteristic of the proposed channel alignment. Individuals observed in this region have been actively swimming through the water column, and did not appear to be resting or feeding. The hardpan bottom type does not provide vertical relief suitable for daytime resting behaviors that have been observed in the ridge and crevice area off the Barbers Point Naval Air Station. The next survey will be conducted in the first calendar half of 2001.

TABLE 1 Results of turtle surveys conducted off of proposed site of the Ocean Pointe Project.

Survey	Date	Total Turtles	Male	Female	Sex Unknown	>50 cm	<50 cm
1	9/22/90	0					
2	11/25/90	13	3	9	1	13	0
3	1/6/91	13	3	5	5	13	0
4	5/5/91	12	2	6	4	11	1
5	6/17/91	12	3	7	2	11	1
6	7/7/91	22	6	12	4	20	2
7	8/17/91	10	3	2	5	10	0
8	9/21/91	6	2	1	3	5	1
9	10/14/91	6	1	4	1	5	1
10	1/24/92	14	4	10	0	14	0
11	4/18/92	12	2	9	1	11	1
12	6/27/92	6	4	2	0	6	0
13	9/6/92	12	0	12	0	12	0
14	11/8/92	17	2	9	6	16	1
15	12/23/93	18	3	9	6	17	1
16	4/2/94	14	2	7	5	12	2
17	10/30/94	13	2	9	2	11	2
18	3/26/95	10	1	7	2	9	1
19	10/28/96	14	2	9	3	13	1
20	5/3/96	17	2	9	6	16	2
21	10/6/96	16	3	11	2	14	2
22	8/10/97	14	1	7	6	10	4
23	7/26/98	14	2	10	2	12	2
24	7/5/99	17	0	17	0	15	2
25	12/19/99	11	1	10	0	10	1
26	9/9/00	16	4	12	0	13	3
27	12/24/00	9	1	8	0	9	0
TOTAL		338	59	213	66	308	31

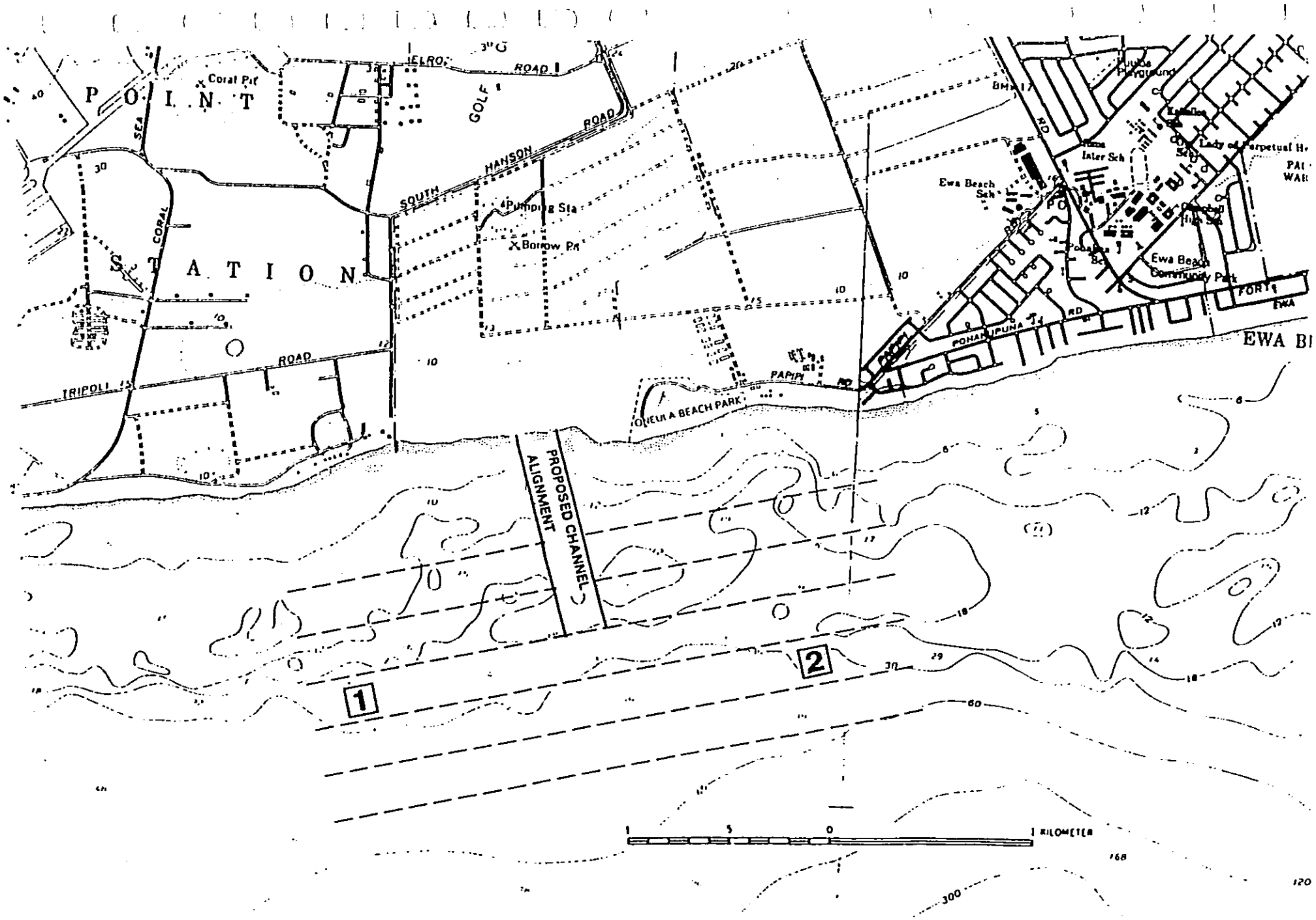


FIGURE 1. Map showing location of proposed Ewa Marina Channel alignment off of Ewa Beach. Also shown (dashed lines) are approximate tracks of tows conducted to estimate abundance of turtles off the Ewa Marina site. Site 1 is location of area of substantial vertical relief (Turtle House) where majority of turtles were sighted. Site 2 is location of sunken barge.

EXHIBIT J

BLNR and CWRM Findings of Fact, Conclusions of Law and Decision and Order Excerpts Regarding Cultural Practices

BOARD OF LAND AND NATURAL RESOURCES

STATE OF HAWAII

In the Matter of Conservation District Use Application for HASEKO (Ewa), Inc.) to Construct a Marina Entrance Channel Using State owned Submerged Lands at Honouliuli, Ewa, Oahu	DLNR File No.: OA-2670

FIRST AMENDED FINDINGS OF FACT, CONCLUSIONS OF LAW DECISION AND ORDER

APRIL 2000

APPENDIX A

9. The proposed project does not abridge or deny traditional and customary rights of native Hawaiians.

139. Although there are Hawaiians and others who fish and gather along the subject shoreline area (Tr. 595, 596, 619; Written testimony of Howell; Rebuttal Witness Statement of Kahalewai, p. 3; Rebuttal Witness Statement of Serrao, p. 5), the weight of the evidence presented supports that the location of the proposed entrance channel is not an especially good spot for either fishing, gathering, or other traditional and customary activities by Hawaiians. (Rebuttal Witness Statement of Lee, p. 8; Tr. p. 501, 616, and 617)

140. There are no fishing villages, burial grounds, or other spiritual sites in the area where the proposed channel is to be constructed. (Tr. p. 478, 479, 616, 622; Rebuttal Witness Statement of Kahalewai p. 4; Rebuttal Witness Statement of Serrao, p. 6; Eaton, p. 6; CDUA p. 12)

141. Construction of the proposed entrance channel will permanently remove 400 feet of the existing shoreline. (CDUA; A-2, p. 4-26)

142. The proposed channel and artificial reef may increase the abundance and diversity of fish species, possibly improving fish catch. (Ex. A-2, p. 4-28)

143. The increased accessibility to the shoreline with expected higher levels of shoreline fishing, diving, and crabbing activity, however, could result in over harvesting of the fishery. (Ex. A-2, p. 4-28)

144. Limu: The limu grows mainly in the intertidal region (i.e. the area between the high and low tide on the shallow bench). (Tr. p. 501; Ex. A-1, Appendix H) Channel construction would temporarily interrupt limu gathering, but limu gathering on either side of the entrance channel would not be affected. (Ex. A-2, p. 4-27)

Algae would be destroyed by the dredging activities. Damage may also occur in the immediate vicinity of the dredging activity. (Ex. A-2, p. 4-22)

The resulting sandy bottom likely to develop within the channel basin is less suitable for marine algae than the existing hard substrate. The channel margins, however, would provide a hard substrate for algal attachment and growth, and the relief, some shelter. However, overall, algal growth is likely to be reduced slightly. (Ex A-2, p. 4-22)

Increased access could result in overharvesting of limu. (Ex A-2, pp. 4-23 & 4-27)

145. The board finds that the conditions imposed by other agency permits provides significant public access and mitigative environmental conditions that will preserve and enhance traditional and customary practices of native Hawaiians. These conditions are hereby appended to the DECISION AND ORDER and are enumerated below:

a. Protection and Enhancement of Public Access for Traditional and Customary Practices by native Hawaiians:

(1) Conditions C. D. E. and F of the City and County of Honolulu, Special Management Area Use Permit and Shoreline Setback Variance for Ewa Marina

(2) Conditions 1. 7(a. b. g). 8. and 25. of the Unilateral Agreement for a Zone Change by Haseko for the Ewa Marina Project.

b. Preservation of Cultural and Archaeological Resources and Mitigation of Project Impacts to the Environment:

(1) Conditions 2. 21. 23. and 26 of the Unilateral Agreement for a Zone Change by Haseko for the Ewa Marina Project.

(2) Conditions 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. and 15. imposed under the Department of the Army Permit No. PODCO 2117.

146. Article XII. Section 7 of the Hawaii State Constitution provides for protection on native Hawaiian traditional and customary gathering rights:

> The State reaffirms and shall protect all rights customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by ahupua'a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate.

147. In Public Access Shoreline Hawai'i v. Hawaii County Planning Commission, 79 Hawai'i 425, 903 P.2d 1246 (1995), the Hawaii Supreme Court stated:

> The State's power to regulate the exercise of customary and traditionally exercised Hawaiian rights...necessarily allowed the State to permit

development that interferes with such rights in certain circumstances...Nevertheless, the State is obligated to protect the reasonable exercise of customary and traditionally exercised rights of Hawaiians to the extent feasible.

Id. at 450 n. 43, 903 P.2d at 1271 n.43.

148. In making that determination, the Hawaii Supreme Court has stated that governmental agencies must address three questions: "(1) whether traditional and customary native Hawaiian rights are exercised in the project area; (2) of the extent to which, if such rights exist, they will be affected by the proposed action; and (3) of the feasible action, if any, that should be undertaken by the [agency] to protect these rights, if they are found to exist." Trustees of the Office of Hawaiian Affairs et.al v. Board of Land and Natural Resources et.al., Supreme Court No. 19774, memo.op., filed March 12, 1998.[1]

149. Surveys conducted for Haseko found at least 63 different species of fish living in the area in question, including "food fish" such as ulua, papio, taape, grouper, palani, and kala that are sought by both commercial and recreational fishermen. (Exhibit A-1, Appendix H; Testimony of Philip S. Lobel, at 326-29; Testimony of Steven Dollar, at 510-13) [OHA proposed FOF 38.]

150. Further, according to the Department of Land and Natural Resources' Division of Aquatic Resources, stocks of mullet, parrot fishes, lobster and octopus migrate through and forage in this area. (Exhibit Board-2) [OHA proposed FOF 39.]

151. As a result, and as Haseko acknowledges in the Environmental Impact Statement prepared for the project, the area in question supports substantial local fishing. (Exhibit A-1 at III-22, IV-15, Appendix P: Testimony of Earl Matsukawa, at 547-53.) [OHA proposed FOF 40.]

152. Residents of Ewa Beach and surrounding area, including both native Hawaiians and non-Hawaiians, fish in the area along the shoreline where Haseko plans to dredge its channel, and also dive in the area of the proposed channel, where fishing and lobster gathering occur. (Testimony of Thomas Palmeira, at 571-74; Testimony of Anna Marie Kahunahana-Castro-Howell, at 595-96; Testimony of Clifford Olivera, at 587-84;

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[1] This memorandum opinion may be cited in this case pursuant to Rule 35(c), Hawaii Rules of Appellate Procedure.

Testimony of Tim Tucker, at 216-17 (acknowledging that on clam days people come from all over central Oahu to fish and dive in this area). [OHA proposed FOF 41, as amended.]

153. The area in which Haseko proposes to build its entrance channel is also a rich source of the marine algae, or limu, for which Ewa is renown. (Exhibits B-6, B-7.) [OHA proposed FOF 42, as amended.]

154. This limu is gathered, for both personal consumption and commercial use, by residents of the Ewa area, including both native Hawaiians and non-Hawaiians. (Testimony of Clifford Olivera, at 584; Testimony of Anthony Tepedino, at 489; Witness Statement of Thomas Palmeira.) [OHA proposed FOF 43.]

155. The native Hawaiians who fish and gather limu and shellfish along the shoreline fronting the proposed Ewa Marina development, and in the waters where Haseko proposes to dredge its entrance channel, are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778 and include residents of the ahupua'a of Honouliuli. (Testimony of Thomas Palmeira, at 571: Testimony of Anna Marie Kahunahana-Castro-Howell, at 598; Witness Statement of Anna Marie Kahunahana-Castro-Howell, at 1-3.) [OHA proposed FOF 44.]

156. Anna Marie Kahunahana-Castro-Howell ("Howell") resides at 91-946 Komana Street, Ewa Beach, and is a resident of the ahupua'a of Honouliuli and a member of Save Ewa Beach Ohana. Witness Statement of Anna Marie Kahunahana-Castro-Howell ("Howell Statement"), at 1. [SEBO proposed FOF 7.]

157. Howell is of greater that 50% Native Hawaiian ancestry. Howell Statement, at 1, 3. [SEBO proposed FOF 8.]

158. Fishing and gathering of shellfish and limu are traditional and customary practices of native Hawaiians, including Howell and members of her family, along the shoreline fronting the proposed Ewa Marina development, and in the waters where Haseko proposes to dredge its entrance channel. (Testimony of Thomas Palmeira, at 572-74; Testimony of Mary Kaipo Malama Serrao, at 619-20; Rebuttal Witness Statement of Mary Kaipo Malama Serrao at 5; Rebuttal Witness Statement of Ethelreda Kialuna Robello Sylva Kahalewai, at 3.) [OHA proposed FOF 45.]

159. Based on the evidence presented, the Applicant has demonstrated by a preponderance of the evidence that any excavation of the entrance

channel will result in at best a temporary diminishment of access to the dredged area. The proposed use will result in a temporary diminishment of fish and limu in the nearshore area where the entrance channel will be located.

160. Based on the evidence presented, the board finds a temporary diminishment of access and temporary reduction of the fish and a non-significant reduction of limu to the dredged and submerged land area where the entrance channel will be constructed is justified because the proposed use will enhance fishing and limu gathering by improving access to the ocean along the present rocky shoreline. The proposed project will make the area more accessible to those who may be unable to currently traverse this area, and thereby improving access to exercise traditional and customary rights.

161. As part of the community benefits package, the Applicant is required to donate approximately 10 acres of beachfront property as an addition to the Oneula park. This addition will improve public access to the shoreline. Additionally, the boat launching ramp will improve access to the ocean by boat. This will enhance the opportunities for fishing in the area. On balance, the board finds that the project will enhance rather than diminish or abridge the exercise of traditional and customary rights of native Hawaiians.

162. Therefore, based on the evidence presented, Applicant's applied-for uses, as amended and set forth in this Findings of Fact, Conclusions of Law, Decision and Order, do not abridge or deny and if fact, may enhance, traditional or customary Hawaiian rights, customs, practices, the state laws or the Constitution of the State of Hawaii.

10. Imposition of permit conditions necessary to minimize or avoid adverse environmental impacts of the Project relative to the matters considered herein and to ensure compliance with mitigation procedures identified in environmental impact disclosure documents.

163. The Board finds that the conditions set forth in Section IV will minimize or avoid adverse environmental impacts associated with the development of the proposed project and to ensure compliance with mitigation procedures identified in environmental impact disclosure documents.

D. Rulings on Parties' Proposed Findings of Fact, Conclusions of Law, Decision and Order

1. Rulings of the Parties Proposed Findings of Fact, Conclusions of Law, Decision and Order filed by the parties on October 28, 1994. The Board has reviewed and taken into account all of the parties proposed findings of fact, conclusions of law and decision and order and makes the following rulings on the parties' proposed findings of fact, conclusions of law, decision and order:

   a. Applicant HASEKO's Findings of Fact paragraph nos. 1-61, Conclusions of Law paragraph nos. 1-7 and draft decision and order are rejected for the reasons provided below.

   b. Contestant OHA's Findings of Fact paragraph nos. 1-69, Conclusions of Law paragraph nos. 1-6 and draft decision and order are rejected for the reasons provided below.

      On remand, the Board accepted, in whole or in part, OHA's Findings of Fact paragraph Nos. 38-45.

   c. Contestant SEBO's Findings of Fact paragraph nos. 1-35, Conclusions of Law paragraph nos. 1-24 and draft decision and order and alternative conditions nos. 1-2 are rejected for the reasons provided below. On remand, the Board accepted, in whole or in part, SEBO's Findings or Fact paragraph Nos. 7-8, and Conclusion of Law No. 7.

The Board rejects all proposed findings of fact, conclusions of law, and decisions and order for one or more of the following reasons:

1. They are repetitious or similar to the Board's own findings of fact or conclusions of law or decision and order, and/or

2. They are not supported by the reliable and/or probative evidence, and/or

3. They are in whole or in part not supported by and/or are contrary to the facts or law, and/or

4. They are immaterial, superfluous and/or irrelevant to the material facts, issues and/or law of this case.

I. With the conditions imposed by the Board of Land and Natural Resources in its Decision and Order herein, the entrance channel at Honouliuli Ewa, Oahu, is in compliance with the provisions of Chapters 183 and 205, Hawaii Revised Statutes, and Title 13, Chapter 2, Hawaii Administrative Rules.

J. Any finding of fact herein contained in this decision and order which is determined to be more properly deemed a conclusion of law, is hereby incorporated in this part and made a conclusion of law herein.

K. Because fishing is a traditional and customary practice of native Hawaiians and others along the shoreline adjoining Haseko's proposed Ewa Marina Project and in the waters where Haseko proposes to build the entrance channel to its proposed marina, Native Hawaiians, including Howell and her family, who engage in such activities are exercising rights "established by Hawaiian usage." § 1-1, H.R.S., see Pele Defense v. Paty, 73 Haw. 578 (1992), and protected under Haw. Const., Art XII, § 7. [SEBO proposed COL 7.]

L. The BLNR has reviewed the evidence presented at the hearing pertaining to the issue of traditional and customary native Hawaiian rights exercised in the project area including the environmental effects the project will have on those rights. The Board finds that those rights have been sufficiently protected with the issuance of this conditional approval.

IV. DECISION AND ORDER

Based on the Findings of Fact and Conclusions of Law stated herein, IT IS THE DECISION of the Board of Land and Natural Resources to conditionally grant the applicant a Conservation District Use Permit for a marina entrance channel at Honouliuli, Ewa, Oahu, subject to the following conditions:

STANDARD CONDITIONS

1. The applicant shall comply with all applicable statutes, ordinances, rules and regulations of the Federal, State and County governments and applicable parts of Section 13-2-21, Hawaii Administrative Rules, as amended;

2. The applicant, its successors and assigns, shall indemnify and hold the State of Hawaii harmless from and against any loss, liability, claim or demand for property damage, personal injury and death arising out of any act or omission of the applicant, its successors, assigns, officers,

F. Prior to connecting the marina waterways to the ocean, the applicant shall remove the collected silt and sediment within the marina;

G. The applicant shall implement erosion control measures during construction, such as silt curtains;

H. If applicable, the applicant shall construct the causeway or trestle within the channel boundaries;

I. Disposal of excavated material shall be in compliance with the U.S. Corps of Engineers Department of the Army Permit;

15. PUBLIC ACCESS/FACILITIES RELATED

A. Prior to breaching the shoreline to connect the marina with the ocean, the applicant shall construct piers that provide public fishing access along the banks of the marina. The piers shall be designed to accommodate the physically challenged;

B. Should the applicant convey to the City and County of Honolulu (City) the approximate nine acres of beachfront land adjacent to Oneula Beach Park identified in the City's Ordinance 93-94 ("Unilateral Agreement and Declaration for Conditional Zoning") that prior to breaching the shoreline to connect the marina with the ocean, the applicant shall implement the "Oneula Improvements;"

C. To protect the traditional and customary rights exercised in the project area, during construction of the marina, access to the shoreline fronting the project area must be permitted for the reasonable exercise of traditional and customary practices of native Hawaiians to the extent feasible and safe;

D. After completion of the project, the applicant will provide, in addition to any other access for traditional and customary practices that may be established in any subsequent or future proceeding or by agreement, public access for the purpose of permitting the reasonable exercise of traditional and customary practices of native Hawaiians, to include the following:

1. Dedication of approximately nine acres of beachfront land adjacent to Oneula Beach Park identified in the City's Ordinance 93-94 ("Unilateral Agreement and Declaration

for Conditional Zoning"), or alternatively, dedication to a perpendicular access to the shoreline which shall be no closer than 600 feet from the eastern boundary of Oneula Beach Park;

2. Dedication of the boat launching complex to the State of Hawaii as set forth in paragraph 15.F., below; and

3. Shoreline access on either side of the marina entrance channel as set forth in paragraph 15.G. below.

E. The applicant shall make at least fifty percent of the boat slips available to the general public at reasonable market rates;

F. The boat launching ramp complex shall be completed in a timely manner following breakout to the ocean. The applicant shall dedicate the launching ramp complex to the State of Hawaii. The launching ramp complex shall be operated and maintained by the State or others as a State launching facility. Subject to applicable laws, the State may at any time enter into a joint venture or operating contract with the Applicant for the operation and maintenance of the boat launching ramp complex as a State launching facility. In addition to the seven launching ramps, the launching ramp complex shall include: about 150 associated trailer parking, public parking, boat wash down areas, restrooms and outside showers. The launching ramp complex shall be open and available 24 hours a day;

G. The applicant shall provide shoreline access with nearby restrooms, showers, and parking areas free-of-charge on each side of the channel;

H. The applicant shall provide public access to and around the entire marina facilities through a series of internal vehicular, bicycle and pedestrian ways. The pedestrian pathway around the edge of the marina shall be open and available to the public free of charge at all times, excepting during the actual construction of the project and upon a determination by the Department or other governmental agency that if it is unsafe to permit public access to that area;

I. The applicant shall provide well-signed and lit public pedestrian access around the edge of the marina; including a provision for diverting pedestrian access around certain facilities, such as boat

COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII

In the Matter of the Water Use Permit Application for the Ewa Marina Contested Case Hearing	)	Case No. CCH-OA96-1 FINDINGS OF FACT CONCLUSIONS OF LAW, AND DECISION AND ORDER

times. The faster travel times provide an economic benefit to commuters. Ewa Marina will also provide job opportunities for students who want to work after school, who now have to travel outside of their communities for employment. A-T-1 (Lee) at 16; A-T-10 (Parker) at 3-4; A-T-11 (Plasch) at 6-7; Tr. 10/8/96 at 43 (Lee); Tr. 10/9/96 at 101-102 (Plasch); Tr. 11/4/96 at 43-46 (Parker). [HASEKO FOF115]

137. Full build out of the Ewa Marina project will take about 12-15 years, during which time an average of 230 construction jobs will be generated by the project. An additional 230 indirect jobs generated by the purchasing of goods and services by construction companies and workers will also be generated by the project. A-T-1 (Lee) at 16; A-T-11 (Plasch) at 4; Exhibit A-26; Tr. 10/9/96 at 98-99 (Plasch). [HASEKO FOF117]

138. Although Hawaii has the potential for generating additional revenues by increasing the number of sailing events held in Hawaii or expanding those events that it currently hosts, this cannot be done because of the current lack of marina facilities in Hawaii. A-T-8 (Morrison) at 9; Tr. 10/25/96 at 12-13, 25-31, 38 (Morrison). [HASEKO FOF123]

139. Hawaii has the potential for attracting wintertime racing events, which mainland locations are unable to do. Tr. 10/25/96 at 41-42 (Morrison). [HASEKO FOF125]

140. Hawaii has the potential to be a year-round training area for top competitive teams in kayaking and canoeing from around the world if support facilities such as are planned for Ewa Marina are available. Tr. 10/9/96 at 11-12 (Guild). [HASEKO FOF126]

141. Marinas, and privately operated marinas in particular, require far less public services, such as municipal water and sewage systems, public streets, and police and fire services, as compared to other land uses. Hence, normally the cost of providing these public services is far outweighed by the benefits a marina brings to a community. A-T-14 (Williams) at 11. [HASEKO FOF130]

142. Haseko believes that the presence of the marina in the proposed 'Ewa Marina project will add 20 to 30 million dollars in value to the land site improvements. Nelson Lee, 10/8/96, p. 144, ll. 8-12; p. 145, ll. 4-6. [SEBO FOF1]

G. NATIVE HAWAIIAN TRADITIONAL AND CUSTOMARY PRACTICES - The proposed use will not abridge or deny traditional and customary rights of native Hawaiians.

