

BOARD OF WATER SUPPLY

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



September 27, 1994

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Dear Dr. Anderson:

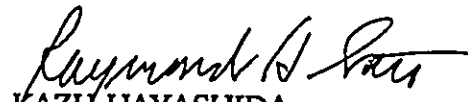
Subject: Negative Declaration for the Proposed Renovation of the Nuuanu Lower
Aerator Facility, TMK: 1-9-07: 02, Nuuanu, Oahu

The Board of Water Supply has reviewed the comments received during the public comment period which began on August 8, 1994. We have determined that the environmental impacts of this project have been adequately addressed as discussed in the final environmental assessment (EA) and are therefore, issuing a negative declaration. We request that our proposed well project be published in the October 8, 1994 OEQC Bulletin as a Negative Declaration.

Attached are four copies of the final EA for your review.

If you have any questions, please contact Barry Usagawa at 527-5235.

Very truly yours,


FOR KAZU HAYASHIDA
Manager and Chief Engineer

Attachment

1994-10-08-0A-~~FEA~~ Nuuanu Lower Aerator Facility Renovation ^{OCT - 8 1994}

CITY AND COUNTY OF HONOLULU

BOARD OF WATER SUPPLY

**ENVIRONMENTAL ASSESSMENT
FOR THE RENOVATION OF THE NUUANU LOWER
AERATOR FACILITY**

AT

**NUUANU, HONOLULU, OAHU
STATE OF HAWAII**



**PREPARED BY
BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843**

June 1994

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SECTION 1

INTRODUCTION AND SUMMARY

1.1 APPLICANT/PROPOSING AGENCY

Board of Water Supply, City and County of Honolulu

1.2 APPROVING AGENCY

State of Hawaii

1.3 AGENCIES CONSULTED IN MAKING THE ASSESSMENT

1. Safe Drinking Water Branch, State Department of Health
2. City and County of Honolulu, Department of Land Utilization
3. Hawaii State Division of Aquatic Resources, Department of Land and Natural Resources
4. Hawaii State Division of Forestry and Wildlife, Department of Land and Natural Resources
5. Hawaii State Office of Environmental Quality Control, Department of Health
6. Historic Sites Preservation Office, Department of Land and Natural Resources
7. Office of Conservation and Environmental Affairs, Department of Land and Natural Resources.

SECTION 2

PROJECT DESCRIPTION

2.1 PROJECT SITE

2.1.1 Description

The Board of Water Supply (BWS) of the City and County of Honolulu constructed the Nuuanu Lower Aerator Facility in 1937. It is a wooden structure that was built to treat (aerate and chlorinate) underground spring water from Nuuanu Tunnels 3 and 3A and the Alewa Heights Spring prior to storage and distribution to BWS customers. The Nuuanu Lower Aerator facility supplies water to sections of Lower Nuuanu, Alewa, Pauoa, and Makiki. It presently aerates between 0.5 to 2.0 million gallons per day (mgd). Eventually, water from Nuuanu Tunnels 4 and 4B will also be treated at the lower aerator facility. The service zones supplied by the Lower Aerator facility include the Nuuanu 822 and 640-foot zones. Any excess water will be used to supplement the Nuuanu 405-foot service zone.

The pH range of the water from Nuuanu Tunnels 3 and 3A and the Alewa Heights Spring is between 6.0 to 6.5, which is highly-corrosive to the cast iron pipes that were used in the 1930's. The lower aerator facility increases the pH levels to a range of 8.0 to 8.5 by adding oxygen and lime to the source waters.

The BWS was in the process of renovating the lower aerator, including the demolition and replacement of the existing wooden aerator building with a reinforced concrete structure, to meet current Safe Drinking Water Standards established by the U.S. Environmental Protection Agency and enforced by the State Department of Health. However, due to

surface water influence, the BWS has closed down the Nuuanu Lower Aerator Water Treatment Facility because recent water samples have shown evidence of cryptosporidium, a protozoa parasite known to cause gastrointestinal illness. The facility will remain closed until a treatment process is in place. In order to remove the cryptosporidium, a micro-filtration system will be installed at the Nuuanu Lower Aerator in two phases. The first phase calls for the installation of a single micro-filtration unit to verify the effectiveness of the process. If the first unit performs as planned, the BWS will proceed with the installation of two additional micro-filtration units. These two additional units will provide the remaining capacity required to treat maximum flow from the sources. A temporary 8-inch above-ground pipeline of approximately 1,500 linear feet from the lower aerator to the upper aerator/822-foot 0.2 million gallon reservoir facility will also be installed. This measure will provide operational flexibility if the tunnel sources serving the upper aerator become contaminated or must be shut down for repair and renovation. Two 350 gallon-per-minute pumps and a dual compartment sump will be added. The improvements to the existing facility are required to maintain compliance with Department of Health rules for safe drinking water for residents served by the BWS system. The project site is located in upper Nuuanu Valley between the Pali Highway and Nuuanu Pali Drive (see Figure 1 - Location Map). The Board of Land and Natural Resources approved Conservation District Use Application OA-2573 to renovate and refurbish the existing Nuuanu Lower Aerator Water Treatment Facility on February 12, 1993.