143. Professional archaeologists identified 53 archaeological sites on the Ewa marina property. Pursuant to a Memorandum of Agreement among HASEKO, the Corps of Engineers, the National Advisory Council for Historic Preservation, the

State Historic Preservation Officer, and the Office of Hawaiian Affairs, six of these sites will be preserved and an interpretive program will be developed for these sites. A-T-1 (Lee) at 10; Ex. A-15. [HASEKO FOF194]

144. Subsistence [is] includes the customary and traditional uses of wild and cultivated renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, transportation, culture, religion, and medicine for barter or sharing, for personal or family consumption and for customary trade. D-T-3 (McGregor) at 3. [HASEKO FOF195]

145. OHA's expert witness Davianna McGregor described what distinguishes Hawaiian custom and practice as follows: "[It] is the honor and respect of its practitioners for traditional Hawaiian cultural values and customs which guides them in their subsistence harvesting of natural resources. Such values and customs include, but are not limited to, the following: 1) take only what is needed; 2) do not waste natural resources; 3) gather according to the life cycle of the resources, allow other resources to reproduce, and not fish during spawning season; 4) alternate areas within which to gather, fish, and hunt, do not keep returning to the same place, and allow the source to replenish itself; 5) if an area has a declining resource, observe a kapu on harvesting until it comes back, replant if appropriate; 6) resources are always abundant and accessible to those who possess the knowledge about their location and have the skill to obtain them, there is no need to overuse a more accessible area; 7) respect and protect the knowledge which has been passed down inter-generationally, do not carelessly give it away to outsiders; 8) respect each other's areas; 9) throughout the expedition keep focused on the purpose and goal of the fishing, hunting or gathering; 10) be aware of and stay alert to the natural elements; 11) share what is gathered with family and neighbors; 12) take care of the kupuna who passed on their knowledge and experience and are now too old to go out by themselves; 13) do not talk openly about plans for subsistence hunting, gathering or fishing; 14) respect the resources and the spirits of the land, forest, ocean, and refrain from being boisterous; and 15) respect family 'aumakua by refraining from gathering resources sacred to them." D-T-3 (McGregor) at 3-4. [HASEKO FOF196]

146. Hawaiian custom and practices encompasses the full range of traditional, cultural, religious and subsistence activities engaged in by native Hawaiians, including the customary and traditional uses of wild and cultivated renewable resources for family consumption. Witness Statement of Davianna Pomaika'i McGregor, p. 2, ll. 24-25, p. 3, ll. 1-8. [SEBO FOF91]

147. Traditional Hawaiian cultural values and customs which guide the subsistence harvesting of natural resources include taking only what is needed, not wasting any natural resources, allowing a source to replenish itself, sharing what is gathered with family and neighbors, and respecting the resources and the spirits of the land and sea. Witness Statement of Davianna Pomaika'i McGregor, p. 3, ll. 21-26; p. 4, ll. 1-24. [SEBO FOF92]

148. The evidence presented to support claims of abridgement of traditional and customary Hawaiian rights included hearsay testimony that one individual collected enough limu to feed 1,000 people at a luau in Nanakuli. That limu was collected, not offshore of where the proposed marina entrance channel will be located, but from the eastern end of the Ewa Marina property towards Iroquois Point. Tr. 10/11/96 at 76-77 (Myer); Tr. 10/14/96 at 109-110 (Farm). [HASEKO FOF197]

149. Hawaiians have fished all along the 'Ewa coastline as long as anyone can remember. Mary Serrao, 10/9/96, p. 32, ll. 23-25; p. 1-3. [SEBO FOF60]

150. The limu and fish have decreased in the Ewa Beach area generally over the years due mainly to increased population. More people fishing and harvesting limu results in overharvesting of the resource. Tr. 10/14/96 at 97 (Sheldon), Tr. 10/14/96 at 122-123 (Farm).

151. Based on the evidence presented, very little traditional and customary practices of native Hawaiians are specifically experienced in the project area. D-T-4 (Sheldon), D-T-6 (Oliveira), A-T-12 (Serrao).

152. The Ewa Marina project would not impact the practice of traditional and native Hawaiian customary rights in the project area. Tr. 10/9/96 at 28 (Serrao).

153. Although there was testimony of some subsistence fishing and gathering from the ocean along the Ewa coast, no credible evidence was presented of activities by native Hawaiians, which could be described as a Hawaiian custom and practice in accord with Dr. McGregor's description, which would be affected by the excavation of the Ewa Marina into the Ewa upper limestone aquifer. D-T-4 (Sheldon), D-T-5 (Wofford), D-T-6 (Oliveira), D-T-7 (Mevers). [HASEKO FOF198]

H. LAND USE PLANNING AND POLICIES - The proposed use is consistent with state and county general plans, land use designations, plans and policies.

154. The State Land Use Commission makes broad classifications of lands into urban, agriculture, rural, and conservation. This is one of the ways in which the State carries out goals, objectives, policies, and priorities as set forth in the State Planning Act. Tr. 10/9/96 at 62 (Clegg). [HASEKO FOF81]

155. The land on which the Ewa Marina project will be developed is classified as Urban on State Land Use maps, which is the proper classification for this development. A-T-1 (Lee) at 6; A-T-2 (Clegg) at 5; Tr. 10/9/96 at 62 (Clegg); Ex. A-11. [HASEKO FOF82]

156. At the City level, the General Plan (GP) and Development Plans (DP) represent the islandwide comprehensive long range plan, and together comprise the City's land use policy. A-T-2 (Clegg) at 3; Tr. 10/9/96 at 62 (Clegg). [HASEKO FOF83]

conditions in the Applicant's Department of the Army (DA) permit and the Department of Health (DOH) Section 401 Water Quality Certification. The DA permit and the DOH certification require certain monitoring of the water quality of the marina and nearshore waters before, during, and after the construction of the marina. The DA permit and DOH certification require adherence to certain state and federal water quality standards. The Commission on Water Resource Management is not authorized to set or enforce Clean Water Act standards. Based on the evidence, the Commission does not find that the marina and nearshore area will be adversely affected by the marina project given the safeguards set out by the DA permit and DOH certification.

33. Based on the evidence presented, particularly the temporary effect, if any, on the affected aquifers, and the temporary effect, if any, on the environment, fish and wildlife, and the waters of the State, the Commission finds that the proposed use does meet the public trust principles set forth in Robinson and the water code.

G. The proposed use does not abridge or deny traditional and customary rights of native Hawaiians.

34. Article XII, Section 7 of the Hawaii State Constitution provides for the protection of native Hawaiian traditional and customary gathering rights:

> The State reaffirms and shall protect all rights customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by ahupua'a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate.

35. The Water Code also provides for the protection of native Hawaiian traditional and customary gathering rights in section 174C-101, Haw. Rev. Stat., which states in pertinent part:

> Traditional and customary rights of ahupua'a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778 shall not be abridged or denied by this chapter. Such traditional and customary rights shall include, but not be limited to, the cultivation or propagation of taro on one's own kuleana and the gathering of hihiwai, opae, o'opu, limu, thatch, ti leaf, aho cord, and medicinal plants for subsistence, cultural, and religious purposes.

36. In Public Access Shoreline Hawai'i v. City Planning Commission, 79 Hawai'i 425, 903 P.2d 1246 (1995), the Hawaii Supreme Court stated:

> The State's power to regulate the exercise of customary and traditionally exercised Hawaiian rights...necessarily allowed the State to permit development that interferes with such rights in certain circumstances...Nevertheless, the State is obligated to protect the reasonable exercise of customary and traditionally exercised rights of Hawaiians to the extent feasible. Id. at 450 n. 43, 903 P.2d at 1271 n.43.

37. In making that determination, the Hawaii Supreme Court has stated that governmental agencies must address three questions: "(1) whether traditional and customary native Hawaiian rights are exercised in the project area; (2) of the extent to which, if such rights exist, they will be affected by the proposed action; and (3) of the feasible action, if any, that should be undertaken by the [agency] to protect these rights, if they are found to exist." Trustees of the Office of Hawaiian Affairs et.al. v. Board of Land and Natural Resources et.al., Supreme Court No. 19774, memo.op., filed March 12, 1998.[1]

38. Based on the evidence presented, the Commission finds the nearshore area oceanside of the project area is relatively barren and not a climax ecosystem. The marine resources of the area are declining due to overharvesting of the fish and limu. The Commission finds that OHA and Public Interest Parties have, at best, demonstrated that a limited amount of traditional and customary native Hawaiian rights are exercised in the project area.

39. Based on the evidence presented, the Commission finds that the effect of the excavation of the marina on the limu and fish and other marine species traditionally and customarily gathered and consumed by native Hawaiians will be temporary or not significant.

40. Based on the evidence presented, the Applicant has demonstrated by a preponderance of the evidence that any excavation of the marina entrance channel will result in at best a temporary diminishment of access to that dredged area. The proposed project will result in a temporary or not significant diminishment of fish and limu in the nearshore area where the entrance channel will be located.

41. Based on the evidence presented, the Commission finds that a temporary diminishment of access, a temporary reduction of the fish, and a non-significant reduction of limu to the dredged and submerged lands where the entrance channel will be constructed, is justified because the proposed project will improve the access to the present rocky coastline. The proposed project will make the area more accessible to those who may be unable to currently traverse the area to exercise traditional and customary rights.

As part of the community benefits package, the Applicant is required to donate approximately 10 acres of beachfront property as an addition to Oneula Park. This addition will improve public access to the shoreline. Additionally, the boat launching ramp will improve access to the ocean by boat. This will enhance the opportunities for fishing in the area. On balance, the Commission finds that the project will not diminish or abridge the exercise of traditional and customary rights of native Hawaiians.

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[1] This memorandum opinion may be cited in this case pursuant to Rule 35(c), Hawaii Rules of Appellate Procedure.

42. To protect the traditional and customary rights exercised in the project area during the construction of the marina, access to the shoreline fronting the project area must be permitted for the reasonable exercise of traditional and customary practices of native Hawaiians to the extent feasible and safe.

43. After the completion of the project, the Applicant will provide public access to the marina waterway and ocean shoreline for the purpose of permitting the reasonable exercise of traditional and customary practices of native Hawaiians.

44. Therefore based on the evidence presented, Applicant's applied-for uses, as amended and set forth in this Decision and Order, do not abridge or deny traditional or customary Hawaiian rights, customs, practices, or appurtenant water rights, or any other rights referred to in or protected by Part IX of the State Water Code, the common law, or the Constitution of the State of Hawaii.

H. The proposed use is consistent with state and county general plans and land use designations, and county land use plans and policies.

45. Section 174C-49(a)(5), Haw. Rev. Stat., requires that the proposed use is consistent with state and county general plans and land use designations. The proposed use is in the state and county general plans and has the proper land use designations, therefore, the Commission finds that the proposed use is consistent with state and county general plans and land use designations.

46. Section 174C-49(a)(6), Haw. Rev. Stat., requires that the proposed use is consistent with county land use plans and policies. The proposed use is in the county land use plans and consistent with its policies, therefore, the Commission finds that the proposed use is consistent with county land use plans and policies.

47. The proposed use has been approved and issued the requisite permits by the Army Corps of Engineers, the City and County of Honolulu, and the State of Hawaii, except a conservation district use permit for the entrance channel.[2]

I. The proposed use does not interfere with the rights of the department of Hawaiian home lands as provided in section 221 of the Hawaiian Homes Commission Act.

48. Section 174C-49(a)(7), Haw. Rev. Stat., requires that the proposed use will not interfere with the rights of the department of Hawaiian home lands as provided in section 221 of the Hawaiian Homes Commission Act.

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[2] The CDUP was issued in December, 1994, however, on March 12, 1998, the Hawaii Supreme Court vacated the permit and remanded to the BLNR for the sole and limited purpose of complying with its statutory and constitutional duty to address the curtailment of native Hawaiian rights as a result of the proposed project by addressing certain questions set forth in that decision.

V. DECISION AND ORDER

The Commission approves the issuance of a water use permit to Haseko (Ewa), Inc. for the reasonable and beneficial "use" of Puuloa Aquifer System ground water for the proposed excavation of the Ewa Marina, subject to the standard water use permit conditions listed in Attachment A and the following special conditions:

a. Standard Conditions 9, 10, 11, 12, 16, 17, and 18 are waived.

b. Not later than the start of the construction phase (as described in the Department of the Army Corps of Engineers Permit PODCO 2117) of the marina, the applicant's water use permits, WUP Nos. 192 and 347, for a total allocation of 3.3 mgd, shall be canceled, with the written consent of the permittee, in accordance with Haw. Rev. Stat. § 174C-58.

c. Upon cancellation of WUP Nos. 192 and 347, pursuant to b., above, the applicant shall use reclaimed water for its non-potable needs.

d. This permit shall be subject to the Commission's periodic review of the progress of the construction of the marina and the applicant's compliance with the conditions of this permit. The Commission may initiate action to revoke the permit if construction of the marina is not completed by December 31, 2003, which coincides with the expiration date of the U.S. Army Corps of Engineers permit.

e. The applicant shall submit to the Commission a copy of the complete preconstruction report, required by the Corps, describing the results of the pre-construction activities, the adjustments made to the model, and the predicted behavior of the caprock aquifer when the marina is excavated and opened.

f. During the construction of the marina, the applicant shall submit to the Commission copies of monitoring results and any revised predictions, required by the Corps.

g. To protect the traditional and customary rights exercised in the project area during the construction of the marina, access to the shoreline fronting the project area must be permitted for the reasonable exercise of traditional and customary practices of native Hawaiians to the extent feasible and safe.

h. After the completion of the project, the Applicant will provide public access to the marina waterway and ocean shoreline for the purpose of permitting the reasonable exercise of traditional and customary practices of native Hawaiians.

i. Post construction, the applicant shall submit to the Commission copies of quarterly reports, required by the Corps, analyzing the data to determine impact of the completed marina on the resource value of the Wetland Preservation Area, the habitat value of the anchialine pools, and the ground-water levels and salinity gradients on the caprock aquifer.

j. The applicant shall comply with all other applicable statutes, ordinances, and regulations of the Federal, State, and City and County of Honolulu governments.

EXHIBIT K

Ocean Pointe Traffic Master Plan Update
Dated February 9, 2001

TRAFFIC MASTER PLAN UPDATE

FOR

OCEAN POINTE

February 9, 2001

Ewa, Oahu, Hawaii

Prepared for:

Haseko (Hawaii), Inc.

Prepared By:

Pacific Planning & Engineering, Inc.
1221 Kapiolani Boulevard, Suite PH-60
Honolulu, Hawaii 96814

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FOREWORD

Pacific Planning & Engineering, Inc. published a traffic master plan report for Ocean Pointe (then known as Ewa Marina) in June 1997 which was subsequently updated in August, 2000. Recent changes to the internal roadway infrastructure and land use densities necessitates a re-evaluation of the traffic impacts of the proposed changes. However, the recommendations previously stated for the external study intersections along Fort Weaver Road are still valid.

The traffic forecasts shown in this report's figures and tables are the direct result of Pacific Planning & Engineering, Inc.'s proprietary statistical tools. For report editing and review purposes, some or all of the forecast values have been rounded to the nearest five vehicles from our mathematical results, although we do not imply this level of accuracy can exist in any forecast method. The rounded values, however, reasonably quantify the forecasted traffic volumes for the purposes of this study.

The findings of this report should not be used as interpretation of traffic impact by other projects. Critical parameters including impact roadways, date of completion and project user characteristics will significantly affect the analytical results for other projects.

EXECUTIVE SUMMARY

Pacific Planning & Engineering, Inc. (PPE) was engaged to undertake a traffic study to identify and assess future traffic needs for the Ocean Pointe Project. This study identifies and evaluates the traffic impacts due to internal roadway changes in the year 2014 when the project is expected to be completed and occupied.

Introduction

Ocean Pointe is a master planned recreation-oriented development in Ewa, Oahu, Hawaii on approximately 1,100 acres of land. Formerly known as the Ewa Marina Community Development, the project includes single and multi-family residential units, a man-made marina with a maritime commercial complex that includes commercial and industrial space and visitor/accommodation units, a golf course and other recreational amenities.

Due to the size and complexity of various components of Ocean Pointe, the project will be developed in phases. The specific schedule for constructing the project is dependent on various factors including market conditions. The first phase of residential development is currently under construction and several hundred units are already occupied. Subsequent addenda to this Master Plan may be prepared in connection with the development of future phases of Ocean Pointe.

Project Description

HASEKO Ewa, Inc. is developing the Ocean Pointe Project, a master planned recreation-oriented development in the Ewa region on Oahu.

The master plan is for a community approximately 1,100 acres in size which includes single and multifamily residential units, a man-made marina with a maritime commercial complex that includes commercial and industrial spaces and visitor accommodations, golf course, and other recreational amenities. Table ES-1 shows the land uses.

Table ES-1. Ocean Pointe Development

Land Use	Quantity
Single Family Residential	2,944 units
Multifamily Residential	1,906 units
Marina	1,400 slips
Visitor Accommodations	950 rooms
Retail Shops	40,000 ft^2
Restaurant Complex	40,000 ft^2
Commercial Offices	70,000 ft^2
Yacht Club	12,000 ft^2
Parks	20 acres
Elementary School	1,000 students
Golf Course	250 acres

Methodology

Analysis was conducted for the internal study intersections serving the Ocean Pointe Project, which are affected by the changes to the internal roadway system. The changes to the internal roadways do not affect the recommendations previously stated for the external intersections on Fort Weaver Road. This is because the number of trips generated by the Ocean Pointe Project in this report is less than the number of trips generated in the Traffic Master Plan for Ewa Marina dated 1997. Table ES-2 shows the differences.

Table ES-2. Ocean Pointe Trip Generation Comparisons						
	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
Report	Enter	Exit	Total	Enter	Exit	Total
Ewa Marina (1997).	1,617	3,127	4,744	4,145	2,726	6,871
Ocean Pointe (2001)	1,466	2,858	4,324	3,438	2,389	5,827
Differences	- 151	- 269	- 420	- 707	- 337	- 1,044

A baseline analysis was conducted to calibrate the traffic forecast model used to forecast future Ocean Pointe traffic. The forecasts were based on linear interpolation of 2020 employment and population forecasts as part of the latest OMPO planning. Trip generation peak hour equations were developed. A gravity model was used to develop a multi-zone trip table. Traffic forecasts were compared with 1990 HDOT peak period counts. Trip generation rates were adjusted to obtain model results approximately equal to peak hour 1990 counts. Trip generation was conducted for Ocean Pointe land uses. Trip generation rates from "Trip Generation" by the Institute of Transportation Engineers was used. Trips into and out of Ocean Pointe were distributed to other areas by including planned land uses in the traffic forecast model.

Paths for each zone pair were estimated. Spreadsheets were developed to aggregate zone pair assignments for all turning movements at the study intersections which were previously identified. Forecasts were obtained for the morning and afternoon peak hours for 2014.

Traffic analysis was made for all study intersections and time periods. Future intersections were judged as either signalized or unsignalized and analyzed accordingly.

Ocean Pointe Traffic Master Plan Revisions

The Ocean Pointe Traffic Master Plan revision consists of future roadways and existing intersections to serve the future Ocean Pointe community by 2014. Figure ES-1 depicts the master plan consisting of recommended laneage at the study intersections. The elements of the revision are discussed below.

Intersection A

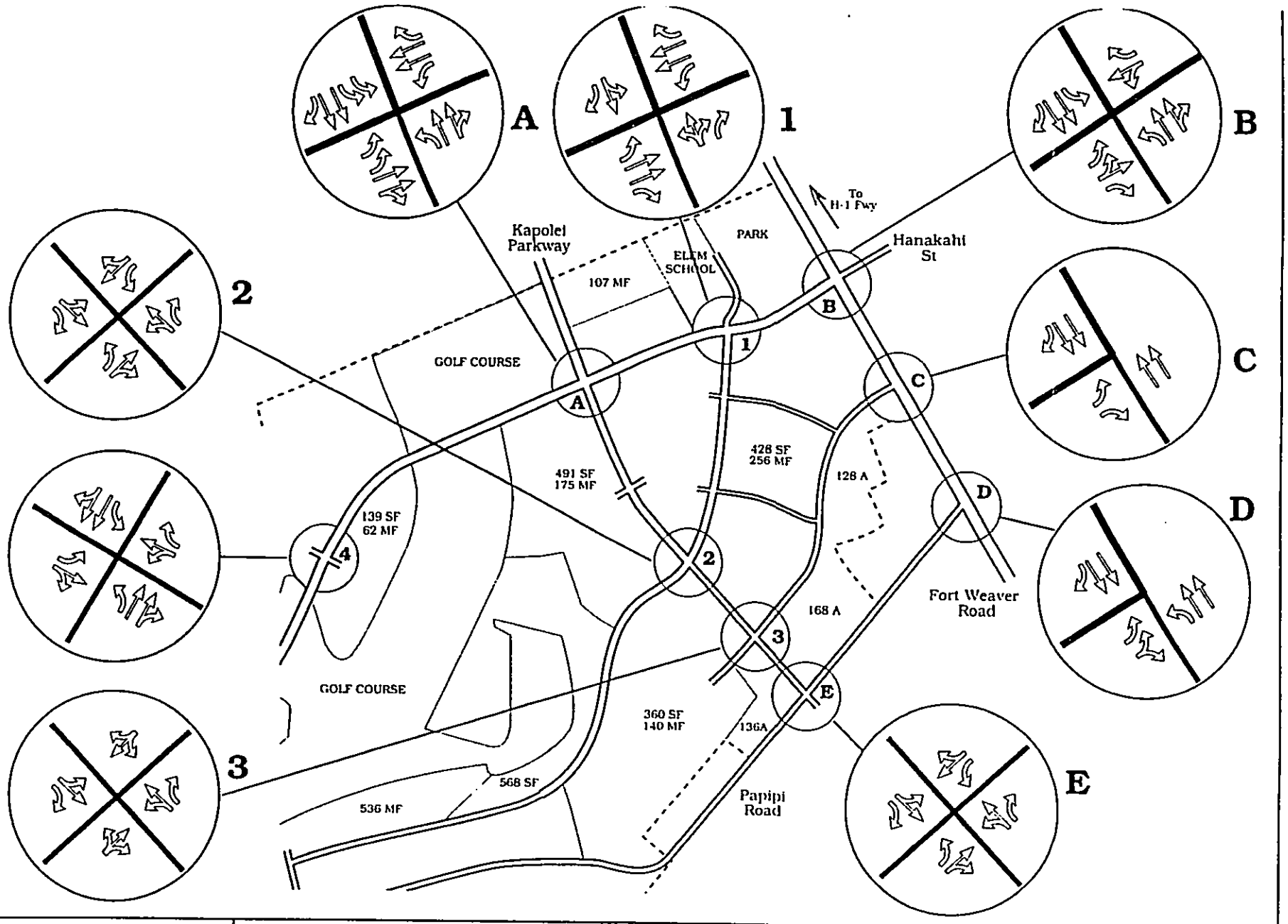
The major revision to the internal roadway network is the elimination of two collector streets from the east-west roadway. This change results in increased traffic along the Kapolei Parkway in the north and southbound directions. Traffic analysis shows that two northbound through lanes are required through Intersection A to accommodate the increase in traffic during the weekday morning peak hour. Similarly, two southbound through lanes are also necessary to accommodate the weekday afternoon peak hour traffic.

Intersection 1

Previously, Intersection 1 was envisioned as a T-intersection. The revised roadway network now has Intersection 1 providing access to the elementary school and park via a southbound approach leg. The recommended revised laneage for this intersection is shown on Figure ES-1.

Intersections 2, 3, 4 and E

Laneage recommendations for these intersections are shown on Figure ES-1.



PACIFIC PLANNING & ENGINEERING, INC

Ewa Marina Traffic Master Plan

Figure ES-1

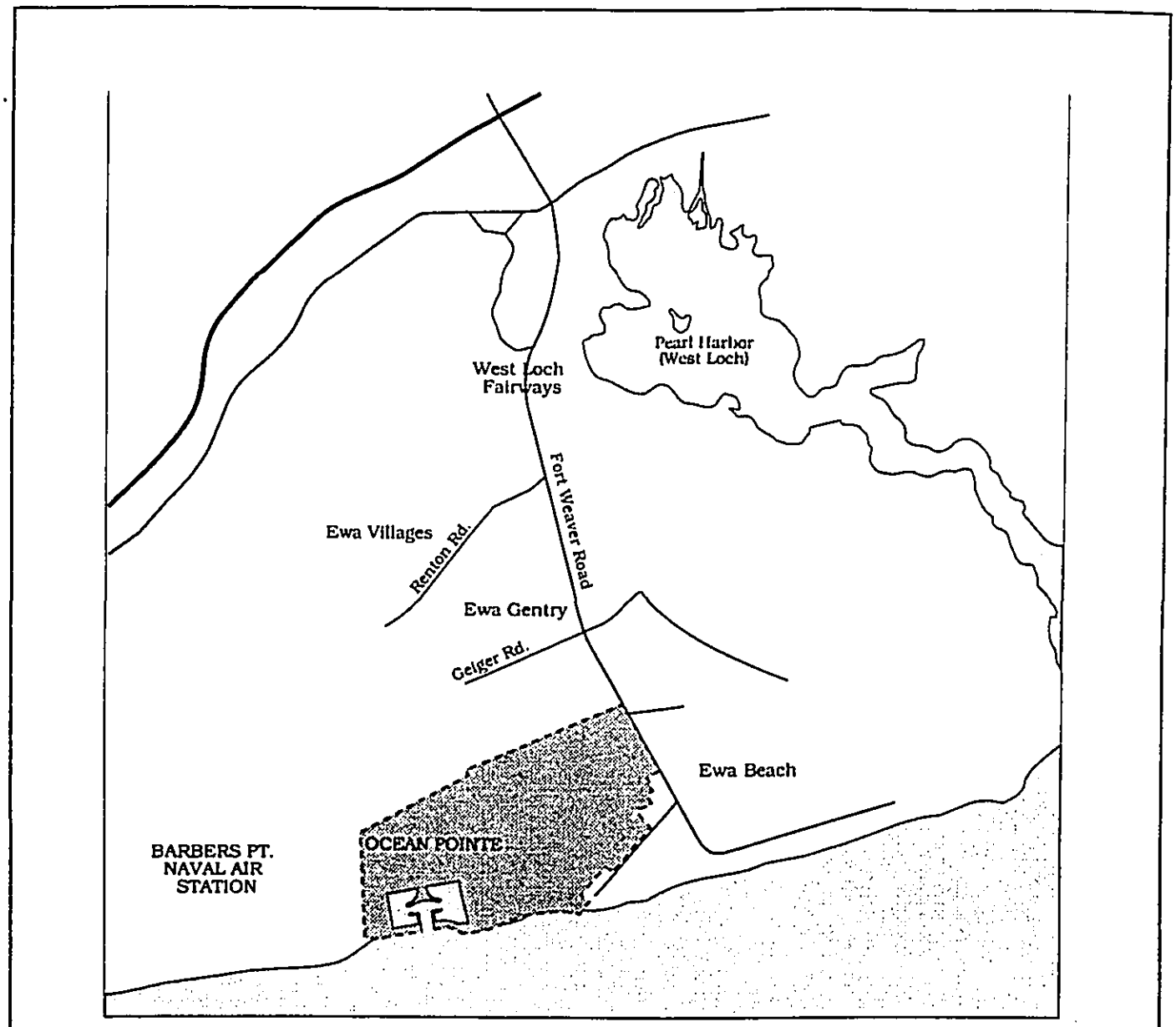
PROJECT DESCRIPTION

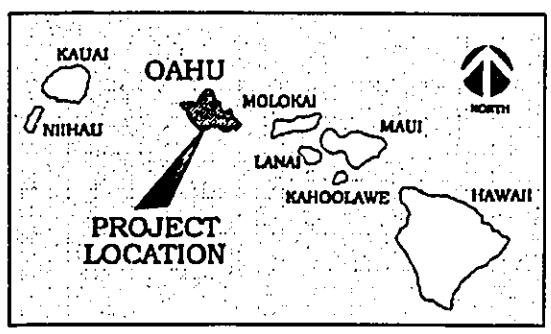
HASEKO Ewa, Inc. is developing the Ocean Pointe Project, a master planned recreation-oriented development in the Ewa region of the island of Oahu. The master plan calls for a community approximately 1,100 acres is size which includes single and multi-family residential units, a man-made marina with a maritime commercial complex that includes commercial and industrial spaces and visitor accommodations, golf course, and other recreational amenities. The planned land uses are shown in Table 1.

Table 1. Ocean Pointe Development

Land Use	Quantity
Single Family Residential	2,944 units
Multifamily Residential	1,906 units
Marina	1,400 slips
Visitor Accommodations	950 rooms
Retail Shops	40,000 ft^2
Restaurant Complex	40,000 ft^2
Commercial Offices	70,000 ft^2
Yacht Club	12,000 ft^2
Parks	20 acres
Elementary School	1,000 students
Golf Course	250 acres

Figure 1 shows the Project Location. Figure 2 shows the Project Site Plan with the anticipated phasing of the project.

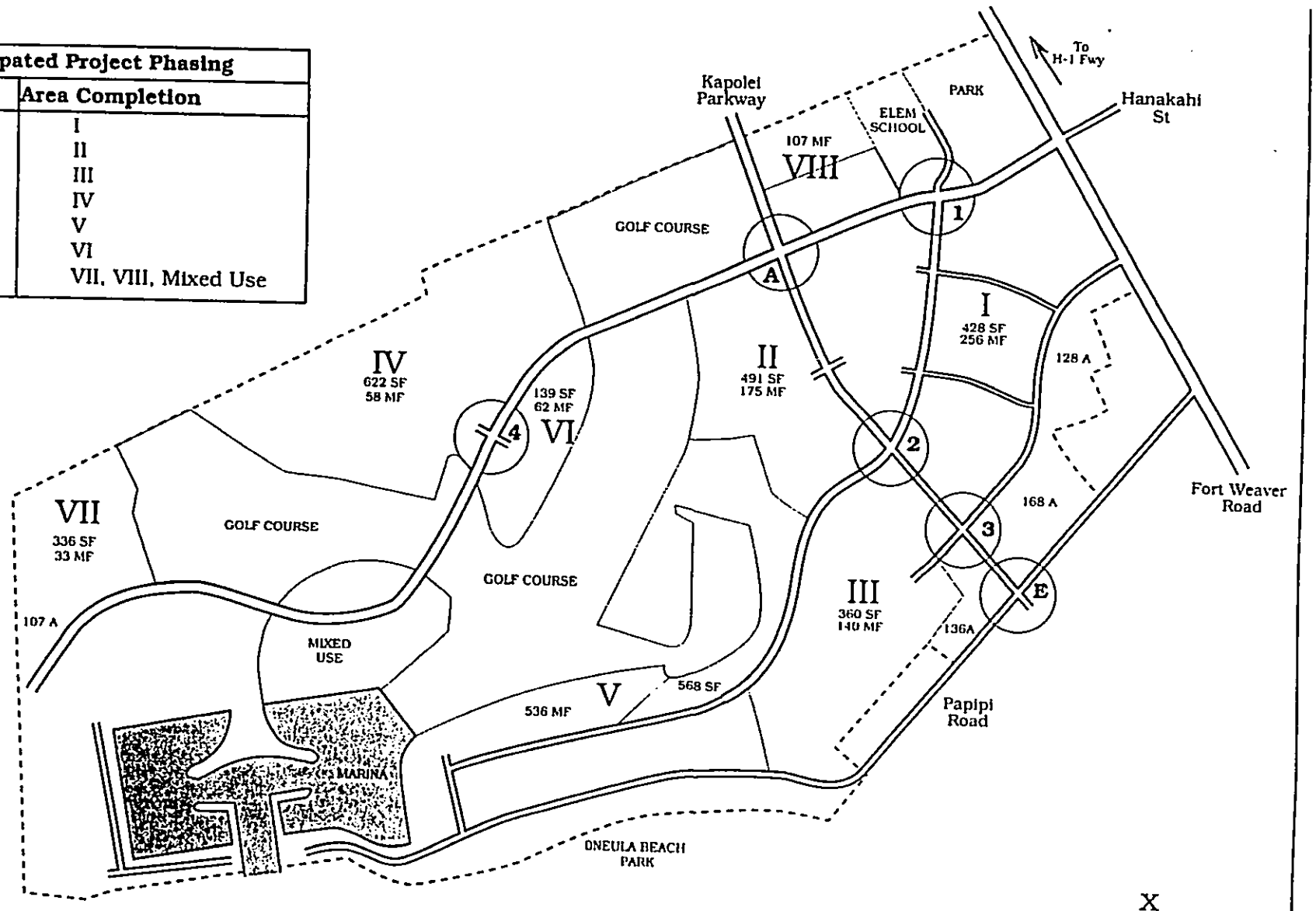




OCEAN POINTE

PACIFIC PLANNING & ENGINEERING, INC	Project Location	Figure 1

Anticipated Project Phasing	
Year	**Area Completion**
2002	I
2004	II
2006	III
2008	IV
2010	V
2012	VI
2014	VII, VIII, Mixed Use



PACIFIC PLANNING & ENGINEERING, INC

Project Site

Figure 2

The development includes 950 visitor accommodation units with fitness and conference room facilities, retail shops, restaurants, a yacht club and a golf course. The commercial center will consist of retail shops, professional offices, theme restaurants and marina-related establishments including a yacht club.

An elementary school will be constructed with a maximum capacity of approximately 1,000 students.

A portion of the land area of the project will be used to develop a golf course which will cover 250 acres.

A traffic study for the project was conducted in 1997. The revisions reflected in this update do not affect the recommendations previously stated for intersections on Fort Weaver Road. This is because the number of trips generated by the Ocean Pointe Project in this report is less than the number of trips generated in the Traffic Master Plan for Ewa Marina dated 1997. Table 2 shows the differences.

Table 2. Ocean Pointe Trip Generation Comparisons

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Differences	- 151	- 269	- 420	- 707	- 337	- 1,044

EXISTING CONDITIONS

An inventory of existing conditions was conducted to provide a basis for the potential traffic impact of the proposed project. The review included the land uses in the area and roadway facilities.

Land Uses

The project site is currently under development with the first phase of residential development (Area I). Several hundred units are already occupied. Much of the remaining areas have been excavated for fill. Adjacent to the project site at the corner of Fort Weaver Road and Papipi Road is the Ewa Beach Shopping Center. The Ewa Beach community is located southeast of the project site while Kalaeloa (formerly, Barbers Point Naval Air Station) is to the west. The Oneula Beach Park, a County park, lies along the south side of the project site.

The majority of the land to the north is currently undergoing major residential development. Various residential developments are being planned or under construction. There are no major developments planned immediately to the east and south of the project. Growth due to new military activity is minor. The eventual use of Kalaeloa is uncertain at this time.

Roadway Facilities

Fort Weaver Road provides the primary roadway link to and from the H-1 Freeway. Fort Weaver Road begins at the H-1 Freeway and extends southward to Ewa Beach.

Fort Weaver Road is the major north-south roadway in the east Ewa region. In the vicinity of the project, Fort Weaver Road is a four-lane road from the with separate turning lanes at major intersections. The posted speed limit varies from 35 to 45 miles per hour (mph) and is 25 mph near the project. Portions of the road near the Ocean Pointe Project provide center turn lanes, auxiliary turn lanes at intersections, and bicycle lanes.

FUTURE CONDITIONS

The Oahu Metropolitan Planning Organization (OMPO) forecasting model was used as a basis to estimate future traffic conditions at the study intersections. Population and employment forecasts for Oahu in the year 2020 that are part of the OMPO forecasting model was used. The forecasts are categorized for all areas of Oahu, which are divided into 284 traffic assignment zones.

The population and employment figures for 1990 and 2020 are shown in Table 3. The zones are single or aggregate traffic zones for modeling purposes. The single zones are the traffic assignment zones adjacent to the Ocean Pointe Project. Population growth will be relatively small in the area compared to the growth in the northeast and northwest areas of Ewa.

Table 3. Population and Employment Forecasts

Zones	1990 Emp	1990 Pop	2020 Emp	2020 Pop	% Chg Emp	% Chg Pop
NE	469,067	716,079	582,679	907,216	24%	27%
NW	29,960	88,715	38,624	126,935	30%	43%
252	186	6,820	585	9,097	215%	33%
255	392	8,208	7,635	8,420	1848%	3%
254	4,328	11,676	5,436	12,850	26%	10%
S (253E)	0	1,183	0	1,677	0%	42%
S (253S)	413	1,893	528	2,683	28%	42%
TOTAL	504,346	834,574	635,487	1,068,878		

The forecast values for year 2014 were determined by linear interpolation or by adding the proportional difference between 1990 and 2020 to the 1990 values for all zones.

Projected Traffic Conditions

Future traffic forecasts with the proposed project were estimated for the year 2014. The forecasted traffic was assigned to the 2014 roadway network which includes internal roadways and the proposed Kapolei Parkway. The study intersections shown in Figure 2 were selected based on the impacts due to roadway changes.

A baseline analysis was conducted to calibrate the traffic forecast model to forecast future Ocean Pointe traffic. The general steps are as follows:

1. Obtained 1990, 2010 and 2020 land use and population forecasts. These values are currently authorized, and used in the latest OMPO traffic forecasts. Census data was also obtained from the State Data Book.

2. Obtained 1990 trip table from OMPO for 284 TAZ forecast.

3. Built peak hour trip generation equations based on population and employment.

4. Used gravity model as a distribution basis for multi-zone trip table. Calculated trips by iterating table and redistributing attractions based on differences with original attraction total for each zone, while holding zone productions constant.

5. Selected screenline -- Fort Weaver Road, 1990 State DOT peak hour counts.

6. Iterated morning and afternoon peak hour trip tables.

7. Calculated traffic volumes and compared with 1990 DOT peak period counts.

8. Adjusted trip generation rates and recalculate traffic volumes until model results in approximate peak hour 1990 counts. Adjusted for

variations in peak hour. (It should be noted that comparisons with other years indicate variations in volumes with less relative change in population and employment. Traffic for years following 1990 show increases in volume, and are likely due to heavy construction activity in the area.

9. Compared with OMPO data.

Following the baseline calibration effort, trip generation was conducted for Ocean Pointe land uses as noted in the project description section. The trips are shown in Table 4. Trip generation equations from "Trip Generation" by the Institute of Transportation Engineers were used. Trips into and out of Ocean Pointe were distributed to other areas by including the planned land uses in the traffic forecast model.

Table 4. Ocean Pointe Trip Generation

Land Use	Parameter	Weekday Morning Peak Hour		Weekday Afternoon Peak Hour	
		Enter	Exit	Enter	Exit
Single Family Res.	2,928 units	531	1,596	1,744	981
Multifamily Res	2,721 units	146	725	733	450
Marina	1,400 slips	37	75	160	106
Visitor Accommodations	950 rooms	238	152	200	333
Retail Shops	40,000 ft^2	56	37	45	49
Restaurant Complex	40,000 ft^2	111	90	230	136
Commercial Offices	70,000 ft^2	123	17	18	87
Yacht Club	12,000 ft^2	9	1	60	30
Parks	20 acres	8	33	107	36
Elementary School	1,000 students	171	119	120	140
Golf Course	250 acres	36	13	21	41
Totals		1466	2,858	3,438	2389

It should be noted that some of the equations used to generate the Ocean Pointe trips are different than those used previously. For

residential development, the extensive amount of data shows that an increase in residential units does not correspond to a linear increase in trips. As a result, Table 4 shows that the amount of trips generated by Ocean Pointe are less than shown in the previous master plan.

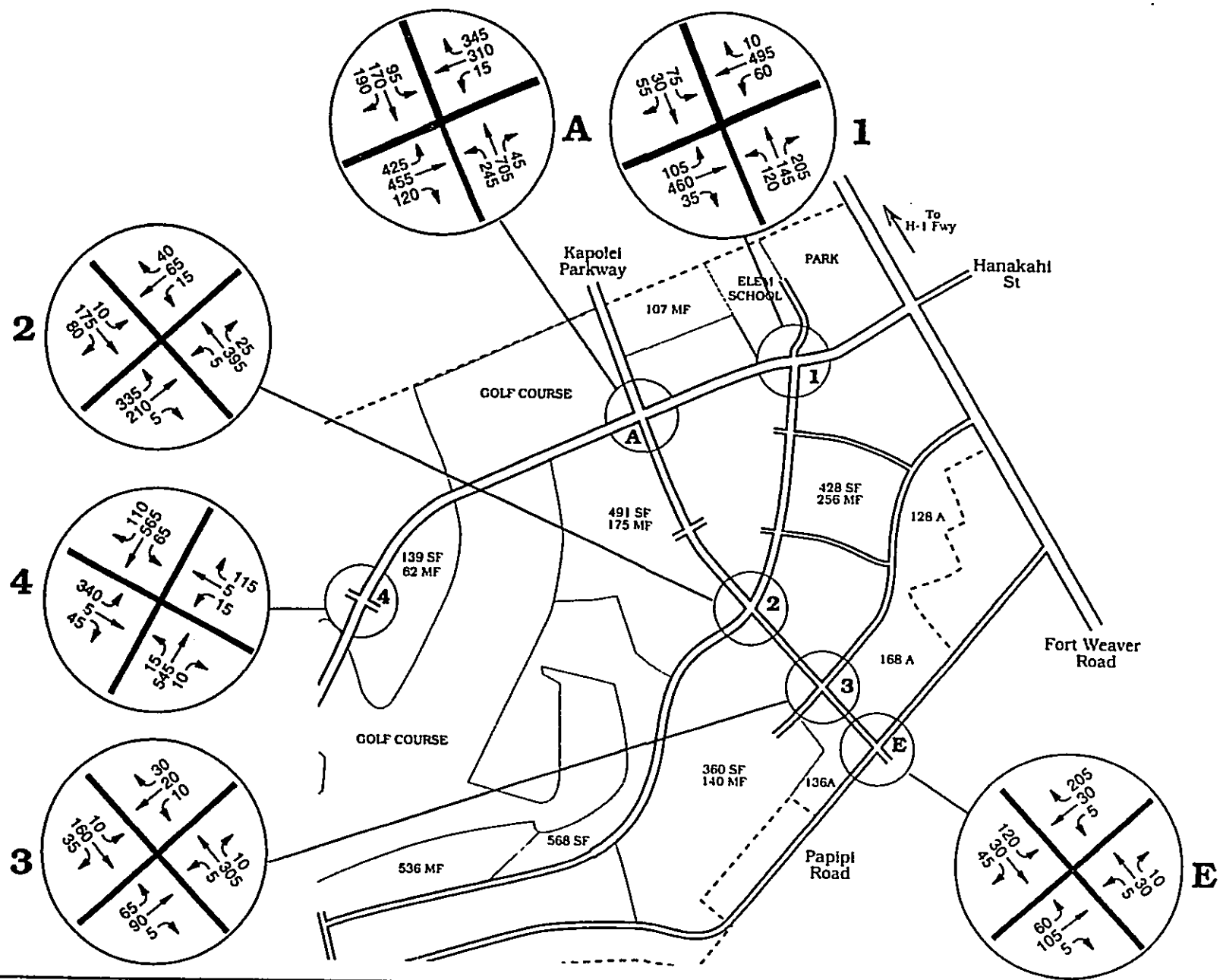
Paths for each zone pair were estimated. Traffic was assigned based on the estimated shortest path of travel time from origins to destinations. Traffic from the Ocean Pointe development was assigned onto Fort Weaver Road or the Kapolei Parkway. For the morning peak hour, 65% percent was assigned to Fort Weaver Road with 35% utilizing the Kapolei Parkway. For the afternoon peak hour, about 50% was assigned to Fort Weaver Road and 50% to the Kapolei Parkway.

Spreadsheets were developed to aggregate zone pair assignments for all turning movements at the study intersections. Forecasts were obtained for the morning and afternoon peak hours for 2014. The resultant forecast traffic with the proposed project is shown in Figures 3 and 4 for the morning and afternoon peak hours, respectively.

The 2014 forecasts are the basis of determining the laneage needs for Ocean Pointe on selected key roadways and intersections. The laneage is determined by analyzing the level-of-service at intersections. The analysis and results for 2014 traffic conditions are described in the following section.

The provision for multiple access points into and out of Ocean Pointe results in a more evenly distributed traffic volume pattern. The access points also dilute traffic concentration within Ocean Pointe. For example, morning and afternoon traffic to and from the resort/commercial areas will mainly use either Fort Weaver Road or the

Kapolei Parkway via the major east-west roadway. Since the roadway lies on the northern portion of the property, most of this heavy traffic will not use the internal roadways.



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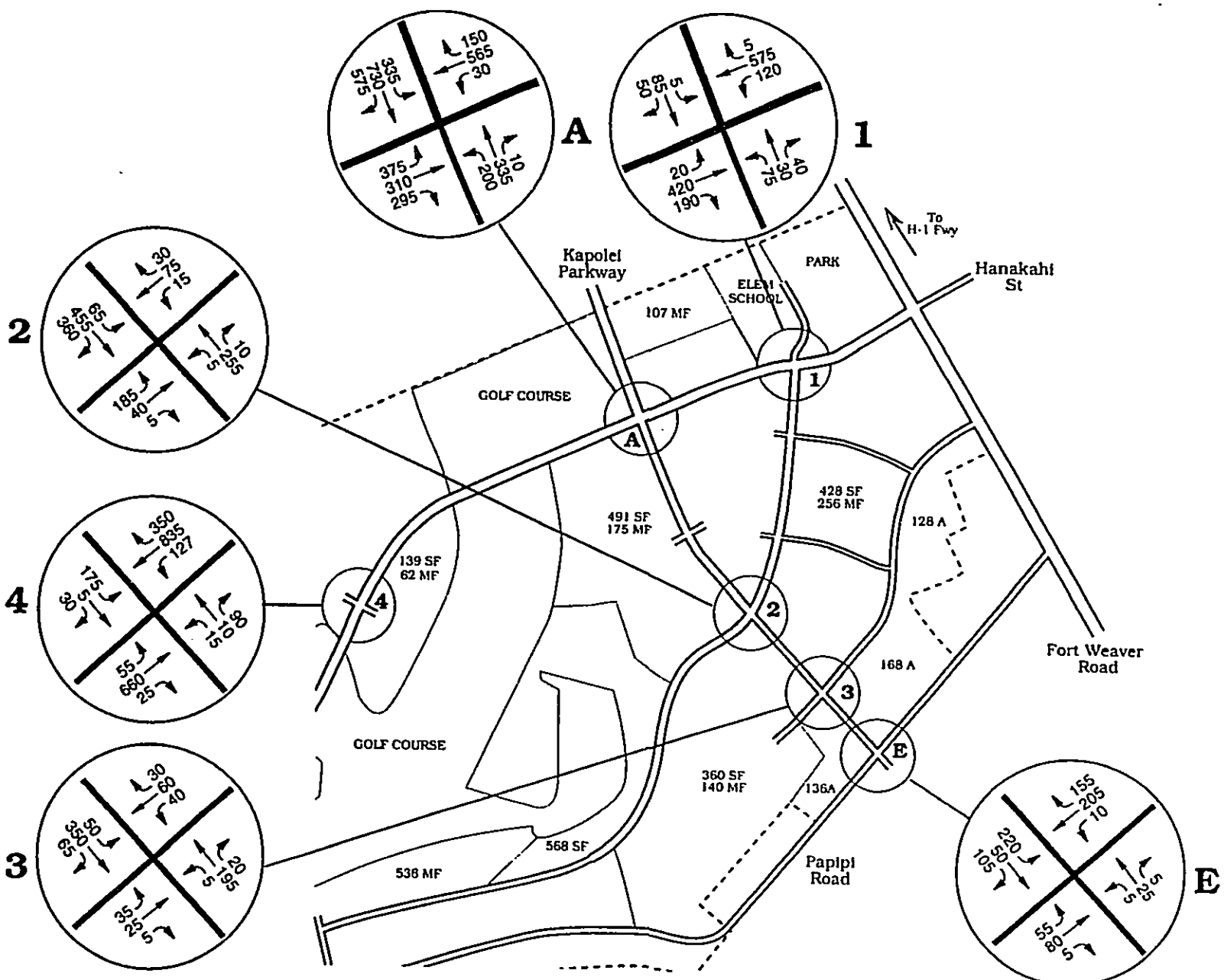
Year 2014 Weekday Morning Peak Hour Traffic Volumes

Figure 3



Year 2014 Weekday Afternoon Peak Hour Traffic Volumes

Figure 4

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TRAFFIC ANALYSIS

The study intersections were analyzed to determine the revised laneage needs with the project. The analysis of forecast traffic conditions were based upon planned improvements to the roadway network.

Analysis Methods

The study intersections were analyzed for the weekday morning and afternoon peak hours using procedures outlined in the Highway Capacity Manual[1]. The analysis methodology measures traffic operations using a Level-of-Service (LOS) rating, which ranges from "A" to "F", where LOS "A" is the best and LOS "F" is the worst. Appendix A provides detailed definitions of the LOS used in this study.

The LOS for unsignalized intersections is determined by the computed or measured control delay. Control delay includes the initial deceleration delay, queue move-up time, stopped delay and final acceleration delay. Control delay is defined for each minor movement only and not for the intersection as whole. LOS for the minor movements is classified into six letter categories ranging from less than 10 seconds of average control delay per vehicle (LOS "A") to over 50 seconds of average control delay per vehicle (LOS "F").

Operational analysis for signalized intersections is based on the average control delay per vehicle to measure traffic operating conditions. Control delay as defined here includes the initial deceleration delay, queue move-up time, stopped delay and final acceleration delay. The

[1] Transportation Research Board, National Research Council, Highway Capacity Manual, Special Report 209, Third Edition, Washington, D.C. 1998.

LOS for the traffic movements at a signalized intersection is classified into six letter categories ranging from less than 5 seconds of average control delay per vehicle (LOS "A") to over 80 seconds of average control delay per vehicle (LOS "F"). LOS criteria for unsignalized and signalized intersections are not directly comparable because motorists expect different levels of delay for each facility.

Traffic Signalization

The U.S. Department of Transportation, Federal Highway Administration Manual on Uniform Traffic Control Devices (MUTCD) (1988 Edition) sets forth principles for the installation of traffic control signals. The MUTCD contains 11 Warrants, which are used to determine whether traffic control signals are warranted.

The MUTCD states that traffic control signals should not be installed unless conditions meet one or more of the signal warrants in the manual. The satisfaction of a warrant or warrants, however, is not in itself justification for a traffic signal. Information obtained from engineering studies should be compared with requirements set forth in the warrants along with indications that installation of a traffic signal will improve the overall safety and/or operation of the intersection.

For this study, Warrant 11, the Peak Hour Volume Warrant was used since only peak hour volumes are available. The peak hour volume warrant is intended for application when traffic conditions are such that for one hour of the day minor street traffic suffers undue traffic delay in entering or crossing the major street.

The peak hour volume warrant is satisfied when the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicle per hour of the higher volume minor street approach (one direction only) for one hour of an average day falls above the curve in Figure 4-5 of the MUTCD for the existing combination of approach lanes. Tables 5 to 9 show the results of the warrant analysis for the year 2014 for Intersections A, 1, 2, 3 and 4.

Table 5 – Intersection A Peak Hour Warrant

	Major Street Volume	Minor Street Volume	Meets Warrant?
Weekday AM Peak Hour	1,670	995	Yes
Weekday PM Peak Hour	1,725	1,640	Yes

Table 6 – Intersection 1 Peak Hour Warrant

	Major Street Volume	Minor Street Volume	Meets Warrant?
Weekday AM Peak Hour	1,165	470	Yes
Weekday PM Peak Hour	1,330	145	No

Table 7 – Intersection 2 Peak Hour Warrant

	Major Street Volume	Minor Street Volume	Meets Warrant?
Weekday AM Peak Hour	690	550	No
Weekday PM Peak Hour	1,150	230	No

Table 8 – Intersection 3 Peak Hour Warrant

	Major Street Volume	Minor Street Volume	Meets Warrant?
Weekday AM Peak Hour	525	160	No
Weekday PM Peak Hour	685	130	No

Table 9 – Intersection 4 Peak Hour Warrant			
	Major Street Volume	**Minor Street Volume**	**Meets Warrant?**
Weekday AM Peak Hour	1,310	390	Yes
Weekday PM Peak Hour	2,055	210	Yes

The results show that the peak hour traffic volumes at study intersections A, 1 and 4 exceed the criteria for Warrant 11. However, installation of signals prior to 2014 should be based on additional analysis since the warrants may not be met for earlier time periods.

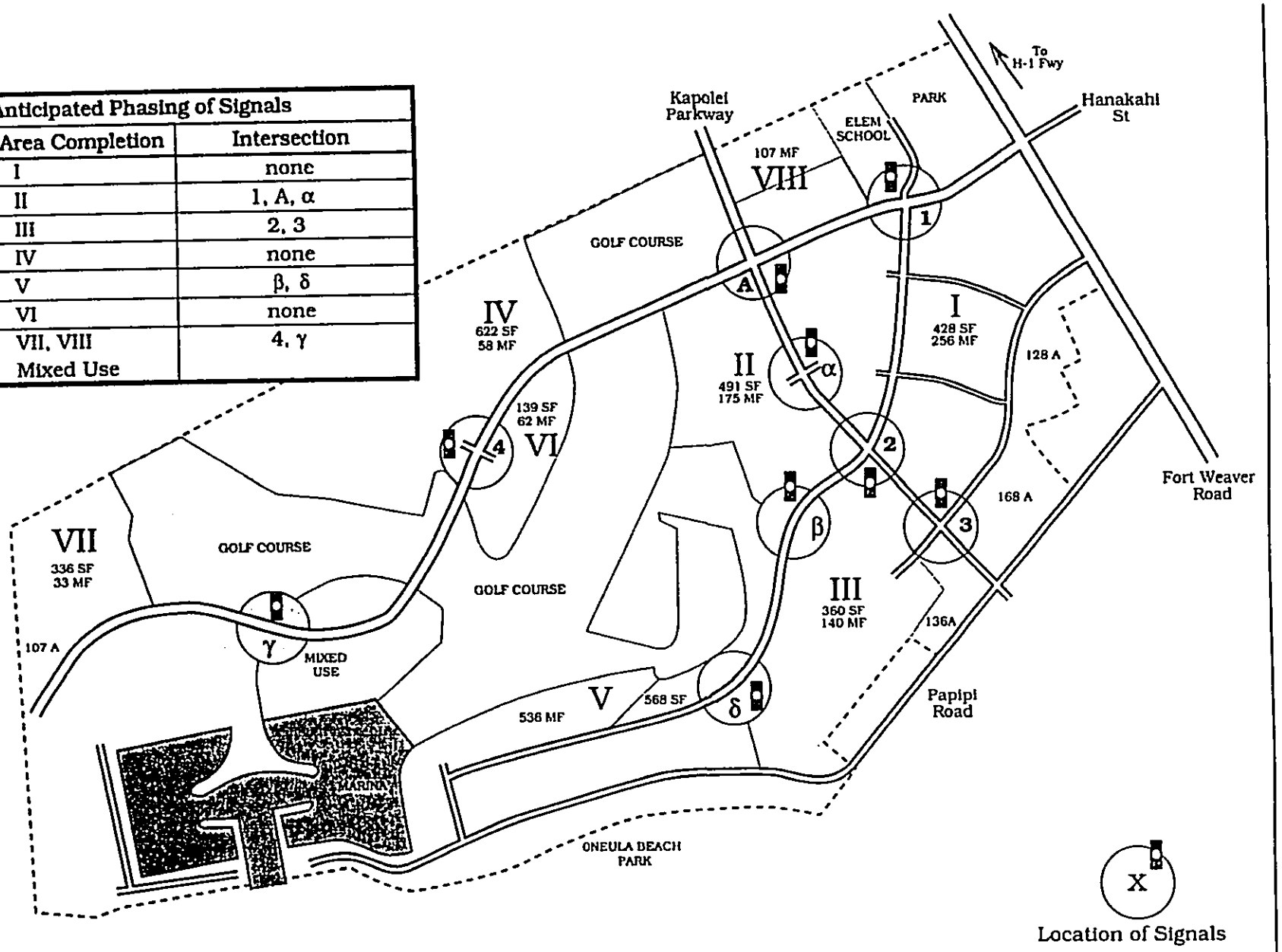
Other Locations of Traffic Signals

Although the peak hour warrant is not satisfied for study intersections 2 and 3 traffic signals should be considered and studied further for the following reasons: 1) only Warrant 11 was addressed (other warrants may be met) 2) other conditions such as traffic safety may warrant signalization and 3) installation of conduits and related devices during roadway construction minimizes future work should traffic signals be required in the future. Figure 5 shows these and additional locations of possible traffic signals which may be required in the future.

Phasing of Traffic Signals

The analysis used in assessing traffic signals was based on ultimate build-out conditions, however, traffic signals may be required earlier as the project is developed. Development of the project generally proceeds in a westerly direction from Fort Weaver Road. Figure 5 shows the

Anticipated Phasing of Signals		
Year	Area Completion	Intersection
2002	I	none
2004	II	1, A, α
2006	III	2, 3
2008	IV	none
2010	V	β, δ
2012	VI	none
2014	VII, VIII Mixed Use	4, γ



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Traffic Signals

Figure 5

Analysis Results

The results of the analysis for the study intersections are shown on Tables 10 through 15. LOS "D" conditions were set as the minimum standards for determining roadway parameters.

Table 10 – Intersection A Analysis (Signalized)		
Movement	**Morning Peak Hour**	**Afternoon Peak Hour**
Northbound LT	**D**	**D**
Northbound TH/RT	**D**	**D**
Southbound LT	**C**	**C**
Southbound TH	**C**	**D**
Southbound RT	**C**	**D**
Eastbound LT	**D**	**D**
Eastbound TH/RT	**C**	**C**
Westbound LT	**D**	**D**
Westbound TH	**C**	**D**
Westbound RT	**C**	**C**
Overall	**D**	**D**

Table 11 – Intersection E Analysis (Unsignalized)		
Movement	**Morning Peak Hour**	**Afternoon Peak Hour**
Northbound Approach	**A**	**A**
Southbound Approach	**A**	**A**
Eastbound LT	**A**	**A**
Westbound LT	**A**	**A**

Table 12 – Intersection 1 Analysis (Signalized)		
Movement	**Morning Peak Hour**	**Afternoon Peak Hour**
Northbound LT/TH/RT	C	C
Northbound RT	C	C
Southbound LT/TH	C	C
Southbound RT	C	C
Eastbound LT	C	C
Eastbound TH	C	B
Eastbound RT	C	B
Westbound LT	C	C
Westbound TH/RT	C	B
Overall	C	C

Although, Warrant 11 was not met for Intersection 2, this intersection was analyzed as signalized.

Table 13 – Intersection 2 Analysis (Signalized)		
Movement	**Morning Peak Hour**	**Afternoon Peak Hour**
Northbound LT/TH	B	A
Northbound RT	B	A
Southbound LT/TH	B	B
Southbound RT	B	A
Eastbound LT	B	B
Eastbound TH/RT	B	B
Westbound LT	B	B
Westbound TH/RT	B	B
Overall	B	B

Table 14 – Intersection 3 Analysis (Unsignalized)		
Movement	**Morning Peak Hour**	**Afternoon Peak Hour**
Northbound LT	**A**	**B**
Southbound LT	**A**	**B**
Eastbound Approach	**A**	**B**
Westbound Approach	**A**	**B**

Table 15 – Intersection 4 Analysis (Signalized)		
Movement	**Morning Peak Hour**	**Afternoon Peak Hour**
Northbound LT/TH	**B**	**B**
Northbound RT	**B**	**B**
Southbound LT	**C**	**C**
Southbound TH/RT	**B**	**B**
Eastbound LT	**A**	**A**
Eastbound TH/RT	**A**	**A**
Westbound LT	**A**	**A**
Westbound TH/RT	**A**	**A**
Overall	**B**	**B**

Storage Lengths

The following discussion describes the analysis to determine the changes in left-turn storage lane requirements for Intersections A, 1 and 4 due to the revised roadways network. Storage lengths were based on traffic forecasts for ultimate buildout conditions. This value does not include the length required for deceleration and taper, which is based on roadway geometrics and not traffic volume. The reader should note that the given lengths are to be used only as a guide as they are based on traffic forecasts and estimated cycle lengths.

The length of left-turn storage lengths can be calculated based on several methods. These methods are briefly described below:

Method 1. This is based on a procedure in the Highway Capacity Manual, which calculates storage lengths based on the traffic volume and signal timing.

Method 2. Uses AASHTO guidelines, which suggest that the lane length should be 1.5 to 2 times the average number of vehicles that would store during one cycle. A Poisson distribution was used for arrival distribution.

Tables 16 to 23 shows the calculated storage lengths for each intersection. In each case, the recommended length is the maximum calculated value.

Intersection A

Table 16. Left-Turn Storage Analysis – Intersection A – Northbound Direction

	Vol.	Cycle	Green Time	Length
AM Peak Hour	245	110 sec	20 sec	**325 ft**
PM Peak Hr	200	110 sec	16 sec	250 ft

Table 17. Left-Turn Storage Analysis – Intersection A – Southbound Direction				
	Vol.	Cycle	Green Time	Length
AM Peak Hour (two LT lanes)	89	110 sec	20 sec	125 ft
PM Peak Hr (two LT lanes)	327	110 sec	26 sec	**275 ft**

Table 18. Left-Turn Storage Analysis – Intersection A – Eastbound Direction				
	Vol.	Cycle	Green Time	Length
AM Peak Hour (two LT lanes)	424	110 sec	17 sec	275 ft
PM Peak Hr (two LT lanes)	374	110 sec	19 sec	**300 ft**

Table 19. Left-Turn Storage Analysis – Intersection A – Westbound Direction				
	Vol.	Cycle	Green Time	Length
AM Peak Hour	10	110 sec	8 sec	75 ft
PM Peak Hr	25	110 sec	10 sec	**100 ft**

Intersection 1

Table 20. Left-Turn Storage Analysis – Intersection 1 – Eastbound Direction				
	Vol.	Cycle	Green Time	Length
AM Peak Hour	85	75 sec	13 sec	**125 ft**
PM Peak Hr	20	75 sec	7 sec	75 ft

Table 21. Left-Turn Storage Analysis – Intersection 1 – Westbound Direction				
	Vol.	Cycle	Green Time	Length
AM Peak Hour	60	75 sec	10 sec	125 ft
PM Peak Hr	120	75 sec	21 sec	**225 ft**

Intersection 4

Table 22. Left-Turn Storage Analysis – Intersection 4 – Eastbound Direction				
	Vol.	Cycle	Green Time	Length
AM Peak Hour	15	60 sec	Permitted phasing	50 ft
PM Peak Hr	50	60 sec	Permitted phasing	**175 ft**

Table 23. Left-Turn Storage Analysis – Intersection 4 – Westbound Direction				
	Vol.	Cycle	Green Time	Length
AM Peak Hour	65	60 sec	Permitted phasing	150 ft
PM Peak Hr	125	60 sec	Permitted phasing	**245 ft**

OCEAN POINTE TRAFFIC MASTER PLAN REVISIONS

The Ocean Pointe Traffic Master Plan revision consists of future roadways and existing intersections to serve the future Ocean Pointe community by 2014. Figure 6 depicts the master plan consisting of recommended laneage at the study intersections. The elements of the revision are discussed in below.

Intersection A

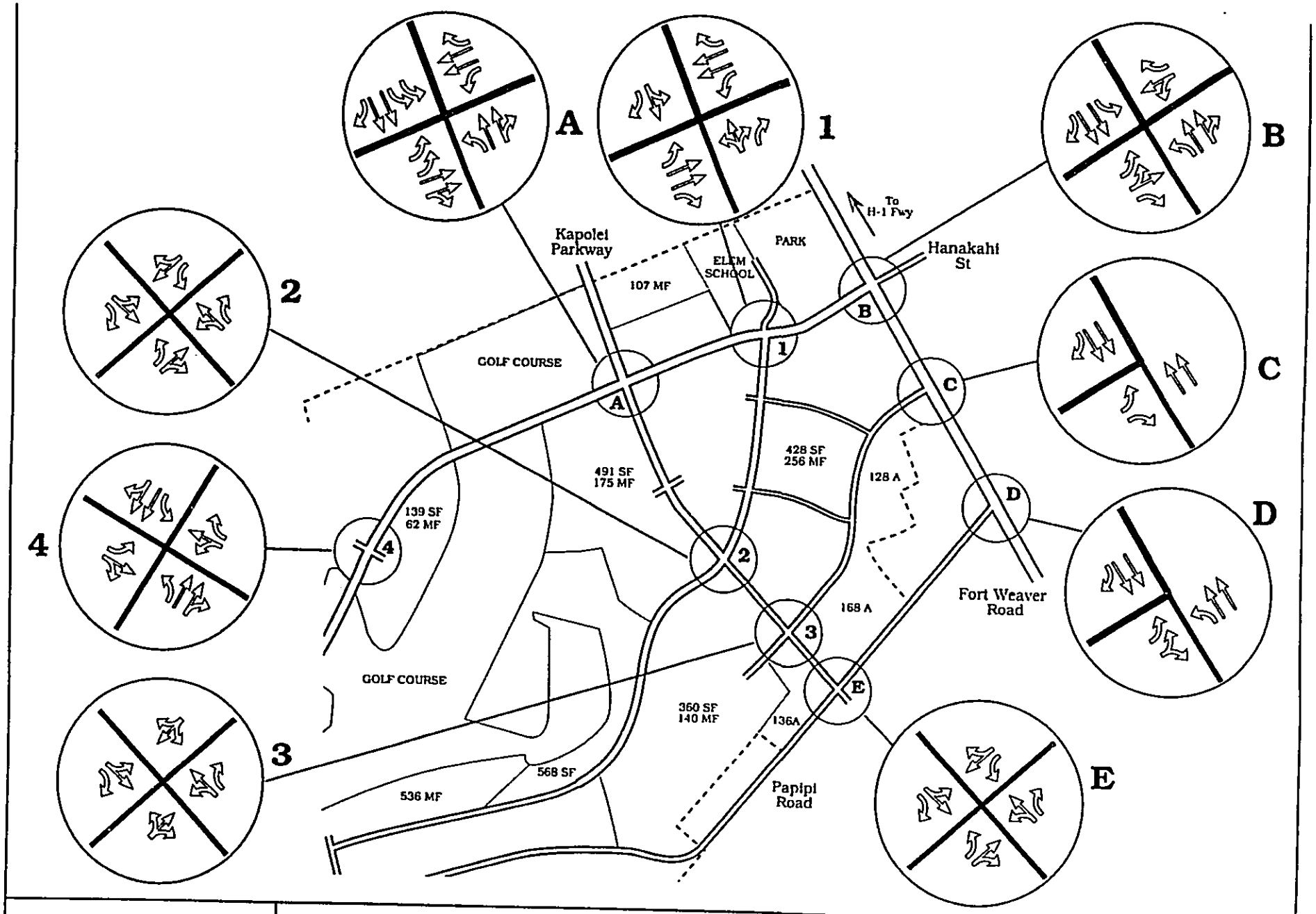
The major revision to the internal roadway network is the elimination of two collector streets from the east-west roadway. This change results in increased traffic along the Kapolei Parkway in the north and southbound directions. Traffic analysis shows that two northbound through lanes are required through Intersection A to accommodate the increase in traffic during the weekday morning peak hour. Similarly, two southbound through lanes are also necessary to accommodate the weekday afternoon peak hour traffic.

Intersection 1

Previously, Intersection 1 was envisioned as a T-intersection. The revised roadway network now has Intersection 1 providing access to an elementary school and park via a southbound approach leg. The recommended revised laneage for this intersection is shown on Figure 6.

Intersections 2, 3, 4 and E

Laneage recommendations for these intersections are shown on Figure 6.



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Ewa Marina Traffic Master Plan

Figure 6

APPENDIX A

LEVEL-OF-SERVICE DEFINITIONS

FOR

SIGNALIZED INTERSECTIONS

AND

UNSIGNALIZED INTERSECTIONS

REFERENCE: Highway Capacity Manual (Special Report 209, 1997)

LEVEL-OF-SERVICE FOR SIGNALIZED INTERSECTIONS

Level-of-service for signalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption and lost travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during ideal conditions: in the absence of any incidents and when there are no other vehicles on the road. For signalized intersections, only the portion of total delay attributed to the control facility is quantified. This delay is called control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay and final acceleration delay.

Specifically, the Level-of-Service (LOS) criteria are stated in terms of the average control delay, typically for a 15-minute analysis period. The table to the right gives the LOS criteria.

LOS	Control Delay Per Vehicle (seconds)
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

Level-of-service A describes operations with very low control delay up to 10 seconds per vehicle. This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

Level-of-service B describes operations with control delay greater than 10 and up to 20 seconds per vehicle. This level generally occurs with good

progression, short cycle lengths or both. More vehicles stop than for LOS A, causing higher levels of average delay.

Level-of-service C describes operations with control delay greater than 20 and up to 35 seconds per vehicle. These higher delays may result from fair progression, longer cycle lengths or both. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.

Level-of-service D describes operations with control delay greater than 35 and up to 55 seconds per vehicle. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths or a high v/c ratios (volume of cars to capacity). Individual cycle failures are noticeable.

Level-of-service E describes operations with control delay greater than 55 and up to 80 seconds per vehicle. This level is considered by many to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths and high v/c ratios. Individual cycle failures are frequent occurrences.

Level-of-service F describes operations with delay in excess of 80 seconds per vehicle. This level, considered to be unacceptable to most drivers, often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

LEVEL-OF-SERVICE FOR UNSIGNALIZED INTERSECTIONS

The Level-of-Service (LOS) for an unsignalized intersection is determined by the computed or measured control delay and is defined for each minor movement. LOS is not defined for the intersection as whole. LOS criteria are given in the table to the right. Control delay includes initial deceleration delay, queue move-up time, stopped delay and final acceleration delay.

LOS	Control Delay Per Vehicle (seconds)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

The proposed LOS criteria are somewhat different from the criteria for signalized intersections. The primary reason for this difference is that drivers expect different levels of performance from different kinds of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an unsignalized intersection. Additionally, several driver behavior considerations combine to make delays at signalized intersections less onerous than at unsignalized intersections. For example, drivers at signalized intersections are able to relax during the red interval, whereas drivers on the minor approaches to unsignalized intersections must remain attentive to the task of identifying acceptable gaps and vehicle conflicts. Also, there is often much more variability in the amount of delay experienced by individual drivers at unsignalized than signalized intersections. For these reasons, it is considered that the control delay threshold for any given LOS is less for an unsignalized intersections than it would be for a signalized intersection.

EXHIBIT L

Location Of Ewa Beach Fire Station #24
At Ocean Pointe

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
3375 KOAPAKA STREET, SUITE H425
HONOLULU, HAWAII 96819-1868

JEREMY HARRIS
MAYOR

ANTHONY J. LOPEZ, JR.
FIRE CHIEF

ATTILIO K. LEONARDI
FIRE DEPUTY CHIEF

May 21, 1997

TO: PATRICK T. ONISHI, CHIEF PLANNING OFFICER
DEPARTMENT OF PLANNING

ATTN: GARY H. OKINO
COMMUNITY AND FUNCTIONAL PLANNING DIVISION

FROM: ATTILIO K. LEONARDI, *ACTING FIRE CHIEF*

SUBJECT: TENTATIVE MUTUAL AGREEMENT BETWEEN THE HONOLULU FIRE DEPARTMENT AND HASEKO (EWA), INC. REGARDING THE EWA MARINA UNILATERAL AGREEMENT 93-94, CONDITION 28, FIRE STATION RELOCATION

At a meeting on March 12, 1997 between the above-named parties, a tentative mutual agreement was reached between the Honolulu Fire Department and Haseko (Ewa), Inc. concerning the relocation of the proposed one (1) acre fire station site pursuant to our UA 93-94, Condition 28.

The following attachments are provided for your information:

1) Haseko (Ewa) Inc's request for concurrence

2) Applicable Revised Ordinance

3) Site Plan showing the relocation

We would appreciate receiving any comments or recommendations you may have by June 6, 1997.

Should you have any questions, please call Battalion Chief John Coe, of our Administrative Services Bureau, at 831-7775.

Attilio K Leonardi

ATTILIO K. LEONARDI
Acting Fire Chief

AKL/FTO:ay

Attachments

HASEKO

HASEKO (Ewa), Inc.

820 Mililani Street, Suite 810, Honolulu, Hawaii 96813-2938
Phone (808) 599-1144 Fax (808) 545-5590

April 23, 1997

Deputy Fire Chief Attilio Leonardi
Honolulu Fire Department
3375 Koapaka Street, Suite H425
Honolulu, HI 96819

RE: Ewa Marina Unilateral Agreement 93-94, Condition 28, Fire Station Location

Dear Deputy Fire Chief Leonardi:

As discussed at our meeting on March 12, 1997, I am providing you with the location for the proposed 1 acre fire station site pursuant to our UA 93-94 Condition 28. The location for the site as determined at the meeting will provide for greater safety and improved access while still being consistent with the criteria for locating symbols on the Public Facilities map and therefore would not appear to require modification to the current maps.

It was mutually agreed that the updated location as shown on the attached exhibit would provide for a) greater protection from potential flooding since it would be elevated above the existing grades as opposed to being located at the same level as Fort Weaver Road which is susceptible to drainage problems, b) better access to the future Kapolei Parkway as well as to the existing Ewa Beach Neighborhood, c) a preferred location immediately adjacent to a 20-acre district park to be dedicated to the City & County, and d) driveway access to a county road which would be safer than attempting to cross Fort Weaver Road at an unsignalized intersection.

Based on our discussions and agreement that the location as shown on the attached exhibit is the preferred location, we will incorporate this location into our master plan and update DLU accordingly. In addition, we would like your written concurrence that you also agree that this location would better address your requirements. If I may be of any further assistance or if you have any questions, please feel free to contact me at 536-3771 ext. 243.

Sincerely,

Paul Jordan

PJ:jn

Attachment

Sec. 24-1.7 Identification of public thoroughfares, highways and streets.

The existing system of public thoroughfares, highways and streets is shown on the development plan land use map. Except for minor streets, planned improvements to this system are shown on the public facilities map. Planned improvements include exclusive right-of-way for at-grade and grade-separated public transit. The descriptions of the planned facilities are not to be interpreted as precise descriptions or exact locations, and the nature and location of these facility systems are to be interpreted flexibly to the degree necessary to ensure reasonable implementation. Pursuant to Sections 6-1102(a), 6-1102(c) and 6-1102(e) of the charter and HRS Chapter 91, the director of transportation services, with the assistance of the chief engineer, shall establish and maintain future right-of-way widths and setback lines for planned street and transit improvements shown on the public facilities map, as well as for planned improvements to minor streets.

"Major street" means a freeway, expressway, arterial, or collector street, whether publicly or privately owned, which is primarily intended to serve through traffic or the circulation of traffic between different communities and/or portions of a community. In the case of arterial and collector streets, access to abutting properties may also be permitted.

"Minor street" means a street which is primarily intended to provide access to abutting property and serve local traffic to and from these properties.

Bus routes may be established, modified or withdrawn as required without amendment to the development plans.

The chief engineer, with the assistance of the director of the department of transportation services, shall promulgate standards governing roadways and right-of-way widths for new developments.

Street improvements shown on the development plan public facilities map shall be implemented in such a way as to effectuate a system of bikeways. The design of the system of bikeways is to be guided by Bikeplan Hawaii, dated March, 1977, and the construction shall be implemented pursuant to bikeway standards to be established by the department of transportation services.

Vacant land beneath elevated highways may be zoned and used for other than highway purposes. Where rezoning is required, the selection of zoning district classifications shall be compatible with the uses permitted on abutting lands, as designated on the development plan land use map, and with the prevailing noise levels, air quality, and other related environmental conditions. (Sec. 32-1.7, R.O. 1978 (1987 Supp. to 1983 Ed.))

Sec. 24-1.8 Identification of public buildings, public or private facilities for utilities, terminals and drainage.

(a) Both publicly funded and privately funded facilities are shown on the map. The general time frame (within six years, beyond six years) for land acquisition and/or construction is also shown for publicly funded facilities. The nature and location of these facilities are to be interpreted flexibly to the degree necessary to ensure reasonable implementation.

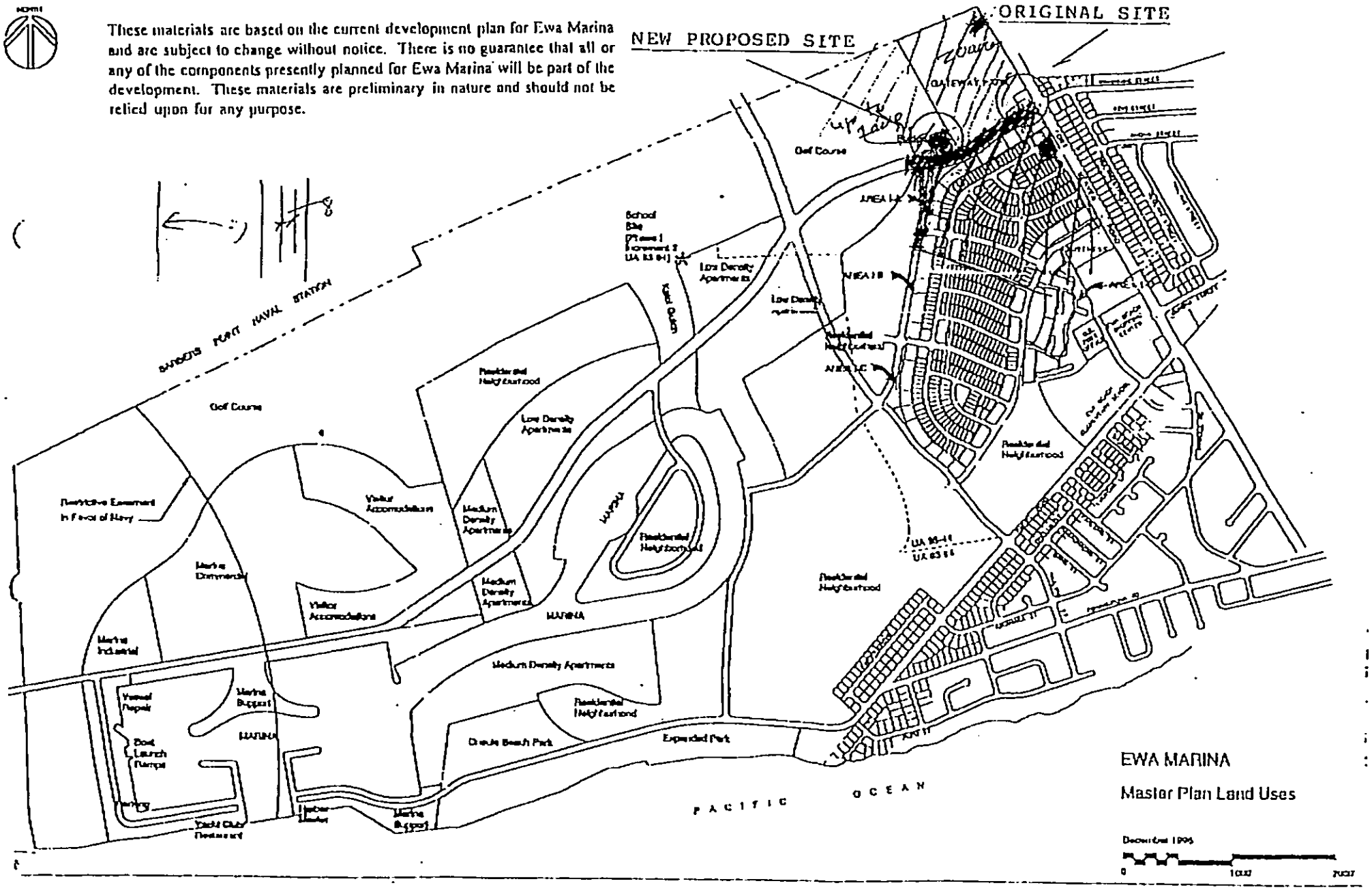
(b) Sites occupied by existing facilities are shown on the development plan and use map. Where appropriate, facilities and operations shall be screened from incompatible uses by means of buffer areas or landscaping.

(1) Public Buildings. Public buildings are those owned by the City and County of Honolulu, the State of Hawaii, and the federal government, except for buildings on military bases. Public buildings that generate large amounts of traffic shall, whenever possible, be centrally located in their service area and on sites that are easily accessible to public and private transportation. The design of public buildings shall strive for energy efficiency and, where feasible, make use of natural ventilation and alternate energy sources such as solar and wind. Life cycle costs shall be used in the selection of operating equipment.

(2) Public or Private Facilities for Utilities. Energy efficiency, both in terms of facility operating and capital costs and collection and/or distribution costs, shall be given priority consideration in the selection of sites for public and private utilities.

(A) Wastewater Collection and Disposal System. The wastewater system consists of treatment facilities, ocean outfalls, force mains, interceptors, trunk sewers, and pump stations. Collection sewers which provide service to individual properties are not shown on the public facilities map. Adequate screening and/or a buffer zone of compatible uses shall be provided around wastewater treatment facilities.

These materials are based on the current development plan for Ewa Marina and are subject to change without notice. There is no guarantee that all or any of the components presently planned for Ewa Marina will be part of the development. These materials are preliminary in nature and should not be relied upon for any purpose.



APPENDIX A

U.S. Department of Transportation
United States Coast Guard

Fourteenth Coast Guard District
Prince Jonah Kuhio Kalanianaole Federal Building

300 Ala Moana Blvd., Suite 9-216
Honolulu, Hawaii 96850-4982
Staff Symbol: dl
Phone: (808) 541-2108
FAX: (808) 541-2101

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DEPT OF PLANNING AND PERMITTING
CITY & COUNTY OF HONOLULU

11011
18 May 2001

City and County of Honolulu
Department of Planning and Permitting
650 South King Street
Honolulu, Hawaii 96813

Subject: Chapter 343, HRS Draft Supplemental Environmental Assessment (EA), Haseko, Ocean Pointe, Ewa

Dear Sir or Madam:

This is in response to your letter 2001/EC-E (RJM) of April 20, 2001, soliciting comments on the Ocean Pointe development Environmental Assessment (EA). Although the Coast Guard has specific comments about the EA, I would first emphasize that the Coast Guard's primary concern with the development of the Haseko property adjacent to Kalaeloa Airport is with regard to the proximity of the proposed residential development to an existing flight path. Additionally, the Coast Guard disagrees with the EA drafter's conclusion that the United States Government's easement affecting the proposed development has terminated.

For your background with regard to the status of the U.S. Government easement affecting the Haseko property, Haseko applied to the State Land Use Commission, requesting that it remove a restrictive condition prohibiting residential development. On February 3, 2001, the then acting Fourteenth Coast Guard District Commander wrote to the State Land Use Commission, advising the Commission that the Coast Guard opposed removal of the Commission's restrictive condition, and that it viewed the Government's restrictive easement No. 2262 to remain in effect, thus burdening portions of the Ocean Pointe development. Specifically, the letter noted that Lots 237A and 2695 both remained subject to the easement since the easement had not been affirmatively released by the United States. Moreover, the letter pointed out that the Coast Guard continues to use the airfield at Kalaeloa Airport as a military air station, as it has since 1949. Coast Guard Air Station Barbers Point remains the only Coast Guard military air station within the Central Pacific, flying nearly all of its missions from the runways at Kalaeloa. As such, the Coast Guard continues to use Kalaeloa as a military air station and disagrees with the legal conclusion raised in the EA that the easement in favor of the United States has "extinguished."

In testimony before the State Land Use Commission on February 16, 2001, the Coast Guard reiterated its concern that the petitioner, Haseko, Inc., in seeking to remove a State-imposed condition on its Ocean Pointe property, appeared to be poised to develop the burdened lots in

violation of the terms of the Government's existing easement. In response to the Coast Guard's testimony as well as to letters from the State Office of Planning and the Navy Patrol and Reconnaissance Force, the petitioner, Haseko, withdrew its request to remove the land use condition. The EA, in drawing its conclusion that the easement has been extinguished, ignored both the Coast Guard's prior testimony and Haseko's withdrawal of its land use petition.

The Coast Guard further testified at the February 16th hearing that the only currently lighted runway available at Kalaeloa and the only runway available for practicing instrument approaches in prevailing winds at Kalaeloa was runway four right (4R). More importantly, it noted that the right-hand pattern in and out of runway 4R was the only traffic pattern available for practicing touch and go training that did not require directly over-flying noise sensitive areas. The Coast Guard's concern over residential development near or under the flight paths at Kalaeloa is that residential development may prove to be incompatible with flight operations due to noise or safety concerns. Operating restrictions, such as those imposed at other airports nation-wide, pose a threat to the Coast Guard's ability to train and conduct its full spectrum of operations, including, but not limited to, search and rescue, law enforcement and military missions. Surprisingly, the EA dedicated only a single paragraph to potential noise impacts from aircraft and was silent as to safety issues. The Coast Guard believes that noise and safety concerns should be fully developed within any environmental assessment of a residential development adjacent to an existing airfield, and especially with regard to an airfield supporting around-the-clock public safety, law enforcement and military operations.

For the above reasons, the Coast Guard urges close scrutiny of the environmental assessment with regard to residential noise and safety. Please contact Commander Dennis Hoffman of my staff at the number above if you have any questions or comments.

Sincerely,

T. D. YEAROUT
Captain, United States Coast Guard
Commander, Fourteenth Coast Guard District
Acting

HASEKO

HASEKO (Ewa), Inc.

June 14, 2001

T. D. Yearout
Captain, United States Coast Guard
Commander, Fourteenth Coast Guard District
Acting
300 Ala Moana Boulevard, Suite 9-216
Honolulu, Hawaii 96850-4982

Re: Ocean Pointe Master Plan (Revised);
Draft Supplemental Environmental Assessment

Dear Captain Yearout:

The Department of Planning and Permitting has forwarded to us your letter of May 16, 2001, commenting on our draft Supplemental Environmental Assessment for the reconfiguration of the Ocean Pointe master plan. We appreciate your taking the time to comment.

As we stated previously in the proceedings before the Land Use Commission, it is HASEKO's position that the restrictive easement over the western portion of Ocean Pointe was terminated by its own terms when Barbers Point Naval Air Station was closed in 1999. The withdrawal of HASEKO's motion before the Land Use Commission was not a concession of that position. Instead, we withdrew the motion to provide us with time to further explore the matter. Please know that we are still committed to exploring this matter and are prepared to meet with you or your staff to discuss it further.

We have reviewed various environmental and other disclosure documents related to the closure of Barbers Point Naval Air Station and its reuse as the State of Hawaii's Kalaeloa Airport. Based on those documents (which consider the Coast Guard's operations), it is our understanding that the current and foreseeable operations at the Kalaeloa Airport will not have significant adverse noise or safety affects on most neighboring properties, including Ocean Pointe. Nevertheless, the reconfiguration of the Ocean Pointe Master Plan does not propose any uses within the former restrictive easement area that would be restricted had the restrictive easement still been in place.

Your letter, along with this response, will be reproduced in the forthcoming Final

820 Mililani Street, Suite 820 • Honolulu, Hawaii 96813-2938 • Phone (808) 536-3771 • Fax (808) 538-7654

Supplemental Environmental Assessment. If you have any further questions or comments, please feel free to call me at 536-3771, ext. 225.

Very Truly Yours,

HASEKO (EWA), Inc.

Nelson W. G. Lee
Executive Vice President

cc: Mr. Randall K. Fujiki, Department of Planning and Permitting
Oshima Chun Fong and Chung, LLP

DEPARTMENT OF THE NAVY
COMMANDER, PATROL AND RECONNAISSANCE FORCE
U. S. PACIFIC FLEET
BOX 64000
MARINE CORPS BASE HAWAII
KANEOHE BAY, HI 96863-4000

5800
Ser N01J/398
21 May 01

City and County of Honolulu
Department of Planning and Permitting
650 South King Street
Honolulu, Hawaii 96813

Subj: Chapter 343, HRS Draft Supplemental Environmental Assessment (EA), Ocean Pointe, Ewa

Dear Sir or Madame:

We received notice from the Coast Guard on May 18, 2001, of your letter 2001/EC-E(RJM) of April 20, 2001, soliciting comments on subject environmental assessment.

As a result, the enclosure to this letter is submitted for your review and consideration.

I am the point of contact for this matter, and I may be reached at 257-0326.

Sincerely,

K D Phillips

K. D. PHILLIPS
Lieutenant
Judge Advocate General's Corps
United States Naval Reserves
By direction of the Commander,
Patrol and Reconnaissance Force,
U.S. Pacific Fleet

Encl:
CPRFP ltr 5800 Ser N01J/136 of 13 Feb 01

'01 MAY 23 AM 11 12
CITY & COUNTY OF HONOLULU

DEPARTMENT OF THE NAVY
COMMANDER, PATROL AND RECONNAISSANCE FORCE
U. S. PACIFIC FLEET
BOX 64000
MARINE CORPS BASE HAWAII
KANEOHE BAY, HI 96863-4000

5800
Ser N01J/136
February 13, 2001

Mr. Russell Kumabe
Land Use Commission
State of Hawaii
P.O. Box 2359
Honolulu, Hawaii 96804-2359

Subj: Docket No. A83-558, Haseko Motion for Relief from Condition No. 7 of Decision and Order Entered on September 7, 1984, 2-16-01 Agenda Item #II.2.B

Dear Mr. Kumabe:

HASEKO (Ewa) Inc. and HASEKO Homes, Inc. ("Haseko") served the above motion upon the Navy. The Navy wishes to present the following information to the Land Use Commission for the Commission's use in considering Haseko's motion.

Aircraft from Patrol and Reconnaissance Force, U.S. Pacific Fleet (CPRFP), stationed at Marine Corps Base Hawaii, Kaneohe Bay, continue to use Kalaeloa Airport (formerly Naval Air Station Barbers Point), and use is expected to continue into the indeterminate future. P-3 Orion, Gulfstream IV, and H-60 aircraft use Kalaeloa Airport for training purposes.

In using Kalaeloa Airport, Navy aircraft normally take off from Runway 4R, and their flight path when taking off from Runway 4R places them over the area referenced by Condition No. 7 of the Commission's September 21, 1984 Decision and Order in this matter.

Point of contact for this matter is the CPRFP Safety/ NATOPS, Commander H. H. All, 257-0509 ext. 8406, or the CPRFP Staff Judge Advocate, Lieutenant K. D. Phillips, 257-0326.

Sincerely,

T. K. HOHL
Captain, U.S. Navy
Chief of Staff

'01 MAY 23 AM 11 13
CITY & COUNTY OF HONOLULU

HASEKO

HASEKO (Ewa), Inc.

June 14, 2001

Lieutenant K. D. Phillips
Judge Advocate General's Corps
United States Naval Reserves
P. O. Box 64000
Marine Corps Base Hawaii
Kaneohe Bay, Hawaii 96863-4000

Re: Ocean Pointe Master Plan (Revised);
Draft Supplemental Environmental Assessment

Dear Lieutenant Phillips:

Thank you for letter of May 21, 2001 commenting on our Draft Supplemental Environmental Assessment ("DSEA") for the reconfiguration of the Ocean Pointe Master Plan. We appreciate your taking the time to comment.

HASEKO appreciates receiving the information of the Navy's operations at the Kalaeloa Airport. We will consider this information in our planning efforts

Your letter, along with this response, will be reproduced in the forthcoming Final Supplemental Environmental Assessment. If you have any further questions or comments, please feel free to call me at 536-3771, ext. 225.

Very Truly Yours,

HASEKO (EWA), Inc.

Nelson W. G. Lee
Executive Vice President

cc: Mr. Randall K. Fujiki, Department of Planning and Permitting
Oshima Chun Fong and Chung, LLP

820 Mililani Street, Suite 820 • Honolulu, Hawaii 96813-2938 • Phone (808) 536-3771 • Fax (808) 538-7652

DEPARTMENT OF THE ARMY
U S ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440

REPLY TO ATTENTION OF

May 22, 2001

'01 MAY 24 PM 3 22
CITY & COUNTY OF HONOLULU

Civil Works Technical Branch

Mr. Bob McGraw
Department of Planning and Permitting
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. McGraw:

Thank you for the opportunity to review and comment on the Draft Supplemental Environmental Assessment (DSEA) for the Ocean Pointe Project, Ewa, Oahu (TMKs 9-1-12: 2, 5, 8-17, 23, 39-41, and 45-47). The following comments are provided in accordance with Corps of Engineers authorities to provide flood hazard information and to issue Department of the Army (DA) permits.

a. A DA permit for the original project has been processed. Our Regulatory Branch is currently evaluating the modifications and will provide their response under separate cover. For further information, please contact Mr. Farley Watanabe at (808) 438-7701.

b. The flood hazard information provided on pages 9-11 of the DSEA is correct.

Should you require additional information, please contact Ms. Jessie Dobinchick of my staff at (808) 438-8876.

Sincerely,

for James Pennaz, P.E.
Chief, Civil Works
Technical Branch

HASEKO
HASEKO (Ewa), Inc.

June 14, 2001

James Pennaz, P.E.
Chief, Civil Works
Technical Branch
Department of the Army
U.S. Army Engineer District, Honolulu
Fort Shafter, Hawaii 96858-5440

Re: Ocean Pointe Master Plan (Revised);
Draft Supplemental Environmental Assessment

Dear Mr. Pennaz:

The Department of Planning and Permitting has forwarded to us your letter dated May 22, 2001, commenting on our Draft Supplemental Environmental Assessment ("DSEA") for the reconfiguration of the Ocean Pointe Master Plan. We appreciate your comment on the flood hazards affecting the Project.

Your letter, along with this response, will be reproduced in the forthcoming Final Supplemental Environmental Assessment. If you have any further questions or comments, please feel free to call me at 536-3771, ext. 225.

Very Truly Yours,

HASEKO (EWA), Inc.

Nelson W. G. Lee
Executive Vice President

cc: Mr. Randall K. Fujiki, Department of Planning and Permitting
Oshima Chun Fong and Chung, LLP

820 Mililani Street, Suite 820 • Honolulu, Hawaii 96813-2938 • Phone (808) 536-3771 • Fax (808) 538-7654

BENJAMIN J. CAYETANO
GOVERNOR

'01 MAY 15 P1 12:53

STATE OF HAWAII
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

HERMAN M. ADAMS, CPA
Deputy Superintendent

Paul G. LeMahieu, Ph.D.
Superintendent

May 8, 2001

Mr. Randall K. Fujiki, AIA, Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street
Honolulu, Hawai'i 96813

Dear Mr. Fujiki:

Subject: Ocean Pointe Draft Supplemental Environmental Assessment

Based on the applicant's representation that the total number of residential units will be limited to the 4,850 units already approved, the Department of Education has no comment on the subject project.

If you have any questions, please call Mr. Sanford Beppu at 733-4862.

Thank you.

Very truly yours,

Paul G. LeMahieu, Ph.D.
Superintendent of Education

PLeM:hy

cc: P. Yoshioka, DAS

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

HASEKO

HASEKO (Ewa), Inc.

June 14, 2001

Paul G. LeMahieu, Ph.D.
Superintendent of Education
Department of Education
P.O. Box 2360
Honolulu, Hawaii 96804

Re: Ocean Pointe Master Plan (Revised);
Draft Supplemental Environmental Assessment

Dear Dr. LeMahieu:

The Department of Planning and Permitting has forwarded to us your letter of May 8, 2001, expressing the Department of Education's view that it has no comment on the reconfiguration of the Ocean Pointe Master Plan. We appreciate your taking the time to comment. Also as you point out, the reconfigured Ocean Pointe Master Plan will continue to be limited to the 4,850 residential units already approved.

Your letter, along with this response, will be reproduced in the forthcoming Final Supplemental Environmental Assessment. If you have any further questions or comments, please feel free to call me at 536-3771, ext. 225.

Very Truly Yours,

HASEKO (EWA), Inc.

Nelson W. G. Lee
Executive Vice President

cc: Mr. Randall K. Fujiki, Department of Planning and Permitting
Oshima Chun Fong and Chung, LLP

820 Mililani Street, Suite 820 • Honolulu, Hawaii 96813-2938 • Phone (808) 536-3771 • Fax (808) 538-7654

DISABILITY AND COMMUNICATION ACCESS BOARD
919 Ala Moana Boulevard, Room 101 • Honolulu, Hawaii 96814
Ph (808) 586-8121 (V/TDD) • Fax (808) 586-8129

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CITY & COUNTY OF HONOLULU

May 22, 2001

Mr. Nelson Lee
Executive Vice-President
HASEKO (EWA), Inc.
820 Mililani Street
Suite 810
Honolulu, Hi 96813

Subject: Ocean Pointe - Master Plan (Revised)
Draft Supplemental Environmental Assessment dated March 2001
TMK: 9-1-012 Parcels 2, 5, 8-17, 23, 39-41, 45-47 (por)
Ewa Development Plan
Project Location: Ewa, Oahu, Hawaii
Acreage: Approximately 450 acres currently vacant
Zoning: P-2 Preservation, R-5 Residential, A-1 Low Density Apartment
Medium Density Apartment, B-2 Community Business District

Dear Mr. Lee,

The Draft Supplemental Environmental Assessment for Ocean Pointe Master Plan (Revised) has been submitted to our office for comment. The purpose for our request to review the revised master plan at this time is to ensure that the overall master plan will take into account the accessibility requirements for persons with disabilities during the programming, schematic, and design development phases of this project.

The draft indicated the purpose of and need for this revised plan is to:

- reduce the size of the proposed marina that will have docks, piers and other associated facilities in the future.
- provide public access to water recreation including a boat launch, public boat slips, and canoe paddling.
- develop a shorefront community meeting facility.
- provide continuing shoreline access with a pedestrian route around the marina.
- dedicate 9.4 acres to the Oneuela Beach Park along the beach front.
- modify the proposed infrastructure of the original project such as linking new internal roadways, bus stops, and pedestrian routes to public facilities such as a new fire station and public school facilities to the outside roadway systems and other public facilities.
- modify the proposed golf course.
- dedicate a twenty-acre district park with development of park facilities.

We offer the following comments:

1. Portions of this project, particularly those which encompass the outdoor public right-of-way and the outdoor recreational environment, fall within the scope of the Americans with Disabilities Act (ADA). Title II of the ADA, covering state and local governments, and §103-50 Hawaii Revised Statutes (HRS) may apply if those areas are within the jurisdiction of state or local government. Although the technical requirements are nearly identical for new construction and alteration, there may be areas of difference. Also §103-50 under state law contains a requirement for a review process by the Disability and Communication Access Board.

2. To ensure that accessibility is addressed and also for your reference, the publications listed below from the U.S. Architectural and Transportation Barriers Compliance Board (1-800-USA-ABLE) can be of great value in addressing accessibility concerns.

   A. "Americans with Disabilities Act Accessibility Guidelines" (ADAAG); Sections 1-10, published September 1994.

   B. "Accessible Rights-of-Way: Sidewalks-Street Crossings-Other Pedestrian Facilities, A Design Guide" published November 1999.

   C. "Building a True Community – Final Report" Public Rights-of-Way Access Advisory Committee published January 10, 2001.

   D. "Americans with Disabilities Act Accessibility Guidelines, Recreational Facilities, Proposed Rulemaking" published July 9, 1999.

   E. "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities, Play Areas, Proposed Rule" published October 18, 2000.

   F. "Accessibility Guidelines for Outdoor Developed Areas" Regulatory Negotiation Committee Final Report published September 1999

   Items "B, C, D, E, and F" currently are recommendations only.

3. We suggest you include a general statement on access in the master plan as follows:

   "All buildings, facilities, and sites shall be designed to meet the Americans with Disabilities Act Accessibility Guidelines. Buildings, facilities, and sites under state or local jurisdiction or constructed with state or local funds shall also meet the requirements of §103-50 Hawaii Revised Statutes (HRS). Buildings, facilities, and sites shall incorporate the best design practices noted in the recommendations from the U. S. Architectural and Transportation Barriers Compliance Board's "Accessible Rights-of-Way: Sidewalks-Street Crossings-Other Pedestrian Facilities: A Design Guide" published November 1999; "Building a True Community Final Report", Public Rights-of-Way Access Committee, published January 10, 2001; "Americans with Disabilities Act Accessibility Guidelines, Recreational Facilities, Proposed

Rulemaking" published July 9, 1999; "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities, Play Areas, Proposed Rule" published October 18, 2000; and "Accessibility Guidelines for Outdoor Developed Areas" Regulatory Negotiation Committee Final Report published September 1999, or when applicable, other more current documents providing guidelines for persons with disabilities."

The above reflects staff technical assistance comments. They do not reflect our Board's approval or disapproval of the plan, per se. There are no further comments to offer at this time. Thank you for giving us this opportunity to provide comment.

Should you have any questions or concerns, please feel free to contact Mr. Gary L. Batcheller, Facility Access Specialist, or Mr. Ben Gorospe, Facility Access Coordinator, at 586-8121.

Sincerely,

Francine Wai

FRANCINE WAI
Executive Director

cc: ✓ Mr. Robert McGraw
City and County of Honolulu
Department of Planning and Permitting

HASEKO

HASEKO (Ewa), Inc.

June 14, 2001

Ms. Francine Wai
Executive Director
Disability and Communication Access Board
919 Ala Moana Boulevard, Room 101
Honolulu, Hawaii 96814

Re: Ocean Pointe Master Plan (Revised);
Draft Supplemental Environmental Assessment

Dear Ms. Wai:

Thank you for letter of May 22, 2001 commenting on our Draft Supplemental Environmental Assessment ("DSEA") for the reconfiguration of the Ocean Pointe Master Plan. We appreciate your taking the time to comment.

HASEKO recognizes the importance of taking into account the accessibility requirements for persons with disabilities. We appreciate the accessibility information you provided and will consider it in Ocean Pointe's development.

Your letter, along with this response, will be reproduced in the forthcoming Final Supplemental Environmental Assessment. If you have any further questions or comments, please feel free to call me at 536-3771, ext. 225.

Very Truly Yours,

HASEKO (EWA), Inc.

Nelson W. G. Lee
Executive Vice President

cc: Mr. Randall K. Fujiki, Department of Planning and Permitting
Oshima Chun Fong and Chung, LLP

820 Mililani Street, Suite 820 • Honolulu, Hawaii 96813-2938 • Phone (808) 536-3771 • Fax (808) 538-7654

BENJAMIN J. CAYETANO
GOVERNOR

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

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CITY & COUNTY OF HONOLULU

May 15, 2001

Mr. Nelson W. G. Lee
Haseko ('Ewa), Inc
820 Mililani Street, Suite 820
Honolulu, Hawai'i 96813

The Honourable Randall Fujiki, Director
Department of Planning and Permitting
650 South King Street
Honolulu, Hawai'i 96813

Mr. Wayne Costa, Jr.
Oshima Chun Fong & Chung, LLP
841 Bishop Street, Suite 400
Honolulu, Hawai'i 96813

Dear Messrs. Lee, Fujiki and Costa:

The Office of Environmental Quality Control has reviewed the draft supplemental environmental assessment entitled "Ocean Pointe Master Plan (Revised)" in the 'Ewa district, tax map key 9-1-012, parcels 2, 5, 8 through 17, 23, 39 through 41, and 45 through a portion of 47, in support of applicant Haseko's request before the Department of Planning and Permitting for a zone change to accomodate the reduction in size of the proposed marina, relocation and reconfiguration of the golf course, and the reconfiguration of residential and commercial areas. We submit the following comments.

1. Cultural Impact Requirements of Act 50, SLH 2000: Although the DSEA discusses the litigation related to the contested case proceedings before the Board of Land and Natural Resources and the Commission on Water Resources Management on page 23, Act 50 of the Session Laws of Hawai'i for 2000 now requires that projects subject to Chapter 343, Hawai'i Revised Statutes assess the impact of project on cultural practices. Although the document states that "decision makers determine that the project will not have a significant adverse impact on these gathering practices" the analysis underlying their decision needs to be disclosed. A copy of Act 50, and the environmental council's guidance on assessing cultural impacts is enclosed for your use. We would recommend that you contact Mr. Stephen Kubota of the 'Ahupua'a Action Alliance to identify cultural contacts in the 'Ewa area.

2. Sustainable Building Design: Please discuss what sustainable building design features will be incorporated into the architecture for the project. A copy of the environmental council's guidance is enclosed.

Thank you for the opportunity to comment. If you have any questions, please call Mr. Leslie Segundo of my staff at (808) 586-4185.

Sincerely,

GENEVIEVE SALMONSON
Director of Environmental Quality Control
Enclosures

HASEKO

HASEKO (Ewa), Inc.

June 14, 2001

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

Re: Ocean Pointe Master Plan (Revised);
<u>Draft Supplemental Environmental Assessment</u>

Dear Ms. Salmonson:

Thank you for letter of May 15, 2001 commenting on our Draft Supplemental Environmental Assessment ("DSEA") for the reconfiguration of the Ocean Pointe Master Plan. We appreciate your taking the time to comment.

<u>Cultural Impacts</u>.

The analysis of Native Hawaiian traditional and customary access and gathering rights conducted before the Board of Land and Natural Resources and the Commission of Water Resource Management are fully set out in the text of their respective Findings of Fact, Conclusions of Law, and Decision and Order. For ease of reference, attached are the relevant pages from those decisions, which summarize the evidence establishing the extent of such practices at Ocean Pointe, the impact on those practices and the mitigation measures to protect those practices. As stated in both cases, Ocean Pointe will not have a significant adverse impact on access and gathering practices. Because the reconfiguration of the Ocean Pointe master plan does not extend to the shoreline areas (where the practices are conducted), the analysis of, and impact on, cultural practices are not altered.

<u>Sustainable Building Design</u>

HASEKO supports the benefits of incorporating sustainable building design features and has incorporated many of the design features recommended by the Environmental Council into the design of the homes at Ocean Pointe.

Your letter, along with this response, will be reproduced in the forthcoming Final Supplemental Environmental Assessment. If you have any further questions or comments, please feel free to call me at 536-3771, ext. 225.

Very Truly Yours,

HASEKO (EWA), Inc.

Nelson W. G. Lee
Executive Vice President

Enclosures **(Enclosures Attached As Exhibits)**

cc: Mr. Randall K. Fujiki, Department of Planning and Permitting
Department of Land and Natural Resources
Oshima Chun Fong and Chung, LLP

PHONE (808) 594-1888

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD SUITE 500
HONOLULU, HAWAII 96813

FAX (808) 594-1865

'01 MAY 21 PM 4 52

CITY & COUNTY OF HONOLULU

May 17, 2001

Randall Fujiki, Director
Department of Planning and Permitting
650 South King Street
Honolulu, Hawaii 96813

Subject: Draft Supplemental Environmental Assessment (EA), Ocean Pointe, Ewa

Dear Mr. Fujiki,

Thank you for the opportunity to comment on the draft supplemental environmental assessment (SEA) for the above-referenced project.

The draft SEA focuses on the comparative impacts of changes to the currently approved master plan. OHA is concerned about the reconfiguration of the golf course, the addition of a business area, and the availability of public boat slips. Further, the project's impacts on the groundwater resource should be revisited considering recent developments in our regulatory environment.

- **The comparative impact of the reconfigured golf course has not been adequately assessed and mitigated by this study.**

Deemed environmentally unfavorable, the upper basin of the marina was eliminated and replaced with an 800-foot drainage channel. The golf course was repositioned to sit over this area, thereby making the "golf-course a more effective part of the regional storm water drainage infrastructure." In fact, what this revision does is make the drainage infrastructure more economically feasible. The draft SEA confesses that "economics dictate that it (the drainage channel) be incorporated in to the golf course."

While the golf course may be more financially sound, the draft SEA does not establish that it is a more environmentally sound component of the drainage infrastructure. The draft SEA assures that storm waters entering the marina will be "cleaner" after having passed through the golf course's retention/detention basins (page 11). But golf courses pose a serious storm water pollution threat in the following ways.

1. Golf courses require pesticides, soil hardening agents, soil improving agents, fertilizers, and herbicides. These chemicals can enter the aquatic environment through poor application, infiltration through the soil, spills, poor disposal of empty containers, and runoff. As the golf course's grassed areas will border the 800-foot channel, chemically treated grass clippings may enter the waterway.

2. Maintenance vehicles and equipment are another likely source of contamination. Potential spills of petroleum products when decanting fuels and operating machinery and leaks from vehicles and equipment can pollute waterways.

3. Once in the waterways, these chemicals can cause dramatic changes within ecosystems. Organisms face impaired reproduction, inhibited growth and increased susceptibility to disease. These pollutants also destroy coral reefs. Excessive nutrient levels contribute to algae blooms and aquatic weeds. This type of damage to habitat and marine life adversely affects Hawaiian traditional and cultural practices.

So contrary to the SEA's assertion that a longer drainage path through the golf course will cleanse storm water, it may actually increase the possibility of contamination. Also, the addition of the drainage channel may exacerbate the run-off problem; the draft SEA itself explains that increased channelization has resulted in increased storm water flow. The draft SEA must deliver an assessment of these impacts and propose adequate mitigation, such as a documented stormwater management plan to address stormwater quality and pollution prevention, appropriate riparian (along waterways) vegetation and aquatic habitat management.

- **The impacts of the addition of a community business area must be addressed in the SEA.**

The draft SEA fails to analyze this new addition. What are the impacts of this addition on the amount of potable water use needed, sources and means of obtaining water? Will additional non-potable water be needed for landscaping this area? Will the business area result in an increase in hard surfaces and thus, more run-off? To what extent, will the new business area generate additional traffic?

- **The SEA should address how the reduced marina will accommodate the same number of boat slips that were originally planned.**

The draft SEA states that the reduced scale marina will still be able to issue the same amount of boat slips. However, the document does not explain how a marina, that will be almost half the original size, can still accommodate 1,400 boat slips. The availability of public boat slips should not be compromised in the reconfiguration of the marina.

- **The Commission on Water Resource Management permit must be revisited particularly in light of the August 2000 Waiahole decision, the current use of the aquifer, and the potential harm to the resource.**

In September 1998, the CWRM determined that the permit for excavation of the caprock met the reasonable-beneficial standard. However, the recent Supreme Court's ruling

affirmed that private commercial use must be held to a higher level of scrutiny and that CWRM must determine any possible harm to the water body. The Supreme Court also ruled that the applicant must prove sufficient certainty among scientists that the requested water use will not cause harm to the resource.

Meanwhile, the Ewa-Kunia Water Management Area is fast approaching its sustainable yield and recharge of groundwater sources has significantly decreased. As such, further review of the marina's impact on the resource is imperative.

The draft SEA states that the marina will cut away the shoreline, causing a temporary loss of the "barrier effect" which will be reestablished in a "relatively short time." However, did CWRM take into account the long-term impacts of this "relatively short" loss of the barrier between brackish water and salt water? For starters, possible harms are salt water intrusion and effects on groundwater velocity which is related to sustainable yield. Once sea water enters the aquifer, it's almost impossible to reverse the flow, despoiling Leeward Oahu's scarce irrigation water resources and possibly endangering the basalt drinking aquifer below. In Monterey, California, the decrease in the "barrier effect" due to over pumping of the inland groundwater supply has created a salt water intrusion problem that can potentially impact deeper aquifers.

Further, the draft SEA concedes that the marina's relocated shoreline will have impacts on groundwater levels. It implies that this impact is acceptable because the major reduction in water levels is limited to the Ocean Pointe property. Nevertheless, this water is held trust for all people of the state of Hawaii and this reduction should be evaluated from that standpoint. Given the potential harm to a resource that is to be held in the public trust, this permitted action should be reexamined.

If you have any questions, please contact Sharla Manley, Assistant Policy Analyst at 594-1944 or email her at sharlam@oha.org.

Sincerely,

Colin C. Kippen, Jr.
Deputy Administrator

CK: sam

cc: OHA Board of Trustees
Randall K. Ogata, Administrator

HASEKO

HASEKO (Ewa), Inc.

June 14, 2001

Mr. Colin C. Kippen, Jr.
Deputy Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

Re: Ocean Pointe Master Plan (Revised);
Draft Supplemental Environmental Assessment

Dear Mr. Kippen:

The Department of Planning and Permitting has forwarded to us your letter of May 17, 2001, commenting on our draft Supplemental Environmental Assessment for the reconfiguration of the Ocean Pointe master plan. We appreciate your taking the time to comment. We offer the following responses in the respective order of the comments.

1. We understand your concerns regarding the anticipated impacts of the Ocean Pointe golf course. The golf courses proposed under the current and reconfigured master plans both serve as detention/retention basins for regional storm water and would both drain into the Ocean Pointe marina. However, the reconfigured golf course is approximately 30 acres smaller. As a result, its impact is expected to be no more, and perhaps less than, the golf course proposed under the current master plan.

2. The reconfiguration of the Ocean Pointe master plan changes only the relative sizes and locations of already permitted land uses. The community business center at the northeast area of the project is an example of this. Overall, commercial zoning under the reconfiguration is reduced by approximately 28 acres. The relocation of the community business center is a response to the Ewa Development Plan's directive to incorporate community facilities more closely into residential areas.

3. Thank you for your recommendation that the forthcoming Final Supplemental Environmental Assessment ("FSEA") discuss the how the reduced marina will accommodate 1,400 boat slips. We will take that into consideration in preparing the FSEA.

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4. We appreciate your comment regarding our Water Use Permit. The Commission on Water Resource Management found that the Ewa Caprock Aquifer is a brackish, non-potable, largely man-made aquifer which received its recharge mainly from sugar cane irrigation. Since sugar cane irrigation has ceased, it main source of recharge has also ceased. As stated in the DSEA, the impact of the marina's excavation on ground water resources was extensively considered during the contested case proceedings for the Water Use Permit. The reduction of the marina's size under the reconfiguration reduces the amount and reach of caprock excavation and the corresponding impact of that excavation on the non-potable resource. Despite the fact that the Ewa Caprock Aquifer is not a source for potable water, HASEKO is committed to ensuring that its impact on that ground water resource is minimized.

Your letter, along with this response, will be reproduced in the forthcoming FSEA. If you have any further questions or comments, please feel free to call me at 536-3771, ext. 225.

Very Truly Yours,

HASEKO (EWA), Inc.

Nelson W. G. Lee
Executive Vice President

cc: Mr. Randall K. Fujiki, Department of Planning and Permitting
Oshima Chun Fong and Chung, LLP

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

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

BRUCE S. ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH

May 18, 2001

Mr. Randall K. Fujiki, Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Fujiki:

Subject: Ocean Pointe Draft Environmental Assessment
TMK: 9-1-12:2, 5, 8-17

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

1. Activities associated with the construction of the project shall comply with the Department of Health's Administrative Rules, Chapter 11-46, "Community Noise Control."

   a. The contractor shall obtain a noise permit if the noise levels from the construction activities are expected to exceed the maximum permissible sound levels of the regulations as stated in Section 11-46-6(a);

   b. Construction equipment and on-site vehicles requiring an exhaust of gas or air shall be equipped with mufflers as stated in Section 11-46-6(b)(1)(A); and

   c. The contractor shall comply with the requirements pertaining to construction activities as specified in the rules and the conditions issued with the permit as stated in Section 11-46-7(d)(4).

Should there be any questions, please contact Russell S. Takata, Environmental Health Program Manager, Noise, Radiation and Indoor Air Quality Branch, at 586-4700.

Sincerely,

GARY GILL
Deputy Director
Environmental Health Administration

01-023/cpo

DEPT. OF PLANNING & PERMITTING
CITY & COUNTY OF HONOLULU
'01 MAY 21 AM 10 14

HASEKO
HASEKO (Ewa), Inc.

June 14, 2001

Mr. Gary Gill
Deputy Director
Environmental Health Administration
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

Re: Ocean Pointe Master Plan (Revised);
Draft Supplemental Environmental Assessment

Dear Mr. Gill:

The Department of Planning and Permitting has forwarded to us your letter of May 18, 2001, commenting on our Draft Supplemental Environmental Assessment for the reconfiguration of the Ocean Pointe Master Plan. We appreciate the information for provided regarding Community Noise Control. We will forward that information on to our construction staff.

Your letter, along with this response, will be reproduced in the forthcoming Final Supplemental Environmental Assessment. If you have any further questions or comments, please feel free to call me at 536-3771, ext. 225.

Very Truly Yours,

HASEKO (EWA), Inc.

Nelson W. G. Lee
Executive Vice President

cc: Mr. Randall K. Fujiki, Department of Planning and Permitting
Oshima Chun Fong and Chung, LLP

820 Mililani Street, Suite 820 • Honolulu, Hawaii 96813-2938 • Phone (808) 536-3771 • Fax (808) 538-7654

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

'01 MAY 2 PM 3 02

DEPT OF PLANNING
AND PERMITTING
CITY & COUNTY OF HONOLULU

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

April 26, 2001

Mr. Randall K. Fujiki, Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

LOG NO: 27363
DOC NO: 0104SC21

Dear Mr. Fujiki:

SUBJECT: Chapter 6E-42 Historic Preservation Review of a Draft Supplemental Environmental Assessment (DSEA) Prepared for Requested Change in Zoning and Minor Modification to Special Management Area (SMA) Use Permit for the Ocean Pointe Development (2001/ED-8[RJM] & 2001/CLOG-1339)
Honouliuli, 'Ewa, O'ahu
TMK: 9-1-012: 002, 005, 008-017, 023, 039 – 041, 045-047 (Por.)

Thank you for the opportunity to review and comment on the DSEA prepared for requested zoning changes and minor modifications to the approved Master Plan for the Ocean Pointe development in 'Ewa, O'ahu. Our review is based on historic maps, aerial photographs, records, and reports maintained at the State Historic Preservation Division. In addition, members of our Archaeology Branch and Burial Sites Program have conducted a number of field inspections within the development area.

As noted in the DSEA, the applicant previously carried out an archaeological inventory survey of the development area, followed by an archaeological mitigation program including data recovery and preservation. Our office approved the inventory survey and data recovery reports. The applicant has agreed to preserve six historic sites and provide both protection and interpretative materials for the preserve areas; our office has reviewed and approved for implementation the preservation plan for the six sites.

In January 2001, human remains were inadvertently discovered in sand deposits at Hau Bush Beach, which is in the general vicinity of the proposed marina entrance channel. The remains were those of a Native Hawaiian burial. Due to prior disturbance of the burial and its proximity to the shoreline and high surf, the State Historic Preservation Division (SHPD) made the determination to recover the remains. A search of burial records at the SHPD also indicated that in September 1992, a human burial was washed out of the shoreline in nearly the same location due to the high surf caused by Hurricane Iniki. That burial was determined to be Native Hawaiian and was subsequently reinterred in 'Ewa.

On February 28, 2001, the O'ahu Island Burial Council (OIBC) made a site visit to the January 2001 discovery location. At its regular meeting of April 11, 2001, OIBC voted to recommend that SHPD request a supplemental archaeological inventory survey of the shoreline sand

deposits within the Haseko project area; please see the copy of the attached letter (Diamond to Lee, dated April 11, 2001).

As noted above, our office previously accepted the findings made from an archaeological inventory survey of the Ocean Pointe project area in 1991. At that time, the shoreline sand deposits were surveyed through a program of auguring and limited test excavation; no evidence was then recovered of human burials or subsurface cultural deposits. In view of the inadvertent discoveries of burials made in 1992 and 2001 in the vicinity of Hau Bush Beach, it seems clear that additional investigations of the sand deposits are now warranted. Thus, we would recommend that the following condition be attached to the subject permits, if approved:

> A supplemental archaeological inventory survey of the shoreline sand deposits should be carried out prior to any ground disturbance. The survey should provide adequate coverage and sampling in order to locate any significant historic sites, such as subsurface cultural layers or human burials that may be present in this region. A report of findings should be submitted to the State Historic Preservation Division for review and approval. If significant historic sites are found, and if the proposed marina development will have an "adverse effect" upon them, the applicant shall develop an acceptable mitigation plan for review and approval by the State Historic Preservation Division. In the event human burials are found, a burial treatment plan shall be prepared in consultation with the O'ahu Island Burial Council and any identified descendants.

If this condition is attached to the approved permits, then the proposed zoning changes and minor modification to the SMA Use Permit will have "no adverse effect" on significant historic sites.

Should you have any questions, please feel free to contact Sara Collins at 692-8026.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

SC:jk

c: Mr. A. Van Horn Diamond, Chair, O'ahu Island Burial Council
Mr. W.G. Lee, HASEKO, 820 Mililani Street, Suite 820, Honolulu, HI 96813
Mr. Kai Markell, Burial Sites Program
Mr. Farley Watanabe, Dept. of the Army, US Army Engineer District, Honolulu,, Ft. Shafter, HI 96858-5440
Mr. Perry White, Planning Solutions, 1210 Auahi Street, Honolulu, HI 96814

BENJAMIN J. CAYETANO, GOVERNOR
STATE OF HAWAII

GILBERT S. COLOMA-AGARAN, CHAIRPERSON
• BOARD OF LAND AND NATURAL RESOURCES
• COMMISSION ON WATER RESOURCE MANAGEMENT

DEPUTIES
JANET E. KAWELO
LINNEL NISHIOKA

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION
555 Kakuhihewa Building
601 Kamokila Boulevard
Kapolei, Hawaii 96707
Tel. (808) 692-8015 • Fax: (808) 692-8020

April 11, 2001

'01 MAY 2 PM 3 03
DEPT OF PLANNING
2ND PERMITTING
CITY & COUNTY OF HONOLULU

Mr. W.G. Lee
Executive Vice President
Haseko
820 Mililani Street, Suite 820
Honolulu, Hawaii 96813-2938

Dear Mr. Lee:

On February 28, 2001, the O`ahu Island Burial Council (OIBC) visited One`ula Beach to physically reconnoiter the area. The archaeological inventory survey was completed in 1991 and subsequently reviewed and accepted by SHPD. In view of the subsequent burial finds in the shoreline sand deposits (1992 and 2001), we concluded Haseko would be well-advised to revisit its current archaeological survey findings and to perform a supplemental archaeological inventory survey.

The OIBC unanimously voted that Haseko should be so apprised and recommends that the Department of Land and Natural Resources requests Haseko to update its survey of the shoreline sand dunes in order to ensure that important cultural sites are identified and treated properly.

Respectfully yours,

A. Van Horn Diamond, Chair
O`ahu Island Burial Council

cc: Perry White, Planning Solutions
Cecil Santos, DLNR Land Division

HASEKO

HASEKO (Ewa), Inc.

June 14, 2001

Mr. Don Hibbard, Administrator
State Historic Preservation Division
Department of Land and Natural Resources
601 Kamokila Boulevard, Room 555
Kapolei, Hawaii 96707

Re: Ocean Pointe Master Plan (Revised);
Draft Supplemental Environmental Assessment

Dear Mr. Hibbard:

The Department of Planning and Permitting has forwarded to us your April 26, 2001 letter commenting on our draft Supplemental Environmental Assessment for the reconfiguration of the Ocean Pointe master plan.

We share your concerns regarding the 1992 and 2001 inadvertent discoveries of burials along the shoreline of Hau Bush Beach. As you have noted, the shoreline sand deposits were previously surveyed as part of the work completed for the Memorandum of Agreement between DLNR, the U.S. Army Corps of Engineers, the Office of Hawaiian Affairs and HASEKO. As you know, the Ocean Pointe project is currently subject to a number of federal, state and county permit conditions that require us to work closely with SHPD and to cooperate in the review and approval of mitigation measures in the event that previously unidentified archaeological resources are found during Ocean Pointe's development.

HASEKO is committed to insuring that all archaeological resources at the Ocean Pointe site are handled properly. We have no objection to preparing a supplemental archaeological inventory survey of the shoreline sand deposits in the area of the Ocean Pointe marina's entrance channel prior to any disturbance of the ground in that area.

Your letter, along with this response, will be reproduced in the forthcoming Final

820 Mililani Street, Suite 820 • Honolulu, Hawaii [illegible] • Phone [illegible] • Fax [illegible]

Supplemental Environmental Assessment. If you have any further questions or comments, please feel free to call me at 536-3771, ext. 225.

Very Truly Yours,

HASEKO (EWA), Inc.

Nelson W. G. Lee
Executive Vice President

cc: Mr. Randall K. Fujiki, Department of Planning and Permitting
Ms. Ardis Shaw-Kim, Department of Planning and Permitting
Mr. A. Van Horn Diamond, O'ahu Island Burial Council
Mr. Kai Markell, Burial Sites Program
Mr. Farley Watanabe, Department of the Army Corps of Engineers
Mr. Perry White, Planning Solutions
Oshima Chun Fong and Chung, LLP

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O. BOX 621
HONOLULU, HAWAII 96809

AQUACULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND DIVISION
STATE PARKS
WATER RESOURCE MANAGEMENT

May 22, 2001

LOG1456
LD-NAV

Ref.: 2001ED8.RCH

Honorable Randall K. Fujiki, Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Fujiki:

SUBJECT: I.D.: 2001/ED-8 & 2001/CLOG-1339
Ocean Pointe, Ewa, Island of Oahu, Hawaii
TMK: 9-1-12: 2, 5, 8-17, 23, 39-41, 45-47 (por)

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

Please be informed that the Land Division has no record of a valid shoreline certification covering the subject Tax Map Keys.

The Department has no other comment to offer at this time.

Should you have any questions, please feel free to contact Nicholas Vaccaro of the Land Division Support Services Branch at 809-587-0438.

Very truly yours,

DEAN Y. UCHIDA
Administrator

C: Oahu District Land Office
Planning and Technical Services

'01 MAY 24 AM 10 40
CITY & COUNTY OF HONOLULU
DEPT. OF PLANNING AND PERMITTING

HASEKO

HASEKO (Ewa), Inc.

June 14, 2001

Mr. Dean Y. Uchida
Administrator
Department of Land and Natural Resources
Land Division
P.O. Box 621
Honolulu, Hawaii 96809

Re: Ocean Pointe Master Plan (Revised);
Draft Supplemental Environmental Assessment

Dear Mr. Uchida:

The Department of Planning and Permitting has forwarded to us your letter of May 22, 2001, commenting on our draft Supplemental Environmental Assessment for the reconfiguration of the Ocean Pointe master plan. We appreciate your taking the time to comment.

The only ocean-front lot affected by the reconfiguration is TMK No. 9-1-012:005. The shoreline fronting that lot was certified on September 13, 1999. A copy of DLNR's letter regarding the certification is attached. However, HASEKO anticipates requesting a re-certification of the shoreline in the relatively near future.

Your letter, along with this response, will be reproduced in the forthcoming Final Supplemental Environmental Assessment. If you have any further questions or comments, please feel free to call me at 536-3771, ext. 225.

Very Truly Yours,

HASEKO (EWA), Inc.

Nelson W. G. Lee
Executive Vice President

Enclosure

cc: Mr. Randall K. Fujiki, Department of Planning and Permitting
Oshima Chun Fong and Chung, LLP

820 Mililani Street, Suite 820 • Honolulu, Hawaii 96813-2935 • Phone (808) 536-3771 • Fax (808) 538-7654

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O. BOX 621
HONOLULU, HAWAII 96809

OCT 15 1999

Ref: LD-NV
File Number: OA-677Final

Mr. Lester T. Shimabukuro
Towill, Shigeoka & Associates, Inc.
Land Surveyors
1270 Queen Emma Street, Suite 700
Honolulu, Hawaii 96813

Dear Mr. Shimabukuro:

Subject: Shoreline Certification Request
Applicant: Towill, Shigeoka & Associates, Inc.
Property Owner: Haseko (Ewa) Inc.
Location - Island: Oahu - District: Koolaupoko
Tax Map Key: 1st 9-1-012: 005 & 006
Land Division No.: OA-677

This is to inform you that the subject shoreline certification request has been certified on September 13, 1999.

Attached herewith are five (5) copies of the Certified Shoreline Maps.

Should you have any questions on this matter, please feel free to contact Nicholas A. Vaccaro at 587-0438.

Very truly yours,

DEAN Y. UCHIDA
Administrator

Enclosure
c: Land Board Member
District Land Branch
State Surveyor

BENJAMIN J. CAYETANO
GOVERNOR

ESTHER UEDA
EXECUTIVE OFFICER

STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
LAND USE COMMISSION
P.O. Box 2359
Honolulu, HI 96804-2359
Telephone: 808-587-3822
Fax: 808-587-3827

May 18, 2001

Mr. Randall K. Fujiki, AIA
Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Fujiki:

Subject: DRAFT SUPPLEMENTAL ENVIRONMENT ASSESSMENT REVIEW
Applicant: HASEKO (Ewa), Inc.
TMK Nos: 9-1-012: 002, 005, 008 through 017, 023, 039 through 041, portion of 045 through 047

We have reviewed the Draft Supplemental Environmental Assessment ("DSEA") for the revised master plan for the Ocean Pointe Project, Oneula, Oahu, Hawaii, as transmitted by your memorandum dated April 20, 2001.

Upon review of the DSEA, we have the following comments:

1. The subject property appears to be within the State Land Use Urban District as described in the DSEA.

2. In regard to Section I.A, Proposed Changes, the revisions to the Ocean Pointe Master Plan may require action by the Commission to determine that the proposed revisions are in compliance with the representations made to the Commission. The proposed revisions make significant changes in the location of golf course, marina, and residential uses that were previously represented in LUC Docket Nos. A83-558/MSM & Associates, Inc. and A89-651/Haseko (Hawaii), Inc. We recommend Applicant contact our office regarding this matter.

3. In regard to Section VI.1 (e), Noise, and SectionVI.4 (a), Hazards, we recommend that the revised DSEA or the Final Supplemental Environmental Assessment ("FSEA") address the current operations of the United States Coast Guard ("USCG") at the former Naval Air Station Barbers Point ("NASBP"). We understand that the USCG and the United States Marine Corps are still using NASBP for their missions. The USCG had pointed out that the restrictive easement imposed on the northwest portion of the project area is still in effect, as discussed during the Commission's proceedings on LUC Docket No. A83-558/MSM & Associates, Motion For Relief From Condition No. 7 of the Decision and Order Entered on September 21, 1984, held on February 16, 2001. The terms of the easement restricted residential and visitor accommodation uses in the easement area. We understand that the Applicant and the USCG are discussing this matter.

4. In regard to Section VI.5 (a), Traffic/Roadways, we recommend that the DSEA or the FSEA clarify if the Traffic Master Plan Update For Ocean Pointe Dated February 9, 2001, in Exhibit I is based on the proposed Master Plan as shown in Exhibit B. Figures ES-1 and 2 of Exhibit I appear to be inconsistent with Exhibit B in regard to the northwest portion of the project area involving the location of proposed residential and golf course uses.

We have no further comments to offer at this time. We appreciate the opportunity to review and comment on the subject DSEA.

Please feel free to contact Russell Kumabe of my staff at (808) 587-3822, should you require clarification or any further assistance.

Sincerely,

ANTHONY J.H. CHING
Executive Officer

c: Office of Planning

HASEKO

HASEKO (Ewa), Inc.

June 14, 2001

Mr. Anthony J.H. Ching
Executive Officer
Land Use Commission
P.O. Box 2359
Honolulu, Hawaii 96804-2359

Re: Ocean Pointe Master Plan (Revised);
<u>Draft Supplemental Environmental Assessment</u>

Dear Mr. Ching:

The Department of Planning and Permitting has forwarded to us your letter of May 18, 2001, commenting on our draft Supplemental Environmental Assessment ("DSEA") for the reconfiguration of the Ocean Pointe master plan. We appreciate your taking the time to comment. We offer the following responses in the respective order of the comments.

1. Thank you for confirming that the area affected by the proposed reconfiguration is within the State Land Use Urban District.

2. We acknowledge that the reconfiguration of the Ocean Pointe Master Plan may require action by the Land Use Commission (the "Commission") to determine that the reconfiguration is in compliance with representations made to the Commission. Since the changes to the Master Plan involve only a reconfiguration of already permitted uses, we believe the reconfiguration is consistent with the applicable LUC dockets. Nevertheless, we will contact your office and work with your staff to schedule appropriate briefings or other action before the Commission.

3. Thank you for your recommendation that the forthcoming Final Supplemental Environmental Assessment ("FSEA") address the current operations of the United States Coast Guard at the Kalaeloa Airport. We will take that recommendation into consideration in preparing the FSEA.

   As we discussed in previous proceedings before the Commission, it is HASEKO's position that the restrictive easement over the western portion of Ocean Pointe was terminated by its own terms when Barbers Pointe Naval Air Station was closed in 1999. It is also our understanding from reviewing various environmental and other disclosure documents related to the closure of Barbers Point Naval Air Station and

its reuse as the Kalaeloa Airport, that the current and foreseeable airport operations at Kalaeloa will not have significant adverse noise or safety affects on Ocean Pointe. Nevertheless, the reconfiguration of the Ocean Pointe Master Plan does not propose any uses within the former restrictive easement area that would be restricted had the restrictive easement still been in place.

4. Thank you for your recommendation that we provide a clarification regarding the scope of the Traffic Master Plan Update (attached as Exhibit I to the DSEA) in relation to the reconfigured Ocean Pointe master plan. We will take that recommendation into consideration in preparing the FSEA.

Your letter, along with this response, will be reproduced in the forthcoming Final Supplemental Environmental Assessment. If you have any further questions or comments, please feel free to call me at 536-3771, ext. 225.

Very Truly Yours,

HASEKO (EWA), Inc.

Nelson W. G. Lee
Executive Vice President

cc: Mr. Randall K. Fujiki, Department of Planning and Permitting
Office of Planning
Oshima Chun Fong and Chung, LLP

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.honolulu.gov

JEREMY HARRIS
MAYOR

RANDALL K. FUJIKI, AIA
DIRECTOR

LORETTA K.C. CHEE
DEPUTY DIRECTOR

RJM
2001/ED-08

May 25, 2001

Haseko ('Ewa), Hawaii, Inc.
820 Mililani Street, Suite 820
Honolulu, Hawaii 96813

Attention: Mr. Nelson W. G. Lee

Dear Mr. Lee:

Draft Supplemental Environmental Assessment - Ocean Pointe

We have reviewed the above referenced document and offer the following comments:

1) Page 17 states that the closure of Barbers Point Naval Air Station will reduce air traffic noise levels at the northwest section of the project site. It is our understanding that the air field will continue to be used by the Coast Guard as well as other users. It is not obvious that air traffic and noise will remain at reduced levels. If possible, the Final Supplemental Environmental Assessment should provide some description of the type of noise levels residential properties could be exposed to.

2) The approved urban design plan, required under Condition C of Resolution 93-286, the Special Management Area Use Permit, will need to be amended subsequent to the approved zone changes.

3) The Final Supplemental Environmental Assessment should include a map showing the proposed zoning districts and a table comparing the area changes in each of the zoning districts.

4) Page 11 of the document states that the Honouliuli sewer outfall will be lowered within the Ocean Pointe site. It should also be mentioned that changes to the off-shore sewer line will also occur, pursuant to the revised drainage master plan.

FILE COPY

If you have any questions, please contact Ardis Shaw-Kim at 527-5349.

Sincerely yours,

for RANDALL K. FUJIKI, AIA
Director of Planning and Permitting

RKF:rjm
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cc: Oshima Chun Fong & Chung, LLP
Office of Environmental Quality Control

HASEKO

HASEKO (Ewa), Inc.

June 14, 2001

Mr. Randall K. Fujiki, AIA
Department of Planning and Premiting
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawaii 96813
Attn: Ardis Shaw-Kim

Re: Ocean Pointe Master Plan (Revised);
Draft Supplemental Environmental Assessment

Dear Mr. Fujiki:

Thank you for your letter of May 25, 2001, commenting on our draft Supplemental Environmental Assessment for the reconfiguration of the Ocean Pointe Master Plan. We appreciate your taking the time to comment. We offer the following responses in the respective order of the comments:

1. Thank you for your recommendation that the forthcoming Final Supplemental Environmental Assessment ("FSEA") provide a description of the residential noise levels at Ocean Pointe following the closure of Barbers Point Naval Air Station. We have reviewed various environmental and other disclosure documents related to the closure of Barber's Point Naval Air Station and its reuse as the Kalaeloa Airport. Based on that information, it is our understanding that the current and foreseeable airport operation at Kalaeloa will not have significant adverse noise impacts on Ocean Pointe. It is expected that noise levels associate with Kalaeloa within all of the residential areas at Ocean Pointe will not exceed 55 Ldn, which does not require sound attenuation.

2. We understand that the existing Ocean Pointe Urban Design Plan will need to be amended subsequent to any approval of our requested zone changes. HASEKO will work closely with the Department of Planning and Permitting to complete the amendment in a timely manner.

3. Thank you for the suggestion that the forthcoming FSEA include a proposed zoning map and a table comparing the area changes in each zoning district. We will include these items in the FSEA.

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4. The offshore portion of the Honouliuli Sewer Outfall will not be affected by the drainage infrastructure changes called for in the revised drainage master plan for Ocean Pointe that was approved by DPP on February 22, 2001. We will include appropriate language in the FSEA to make this clear.

Your letter along with this response will be reproduced in the forthcoming FSEA. If you have any further questions or comments, please feel free to call me at 536-3771, ext. 225.

Very Truly Yours,

HASEKO (EWA), Inc.

Nelson W. G. Lee
Executive Vice President

Enclosure

cc: Oshima Chun Fong and Chung, LLP

BOARD OF WATER SUPPLY

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

May 16, 2001

TO: RANDALL K. FUJIKI, AIA, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

FROM: BU
FOR CLIFFORD S. JAMILE, MANAGER AND CHIEF ENGINEER

SUBJECT: YOUR TRANSMITTAL OF APRIL 12, 2001 OF THE SUPPLEMENTAL DRAFT ENVIRONMENTAL ASSESSMENT FOR THE REVISED OCEAN POINTE MASTER PLAN, EWA, OAHU, TMK: 9-1-12: 2, 5, 8-17, 23, 39-41, 45-47

Thank you for the opportunity to review the subject document for the proposed Ocean Pointe development.

We have the following comments to offer:

1. We have no objections to the proposed revisions to the development's master plan. We understand that the proposed action is a reconfiguration of land uses that are already approved.

2. The Ocean Pointe development is required to have a dual water system utilizing nonpotable water for irrigation and other non-drinking uses. The revised water master plan for the dual water system must be submitted for our review and approval.

3. R-1 quality recycled (i.e., reclaimed) water from the Board of Water Supply's recently acquired Honouliuli Water Reclamation Facility should be made available for irrigation and other non-drinking uses in the near future. We are presently evaluating the expansion of the Ewa Nonpotable Water System to meet the projected growth/demand of existing and potential users of the system.

If you have any questions, please contact Scot Muraoka at 527-5221.

HASEKO

HASEKO (Ewa), Inc.

June 14, 2001

Mr. Clifford H. Jamile
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96813

Re: Ocean Pointe Master Plan (Revised);
Draft Supplemental Environmental Assessment

Dear Mr. Jamile

The Department of Planning and Permitting has forwarded to us your letter of May 16, 2001, commenting on our draft Supplemental Environmental Assessment for the reconfiguration of the Ocean Pointe master plan. We appreciate your taking the time to comment. We offer the following responses in the respective order of the comments.

1. We appreciate the Board of Water Supply's position that it has no objection to the reconfiguration of the Ocean Pointe Master Plan. As you state, the changes to the master plan involve only a reconfiguration of land uses that are already approved.

2. We acknowledge that Ocean Pointe is required to a have a dual water system using non-potable water for irrigation and other uses. A revised master plan for Ocean Pointe's potable water system was approved on November 3, 2000. We will cooperate with the Board of Water Supply on a dual water system master plan as Ocean Pointe is developed.

3. The information on the availability of reclaimed water is appreciated and will be forwarded to the project's engineers.

Your letter, along with this response, will be reproduced in the forthcoming Final

820 Mililani Street, Suite 820 • Honolulu, Hawaii 96813-2938 • Phone (808) 536-3771 • Fax (808) 538-7654

Supplemental Environmental Assessment. If you have any further questions or comments, please feel free to call me at 536-3771, ext. 225.

Very Truly Yours,

HASEKO (EWA), Inc.

Nelson W. G. Lee
Executive Vice President

cc: Mr. Randall K. Fujiki, Department of Planning and Permitting
Oshima Chun Fong and Chung, LLP

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 Fax: (808) 523-4567
Website: www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR

RAE M. LOUI, P. E.
DIRECTOR
GEORGE T. TAMASHIRO, P. E.
DEPUTY DIRECTOR
ERIC G. CRISPIN, AIA
ASSISTANT DIRECTOR

May 16, 2001

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CITY & COUNTY OF HONOLULU

TO: RANDALL K. FUJIKI, AIA, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

FROM: RAE M. LOUI, P. E., DIRECTOR

SUBJECT: DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
OCEAN POINTE, EWA, 2001/ED-8(RJM) AND 2001/CLOG-1339

This is in response to your memorandum dated April 20, 2001 regarding the Draft Supplemental Environmental Assessment (SEA) for the Ocean Pointe project.

Based on our review of the SEA, we are offering the following comments.

The last environmental document that was published for City permitting purposes by the developer was a Supplemental Environmental Impact Statement (SEIS) for the Ewa Marina project. This would seem to necessitate that any significant revisions to the project's plan involve a revised SEIS or the preparation of a new EIS.

While we have discussed the proposed 20-acre district park referred to in the report with the developer, we have not reviewed any proposed master plan for the park. Therefore, we cannot determine at this time the potential impact of a childcare facility (page 31) on the park. Further, on recent park dedication projects, we recommended that the childcare facility be located in an area of the park that would not impact normal recreational usage. This would typically involve the location of the facility in a separate area that would minimize any impact on the park's traffic flow and parking.

We are also concerned with the location of a proposed school adjacent to the proposed 20-acre district park. About three years ago, we came to a mutual agreement with the Department of Education that we would prefer the separation of school and park recreation facilities. This decision was due to the previously experienced negative impacts of schools utilizing park facilities for their physical education activities, programs, and events.

If possible, we recommend that the school site be located away from the district park. However, if the school is located adjacent to the park, we recommend that the school site be adequately sized and configured to include its own recreational facilities to meet the needs of its physical education program.

Thank you for the opportunity to comment on the subject report.

Please call Mr. Brian Suzuki, AICP, at extension 6316 if you have any questions.

RML:ei

cc: Department of Parks and Recreation

HASEKO

HASEKO (Ewa), Inc.

June 14, 2001

Rae M. Loui, P.E.
Director
Department of Design and Construction
City and County of Honolulu
850 South King Street, 11th Floor
Honolulu, Hawaii 96813

Re: Ocean Pointe Master Plan (Revised);
Draft Supplemental Environmental Assessment

Dear Ms. Loui:

The Department of Planning and Permitting has forwarded to us your letter of May 16, 2001, commenting on our draft Supplemental Environmental Assessment for the reconfiguration of the Ocean Pointe master plan. We appreciate your taking the time to comment.

Supplemental Environmental Impact Statement

The changes to the Ocean Pointe master plan in this environmental assessment process involve only a reconfiguration of already approved land uses. Since these land uses were extensively evaluated in a series of Environmental Impact Statements and Environmental Assessments, the DSEA was prepared as a supplement to those earlier disclosure documents.

District Park

Thank you for the information on siting of the child care facility within the proposed district park. We look forward to continuing to work with your department on the district park and will take that information into consideration as we prepare a master plan.

We also appreciate your concerns regarding the location of the proposed Ocean Pointe elementary school adjacent to the district park. For your information, the Department of Education has agreed that the proposed location is appropriate and we anticipate that the school will have sufficient recreational facilities. Moreover, the school's location is consistent with the Ewa Development Plan, which calls for schools to be co-located with parks.

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Your letter, along with this response, will be reproduced in the forthcoming Final Supplemental Environmental Assessment. If you have any further questions or comments, please feel free to call me at 536-3771, ext. 225.

Very Truly Yours,

HASEKO (EWA), Inc.

Nelson W. G. Lee
Executive Vice President

cc: Mr. Randall K. Fujiki, Department of Planning and Permitting
Department of Education
Oshima Chun Fong and Chung, LLP

DEPARTMENT OF ENVIRONMENTAL SERVICES
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, HONOLULU, HAWAII 96813
Phone: (808) 527-6663 • Fax: (808) 527-6675

JEREMY HARRIS
MAYOR

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DEPT. OF PLANNING AND PERMITTING
CITY & COUNTY OF HONOLULU

TIMOTHY E. STEINBERGER, P.E.
ACTING DIRECTOR

IN REPLY REFER TO
RE 01-084

May 16, 2001

MEMORANDUM

TO: RANDALL K. FUJIKI, AIA, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

FROM: TIMOTHY E. STEINBERGER, ACTING DIRECTOR
DEPARTMENT OF ENVIRONMENTAL SERVICES

SUBJECT: CHAPTER 343, HRS, DRAFT SUPPLEMENTAL ASSESSMENT (EA),
OCEAN POINTE, EWA
TAX MAP KEY: 9-1-012: 2,5, 8-17, 23, 39-41, 45-47 (POR)

We have no comments or objections to the subject draft supplemental environmental assessment.

If you have any questions, please call James Louis of the Refuse Division at 527-5832.

HASEKO

HASEKO (Ewa), Inc.

June 14, 2001

Mr. Timothy E. Steinberger, P.E.
Acting Director
Department of Environmental Services
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Re: Ocean Pointe Master Plan (Revised);
Draft Supplemental Environmental Assessment

Dear Mr. Steinberger:

The Department of Planning and Permitting has forwarded to us your letter of May 16, 2001, stating that the Department of Environmental Services has no comment on the reconfiguration of the Ocean Pointe Master Plan. We appreciate your taking the time to review and comment.

Your letter, along with this response, will be reproduced in the forthcoming Final Supplemental Environmental Assessment. If you have any further questions or comments, please feel free to call me at 536-3771, ext. 225.

Very Truly Yours,

HASEKO (EWA), Inc.

Nelson W. G. Lee
Executive Vice President

cc: Mr. Randall K. Fujiki, Department of Planning and Permitting
Oshima Chun Fong and Chung, LLP

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FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
3375 KOAPAKA STREET SUITE HA25
HONOLULU HAWAII 96819-1869

JEREMY HARRIS
Mayor

ATTILIO K. LEONARDI
Fire Chief

JOHN CLARK
Deputy Fire Chief

May 10, 2001

TO: RANDALL K. FUJIKI, AIA, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

FROM: ATTILIO K. LEONARDI, FIRE CHIEF

SUBJECT: CHAPTER 343, HRS DRAFT SUPPLEMENTAL
ENVIRONMENTAL ASSESSMENT (EA), OCEAN POINTE, EWA

We received your memorandum dated April 20, 2001, regarding the proposed zone change and minor modification to the Special Management Area Use Permit.

The proposed zone change and modification will not have an adverse impact on the services provided by the Honolulu Fire Department.

Should you have any questions, please call Battalion Chief Kenneth Silva of our Fire Prevention Bureau at 831-7778.

ATTILIO K. LEONARDI
Fire Chief

AKL/KS:jo

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CITY & COUNTY OF HONOLULU

HASEKO
HASEKO (Ewa), Inc.

June 14, 2001

Attilio K. Leonardi
Fire Chief
Fire Department
City and County of Honolulu
3375 Koapaka Street, Suite HA25
Honolulu, Hawaii 96813

Re: Ocean Pointe Master Plan (Revised);
Draft Supplemental Environmental Assessment

Dear Chief Leonardi:

The Department of Planning and Permitting has forwarded to us your letter of May 10, 2001, expressing the Fire Department's view that the reconfiguration of the Ocean Pointe Master Plan shall have no adverse effect on the services provided by the Honolulu Fire Department. We appreciate your taking the time to comment.

Your letter, along with this response, will be reproduced in the forthcoming Final Supplemental Environmental Assessment. If you have any further questions or comments, please feel free to call me at 536-3771, ext. 225.

Very Truly Yours,

HASEKO (EWA), Inc.

Nelson W. G. Lee
Executive Vice President

cc: Mr. Randall K. Fujiki, Department of Planning and Permitting
Oshima Chun Fong and Chung, LLP

820 Mililani Street, Suite 820 • Honolulu, Hawaii 96813-2938 • Phone (808) 536-3771 • Fax (808) 538-7654

POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96813 - AREA CODE (808) 529-3111
http://www.honolulupd.org
www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR

'01 MAY 18 PM 4 14

CITY & COUNTY OF HONOLULU

LEE D. DONOHUE
CHIEF

MICHAEL CARVALHO
ROBERT AU
DEPUTY CHIEFS

OUR REFERENCE CS-LS

May 17, 2001

TO: RANDALL K. FUJIKI, AIA, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

FROM: LEE D. DONOHUE, CHIEF OF POLICE
HONOLULU POLICE DEPARTMENT

SUBJECT: CHAPTER 343, HRS, DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT (EA), OCEAN POINTE, EWA

Thank you for the opportunity to review and comment on the subject document.

In reference to page 30, there are no future plans for an Ewa Villages substation. Also, our original response to the Ewa Marina Supplemental Environmental Impact Statement Preparation Notice of December 18, 1991, states our overall concern relative to police services for the area. As all of the developments have progressed, we are witnessing their actual impact on our services and would like to comment further.

Fort Weaver Road is already heavily used during peak-hour traffic. We are very concerned about any increase in traffic volume, which will be inevitable during the construction phase as well as when this and other projects in the area are occupied. This has and will continue to negatively impact calls for police service to the area.

If there are any questions, please call Carol Sodetani of the Support Services Bureau at 529-3658.

LEE D. DONOHUE
Chief of Police

By
EUGENE UEMURA, Assistant Chief
Support Services Bureau

HASEKO

HASEKO (Ewa), Inc.

June 14, 2001

Lee D. Donohue
Chief of Police
Police Department
City and County of Honolulu
801 South Beretania Street
Honolulu, Hawaii 96813

Re: Ocean Pointe Master Plan (Revised):
Draft Supplemental Environmental Assessment

Dear Chief Donohue:

The Department of Planning and Permitting has forwarded to us your letter of May 17, 2001, commenting on our draft Supplemental Environmental Assessment for the reconfiguration of the Ocean Pointe master plan. We appreciate your taking the time to comment.

Thank you for the corrected information regarding the Ewa Villages substation. That reference will be corrected in HASEKO's Final Supplemental Environmental Assessment.

HASEKO understands the affect that increased peak-hour traffic on Fort Weaver Road may have on calls for police services. Traffic generated by Ocean Pointe has been previously evaluated by traffic impact studies and taken into consideration in the planning for regional transportation master plans. Since the reconfiguration of the Ocean Pointe Master Plan only changes the locations and relative sizes of the project's components, the project's impact on regional traffic will not be significantly altered.

Your letter, along with this response, will be reproduced in the forthcoming Final Supplemental Environmental Assessment. If you have any further questions or comments, please feel free to call me at 536-3771, ext. 225.

Very Truly Yours,

HASEKO (EWA), Inc.

Nelson W. G. Lee
Executive Vice President

cc: Mr. Randall K. Fujiki, Department of Planning and Permitting
Oshima Chun Fong and Chung, LLP

820 Mililani Street, Suite 820 • Honolulu, Hawaii 96813-2935 • Phone (808) 536-3771 • Fax (808) 536-7634

Cates
International, Inc.
P.O. Box 335, Kailua, Hawaii 96734 USA • Phone: 1 + (808) 262-0287 • Fax: 1 + (808) 262-0804
e-mail: info@catesinternational.com

May 21, 2001

Nelson W. G. Lee
Haseko ('Ewa), Inc
820 Mililani St., Ste 820
Honolulu, Hawaii 96813

Dear Mr. Lee,

We have reviewed the Draft Environmental Assessment for Ocean Pointe Master Plan (Revised), and would like to request that you address the following areas of concern.

Our project is an offshore fish farm that is located approximately 2 miles South East of your proposed new marina entrance channel. On March 12, 2001, the Board of Land and Natural Resources approved our request for an ocean lease, and granted an immediate "right of entry" to begin operations. Within weeks the first cage will be stocked with juvenile fish and we expect to have live fish in the cages continuously from then on.

Given the relatively close proximity to the proposed land excavation and subsequent silt plumes emanating from harbor dredging, we are concerned that a concentrated cloud of silt could damage or destroy our live stocks or render them unfit for sale as a food product.

We have documented on many occasions that while the predominate current in the area flows from East to West, on occasion there is either no current, which could decrease the natural dilution process, or a reverse flow during tidal changes.

Inasmuch as we are now a permitted offshore operation we would like your evaluation of any possible impacts that either the dredging operations, harbor run-off, or increased vessel traffic may have on our facility. We are available to meet with you to exchange further information about our activities. I have attached a proximity map for your convenience and can provide you with a copy of our Final Environmental Assessment if necessary. I look forward to your reply.

Yours truly,

Virginia Enos
Virginia Enos
Vice President

C City and County of Honolulu – Dept. of Planning and Permitting
Oshima Fung Fong & Chung, LLP
OEQC

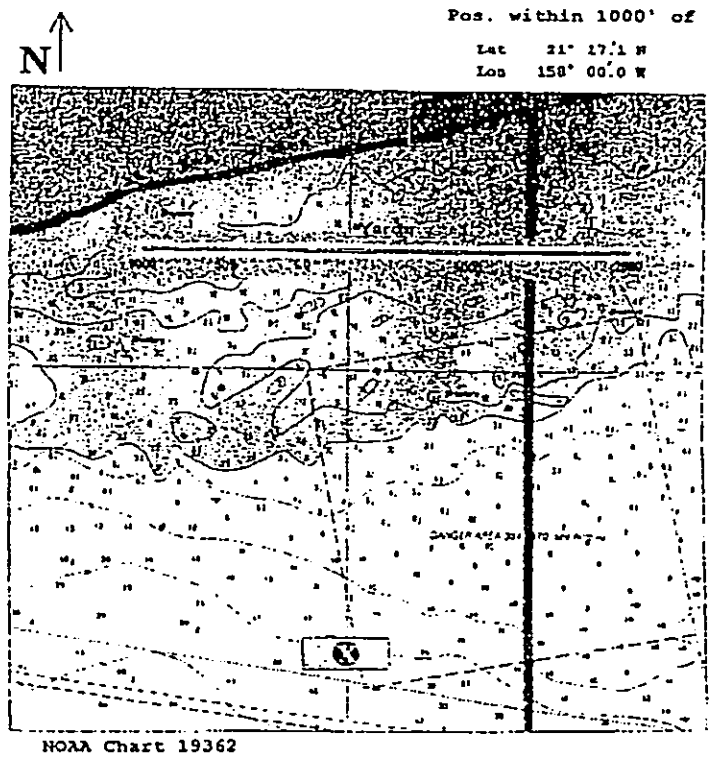

FIG. 3

HASEKO

HASEKO (Ewa), Inc.

June 14, 2001

Ms. Virginia Enos
Vice President
Cates International, Inc.
P.O. Box 335
Kailua, Hawaii 96734

Re: Ocean Pointe Master Plan (Revised);
Draft Supplemental Environmental Assessment

Dear Ms. Enos:

Thank you for letter of May 21, 2001 commenting on our Draft Supplemental Environmental Assessment for the reconfiguration of the Ocean Pointe Master Plan. We appreciate your taking the time to comment.

The impact of Ocean Pointe on ocean water quality, including the reduced-scale marina alternative, were extensively evaluated in the Federal Environmental Impact Statement that was prepared by the U.S. Army Corps of Engineers. We would refer you to the EIS and expect that the construction and operation of the Ocean Pointe marina were considered in Cates International's permitting and environmental assessment process.

Your letter, along with this response, will be reproduced in the forthcoming Final Supplemental Environmental Assessment. If you have any further questions or comments, please feel free to call me at 536-3771, ext. 225.

Very Truly Yours,

HASEKO (EWA), Inc.

Nelson W. G. Lee
Executive Vice President

cc: Mr. Randall K. Fujiki, Department of Planning and Permitting
Oshima Chun Fong and Chung, LLP

820 Mililani Street, Suite 820 • Honolulu, Hawaii 96813-2938 • Phone (808) 536-3771 • Fax (808) 538-7654

HASEKO EWA INC.
820 MILILANI ST
SUITE 820
HONOLULU, HI 96813.

THE EWA BEACH COMMUNITY HAS BEEN SLAPPED IN THE FACE AGAIN BY NELSON LEE, VICKIE GAYNOR, AND RANDALL FUJIKI DIRECTOR OF PLANNING AND PERMITTING.

10 YEARS AGO NELSON LEE AND HIS CREW CAME TO EWA BEACH AND HELD MEETINGS WITH THE EWA BEACH COORDINATING COMMITTEE FOR COMMUNITY BENEFITS JUST ABOUT EVERY MONTH.

MR. LEE WAS INVITED TO MANY MEETINGS BY MANY ORGINIZATIONS IN THE EWA BEACH COMMUNITY:HIS ANSWERS TO QUESTIONS WERE ALWAYS POSITIVE THAT THE OCEANPOINTE PROJECT WAS ON TRACK AND PRIOR TO APPLYING FOR SUBDIVISION ON ANY PORTION OF THE OCEANPOINTE PROJECT THAT THAT HASEKO WOULD DEDICATE A 20 ACRE PLAYGROUD WITH AMENITIES SUCH AS A CHILD CARE CENTER,ATHLETIC FIELDS,GYMNASIUM,AND THAT TH E .GOLF COURSE AND THE MARINAWOULD BE A REALITY.OCEANPOINTE HAS BEENAN EXREME CONCERN IN OUR COMMUNITY WHICH NELSON LEE NOW COMES UP WITH A LOT OF LIES AND FALSE INNUENDOS.

BOTH THE CITY AND STATE SHOULD PLACE A MORETORIUM ON ALL CONSTRU CTION AT OCEANPOINTE UNTIL AN INVESTIGATION IS MADE AND HAVE NELS ON LEE AND HIS CREW OWN UP ON WHAT THE HELL THEY ARE GOING TO DO NEXT. 15 MONTHS AGO COUNCILMAN JOHN DESOTO WAS READY TO STOP ALL CONSTRUTION AT OCEANPOINTE BECAUSE OF DRAINAGE PROBLEMS.HAS THIS BEEN RESOLVED.

HASEKO WITH THE HELP OF RANDALL FUJIKI KEEPS BUILDING HOMESAND NO AMENITIES TO THE COMMUNITY.

FOR THE LAST 10YEARS HASEKO HAS BEEN VERY CHRONIC IN GETTING ZONI NG CHANGES PERMITS WHENEVER THEY WANT THEM.WHEN IS THIS GOING TO STOP. SEN.BRIAN KANNO,REP. WILLIE ESPERO,COUNCILMAN JHON DESOSOTO FOR THE GOOD AND WELFARE OF THE PEOPLE OF THE EWA,EWA BEACH COMMU NITIES FOR ONCE PUT POLITICS ASIDE AND SEE WHY AND HOW HASEKO EWA INC. GETS AWAY WITH ALL THIS ONESIDED FAVORITISH.THEY PROMISED NOW THEY CHICKEN OUT.KANNO,ESPERO,DESOTO,A FULL RESPONSE WOULD STAND WELL FOR THE PEOPLEIN BOTH COMMUNITIES.

FOR ONCE NELSON LEE BE HONEST WITH THE EWA BEACH COMMUNITY NOT RANDALL FUJIKI HE DOESNT RESIDE HERE HE DOES NOT SHOW NO CONCERN FOR WHAT HASEKO HAS DONE WITH ALL THE PROMISES THEY MADE. NO MATTER WHAT COMES WITH THIS NEW GIMMICK THAT HASEKO IS PROPOSING WE WILL CONTINUE TO MAKE HASEKO A DEMON IN OUR COMMUNITY. ITS A DAMN SHAME.

RICK RODRIGUES
PRES. EWA BEACH COMM.ASSN.

HASEKO

HASEKO (Ewa), Inc.

June 14, 2001

Mr. Nick Rodrigues
91-723 Kilipoe Street
Ewa Beach, Hawaii 96706

Re: Ocean Pointe Master Plan (Revised);
Draft Supplemental Environmental Assessment

Dear Mr. Rodrigues:

Thank you for letter which we received on May 21, 2001 that appeared to be commenting on our Draft Supplemental Environmental Assessment ("DSEA") for the reconfiguration of the Ocean Pointe Master Plan. It is our understanding that your letter was not written on behalf of the Ewa Beach Community Association but instead, comes from you personally.

You appear to raise two issues. First, HASEKO's obligation to dedicate to the City a 20-acre district park at the northwest entrance to the project, and to contribute to the development of park facilities. Second, the status of HASEKO's regional drainage master plan.

District Park

The Unilateral Agreement (Ordinance 93-94) that binds HASEKO to the incremental development and dedication of the 20-acre district park is in conjunction with the construction of homes within Phase I, Increment 2 of the project. None of the homes built to date are within this phase. Playgrounds that have been built within the first phase of Ocean Pointe serve the new homes that have been built.

HASEKO has however obtained City approvals to begin construction of homes within Phase I, Increment 2. HASEKO has 5 years from the issuance of the first building permit for this phase to come up with a master plan for the district park that is acceptable to the City. We predict park improvements will begin before then. The initial improvements will include the grading, grassing, and irrigating of the first 5 acres of the district park site. As homes are built, the park will continue to be developed until the entire 20-acres is in place.

820 Mililani Street, Suite 820 • Honolulu, Hawaii 96813-2938 • Phone (808) 536-3771 • Fax (808) 538-7654

Regional Drainage

A revised drainage master plan for Ocean Pointe was approved by the Department of Planning and Permitting on February 22, 2001. The reconfiguration of the Ocean Pointe Master Plan is driven by and directly responsive to the requirements of the revised drainage master plan.

Your letter, along with this response, will be reproduced in the forthcoming Final Supplemental Environmental Assessment. If you have any further questions or comments, please feel free to call me at 536-3771, ext. 225.

Very Truly Yours,

HASEKO (EWA), Inc.

Nelson W. G. Lee
Executive Vice President

cc: Mr. Randall K. Fujiki, Department of Planning and Permitting
Ewa Beach Community Association
Oshima Chun Fong and Chung, LLP

THE GENTRY COMPANIES

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DEPT OF PLANNING AND PERMITTING
CITY & COUNTY OF HONOLULU

May 23, 2001

Mr Nelson W. G Lee
Haseko (Ewa), Inc
820 Mililani Street, Suite 820
Honolulu, HI 96813

Ref Draft Environmental Impact Statement for Ocean Pointe Master Plan (Revised)

Dear Mr Lee

Thank you for the opportunity to review the Draft Environmental Assessment prepared for the revised Ocean Pointe Master Plan

Based on our review of the Draft EA, we find that the changes to the drainage master plan may potentially impact the development of the Ewa Makai West parcel This parcel is currently owned by Campbell Estate and is expected to be developed in the near future by the Gentry Companies We note that Haseko (Ewa) will meet the 12-foot invert and the 18-foot hydraulic grade line that has been previously approved at the Ocean Pointe-Ewa Makai-West boundary to accommodate existing and /or approved regional drainage infrastructure north of the Ocean Pointe site. The width of the ultimate drainage channel at this boundary will be approximately 330 feet on the Ewa Makai-West side of the property. Gentry assumes that the transition from this 330-foot width to the 800-foot channel indicated in the DEA will be made within the Ocean Pointe property Would you please confirm that this assumption is correct?

We also note that the proposed elementary school site will be situated right next to a planned commercial-industrial development in Ewa Makai While we will leave the appropriateness of the proposed school site location to the Department of Education, we would like to point out that there may be potential conflicts in the uses proposed for the adjacent sites

Thank you for the opportunity to comment on the Draft EA Please call me at 599-8370 if you have any questions regarding this matter.

Sincerely,

GENTRY HOMES, LTD

Debra M A Luning
Director of Governmental Relations
and Community Affairs

c Mr Bob McGraw, Department of Planning and Permitting, City and County of Honolulu
Mr Wayne Costa, Oshima, Chun, Fong & Chung, LLP
OEQC
Mr Ray Manami, DOE Facilities Branch

HASEKO

HASEKO (Ewa), Inc.

June 14, 2001

Ms. Debra M. A. Luning
Director of Governmental Relations
and Community Affairs
Gentry Homes, Ltd.
P.O. Box 295
Honolulu, Hawaii 96809

Re: Ocean Pointe Master Plan (Revised);
Draft Supplemental Environmental Assessment

Dear Ms. Luning:

Thank you for letter of May 23, 2001 commenting on our Draft Supplemental Environmental Assessment for the reconfiguration of the Ocean Pointe Master Plan.

The revised drainage plan for Ocean Pointe was developed to be consistent with previously approved regional drainage plans and to avoid adverse impacts to existing mauka drainage infrastructure. It is consistent with the approved regional drainage plans for Ewa Makai West.

With respect to the proposed location of the Ocean Pointe elementary school, we are not aware of any conflict with any approved uses on adjacent properties.

Your letter, along with this response, will be reproduced in the forthcoming Final Supplemental Environmental Assessment. If you have any further questions or comments, please feel free to call me at 536-3771, ext. 225.

Very Truly Yours,

HASEKO (EWA), Inc.

Nelson W. G. Lee
Executive Vice President

cc: Mr. Randall K. Fujiki, Department of Planning and Permitting
Oshima Chun Fong and Chung, LLP

820 Mililani Street, Suite 820 • Honolulu, Hawaii 96813-2938 • Phone (808) 536-3771 • Fax (808) 538-7654

Ko Olina Resort & Marina

RECEIVED
MAY 21 2001
HASEKO (Ewa), INC.
EWA MARINA

May 17, 2001

Haseko ('Ewa) Inc.
820 Mililani Street, Suite 820
Honolulu, HI 96813

RE: Ocean Pointe Master Plan (Revised) (Ewa Marina)
DRAFT SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT (EA)

Dear Sirs:

In anticipation of the opening of the Ewa Marina public boat ramps, the Ko Olina Community Association ("KOCA") has accommodated the Leeward Fishermen with public access to a private boat ramp at the Ko Olina Marina for the last year. We are in support of the Ocean Pointe Ewa public boat ramps as described in the draft EA and understand that they will satisfy the needs of the Leeward Fishermen.

KOCA offers this letter of support for the Ocean Pointe Ewa Marina revised EA and specifically in support for the required public boat ramps, which are a conditional requirement of the CDUP with the State. We believe that the boat ramp requirement should be completed at the earliest date to provide a facility for fishermen.

Sincerely,

Kenneth M. Williams
General Manager

Ko Olina Community Association • 92-619 Farrington Highway, Ko Olina, Hawaii 96707
Phone: (808) 676-3500 • Facsimile: (808) 676-3569

HASEKO

HASEKO (Ewa), Inc.

June 14, 2001

Mr. Kenneth W. Williams
General Manager
Ko Olina Community Association
92-619 Farrington Highway
Ko Olina, Hawaii 96707

Re: Ocean Pointe Master Plan (Revised);
Draft Supplemental Environmental Assessment

Dear Mr. Williams:

Thank you for letter of May 17, 2001 commenting on our Draft Supplemental Environmental Assessment for the reconfiguration of the Ocean Pointe Master Plan. We appreciate your taking the time to comment and your words of support.

As you point out, the Conservation District Use Permit ("CDUP") issued for the construction of the Ocean Pointe marina's entrance anticipates that the public boat launching ramp complex at the marina will be available 24 hours a day. The CDUP also sets out the timing for the construction of the boat launching ramp complex.

Your letter, along with this response, will be reproduced in the forthcoming Final Supplemental Environmental Assessment. If you have any further questions or comments, please feel free to call me at 536-3771, ext. 225.

Very Truly Yours,

HASEKO (EWA), Inc.

Nelson W. G. Lee
Executive Vice President

cc: Mr. Randall K. Fujiki, Department of Planning and Permitting
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CITY & COUNTY OF HONOLULU

Ua Mau Ke Ea O Ka 'Aina I Ka Pono

LIFE OF THE LAND

Hawai'i's Own Environmental & Community Action Group
Protecting Our Fragile Natural & Cultural Resources
Through Research, Education, Advocacy, & Litigation

May 15, 2001

Oshima Chun Fong & Chung, LLP
841 Bishop Street, Suite 400
Honolulu, HI 96813

City & County of Honolulu
Department of Planning and Permitting
650 S. King Street
Honolulu, HI 96813

re: Ocean Point Master Plan DEA

Aloha,

Life of the Land is Hawai'i's own environmental and community action group serving Hawai'i since 1970. Our mission is to preserve and protect the life of the land, to promote sustainable land use and energy policies and to promote open government through research, education, advocacy and, when necessary, litigation.

Please place us on your mailing lists for all Environmental Assessments, Environmental Impact Statements, Shoreline Management Area Permits, etc.

The Hawaii Constitution, Article XI, Section 1, states: "For the benefit of present and future generations, the State and its political subdivisions shall conserve and protect Hawaii's natural beauty and all natural resources, including ... energy resources, and shall promote the development and utilization of these resources in a manner consistent with their conservation and in furtherance of the self-sufficiency of the State."

76 North King Street, Suite 203 * Honolulu, HI 96817
phone 533-3454 * fax: 533-0993 * email: lifeoftheland@hotmail.com

The 1978 Constitutional Convention's Committee on Environment, Agriculture, Conservation and Land wrote in its report: "The consensus of your committee with regard to self-sufficiency was to constitutionally recognize the growing concern and awareness of Hawaii as being overly dependent on outside sources for, among other resources, food and energy."

"Your committee spent much time considering the need for a separate section on an energy policy for the state. However, it was concluded that the promotion of energy conservation, the development of clean, renewable sources of energy and the achievement of increased energy self-sufficiency would be adequately covered by the provisions of this section."

CREST: All energy production and consumption are directly and indirectly associated with forms of environmental impacts which affect the health and welfare of people other than the producers or consumers. These impacts include global warming caused by emissions of global warming gases: Carbon dioxide (CO2); Methane (CH4); Nitrous oxide (N2O); Hydrofluorocarbons (HFCs); Perfluorocarbons (PFCs); Sulphur hexafluoride (SF6). Among human-produced emissions, carbon dioxide is the major contributor to the greenhouse effect that causes global climate change. U.S. fossil energy (coal, oil, natural gas) use currently produces about one- fourth of the world's CO2 emissions. According to the Energy Information Agency, the Nation's CO2 emissions will grow from 1.34 billion tons of carbon per year in 1990 to about 1.64 billion tons per year in the year 2010. Energy is conserved when energy waste is avoided. http://solstice.crest.org/efficiency/crs/ee/summary.html

DBEDT: It is estimated that approximately 36 per cent of the world's primary energy is consumed in residential and commercial buildings. Worldwide, energy use in residential buildings is about twice that of commercial buildings. Energy consumption in buildings is a function determined by both building design and building use. The building design, including choice of location, structure and layout as well as choice of building materials and equipment predetermine to a considerable extent the quantity of energy required in later operation of the building. Past energy efficiency and conservation measures reduce annual energy use, saving the economy about $225 billion per year. Total energy spending stands at about $450 billion annually. Energy is conserved when technical means are employed to improve efficiency or to reduce energy waste.

An energy-efficient building can be more comfortable, easier to maintain, and less costly to operate than an inefficient one. Hawaii's Model Energy Code is a building energy efficiency standard for the State of Hawaii. Although largely based on ASHRAE Standard 90.1, the Model Energy Code is also influenced by recent California codes and other national (ASHRAE and U.S. Department of Energy) standards. In addition, many parts of the Code have been developed specifically for the unique conditions of the Islands. The underlying intent of the Hawaii Model Energy Code is to save energy in buildings. The Hawaiian Islands are highly dependent on imported oil at prices and supplies that have proved to be unstable and dependent on world events that can not be controlled by the residents. Since increases in oil prices can quickly and dramatically impact the Hawaiian economy, it is sound public policy to encourage the design of the most efficient buildings possible.

History. In 1979 Honolulu adopted a building energy efficiency standard based on ASHRAE Standard 90-75. The Honolulu code was later adopted by Hawaii, Maui and Kauai. With these adoptions, the State of Hawaii joined most of the rest of the United States in having a building energy efficiency standard based on Standard ASHRAE 90-75. The proposed Code was developed over a two year period and benefited from continued input from the Building Code Task Force, a group that includes engineers and architects practicing on the islands, building officials, representatives of professional groups and building owners and managers.

Cost Effectiveness. Many of the requirements developed for the Code are based on cost effectiveness. The requirements are intended to provide a simple payback period of less than ten years, meaning that the additional cost due to a requirement is less then ten times the annual energy savings.

Energy Efficiency Building Codes - Each County (except Maui, who has not adopted the Code) has adopted slightly different requirements. The State has developed a "model energy code" for commercial buildings, hotels, and residential units. This is the basis for the County codes (modified by each County). Guidelines are voluntary measures architects, builders, and homeowners can take to make their buildings more comfortable (and energy efficient).

Ceiling Insulation in Hawaii? Insulation keeps people warm in Minnesota, but does it make sense in Hawaii? Yes! Under Hawaii's hot sun, a roof can reach 150° or more even when it's only 80° outside. That heat conducts through the roof to the ceiling. The heated ceiling "toasts" the occupants who then turn on fans and air conditioners to cool off in the afternoon and the evening. Ceiling insulation improves comfort and cuts electricity costs. The insulation pays for itself in 1 to 2 years. Insulation: Cellulose; Fiberglass; Foam Board Roof Insulation. Radiant Barrier is a reflective foil sheet that works differently than insulation but has a similar impact. Attic Ventilators are small fans that remove hot air and reduce attic temperature. Adequate inlet vent area is important, typically located under the eaves of the house. The fan should be located near the peak of the roof for best performance. Solar-powered ventilators currently qualify for a 35% State tax credit. A White Roof Surface combined with any of the measures listed above will improve performance significantly. The white surface reflects much of the sun's heat and stays much cooler than a typical roof. http://www.hawaii.gov/dbedt/ert/

*** UH's 1970s Energy House; GreenBuilt Home (2001), designed by Nick Huddleston. Location: 85-1398 Kamaileunu St. Waianae Valley. Assistance from the Building Industry Association of Hawaii, DBEDT, University of Hawaii. Cool quarters: All it takes is a few modifications to transform the standard heat trap into a comfy abode. By Burl Burlingame Honolulu Star-Bulletin. May 19, 2001

Questions
1. Does your building plans minimally comply with, or exceed, Hawaii's Model Energy Code? Please elaborate.
2. To what extent will you employ solar water heaters and/or photovoltaic cells?
3. To what extent are you employing radiant barriers?
4. Will each building in your project use natural ventilation?
5. How much cross-ventilation will occur in each buildings?
6. What percentage of your air-conditioning load will be used to remove hear created by lights?
7. Does the design utilize the latest in ceiling fans, louvered doors, and vents?
8. What lighting system will you utilize?

9. How does natural illumination and daylighting play a role in your project?
10. How does the buildings colors impact on the energy needs of the facility?
11. How extensive will air-conditioning will be avoided due to sound design concepts in your project?
12. What energy saving devices will be found in the attics or upper floors (such as fans, vents, etc.)?
13. Does the building site location take into account the trade winds?
14. Does the building site location take into account solar heat?
15. What energy efficient devices (ovens, refrigerators, etc.) will be installed?
16. Will window size, skylights, or other similar energy saving processes be installed?
17. Will shaded walls, shaded windows, or other exterior energy saving building designs be used?
18. How will the wall that gets the most afternoon sun/heat buildup be treated different?
19. Will windows allow for ventilation at body level?
20. Will screen doors, openable windows and other ventilation devices be used?
21. What devices will be used to allow efficient removal of heat from kitchen areas?
22. Will environmentally-friendly, recycled, & non-toxic components be used as construction material?
23. What toxics will arrive in, on, or with construction indoor, outdoor, and structural materials?
24. Will structural components be made from termite resistant materials such as recycled plastic?
25. Will chemicals such as CCA; boric acid, borate, be employed?
26. Will the carpets be natural or contain toxic materials?
27. What energy saving devices will be found in the bathrooms?
28. What HVAC equipment will be used?
29. Will home energy generating systems, with or without net metering, be installed?
30. How energy efficient is your project (barrels of imported oil/year will be avoided)?
31. To what extent will your outdoor lighting add to lighting up the night skies?
32. What percentage of the parking needs of your tenants and guests will be met by new parking spaces?

Mahalo

Henry Curtis

Henry Curtis
Executive Director

HASEKO

HASEKO (Ewa), Inc.

June 14, 2001

Mr. Henry Curtis
Life of the Land
76 North King Street, Suite 203
Honolulu, Hawaii 96817

Re: Ocean Pointe Master Plan (Revised);
Draft Supplemental Environmental Assessment

Dear Mr. Curtis:

Thank you for letter of May 15, 2001 commenting on our Draft Supplemental Environmental Assessment ("DSEA") for the reconfiguration of the Ocean Pointe Master Plan. We appreciate your taking the time to comment.

HASEKO recognizes the importance of conservation and energy efficiency and has already taken it into consideration in the design and construction of the earliest components of Ocean Pointe. We appreciate the information you provided and have forwarded it to the project's designers and engineers.

Your letter, along with this response, will be reproduced in the forthcoming Final Supplemental Environmental Assessment. If you have any further questions or comments, please feel free to call me at 536-3771, ext. 225.

Very Truly Yours,

HASEKO (EWA), Inc.

Nelson W. G. Lee
Executive Vice President

cc: Mr. Randall K. Fujiki, Department of Planning and Permitting
Oshima Chun Fong and Chung, LLP

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