2.1.2 Project Location

The proposed renovation project is located on a 73-acre parcel consisting of the existing Nuuanu Valley water facilities, as shown on Figure 2. The Nuuanu Lower Aerator Facility is at an elevation of approximately 750 feet in the Nuuanu Valley, about five miles from downtown Honolulu. The property is identified by Tax Map Key 1-9-07:2. The proposed renovation project will be constructed within the immediate vicinity of the existing lower aerator facility.

2.1.3 Land Ownership

The proposed site is owned by the State of Hawaii as indicated by Tax Map Key. However, through presidential proclamation, all water facilities are controlled and maintained by the water works department.

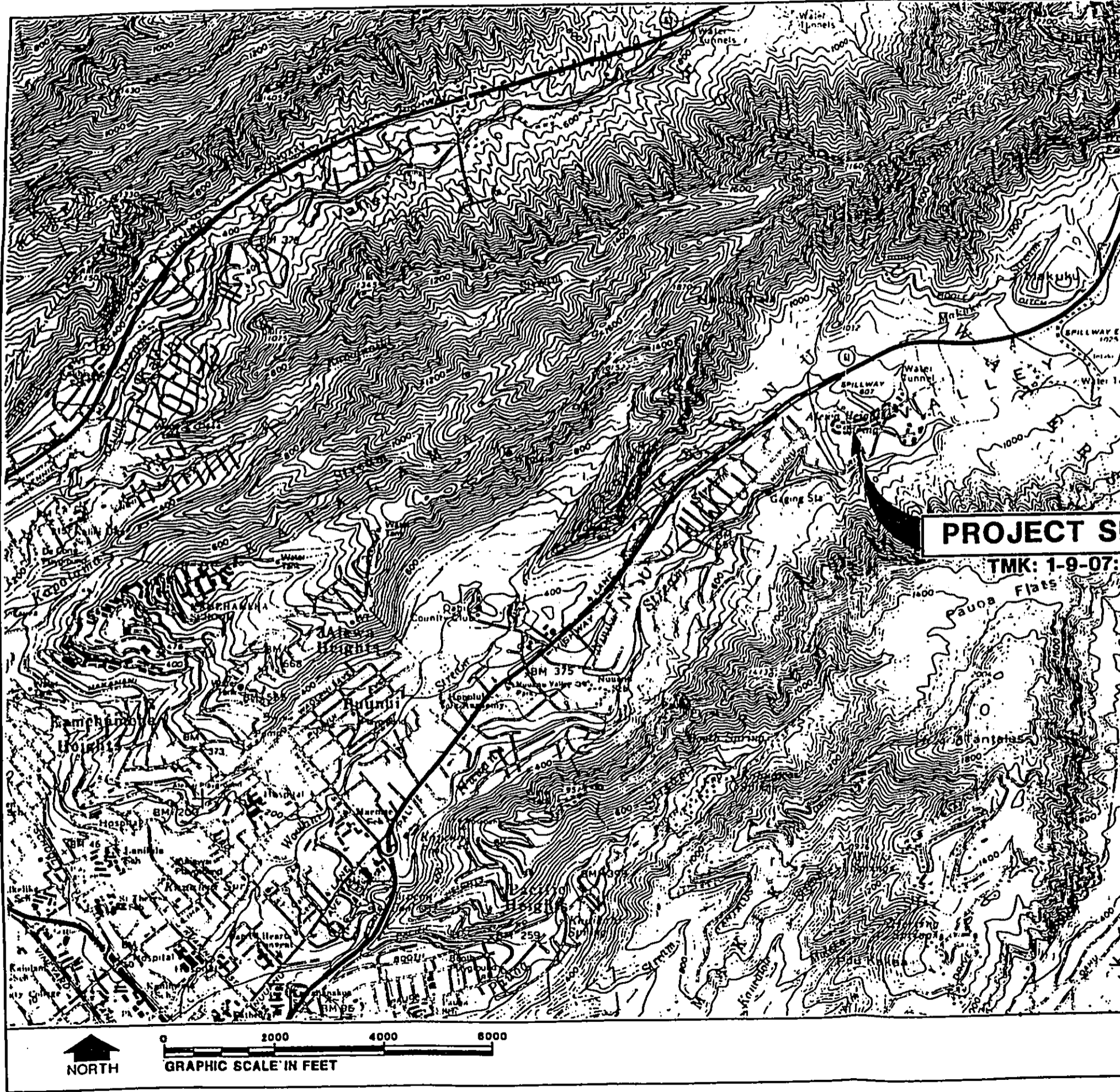
2.1.4 Land Use

The proposed renovation project is within the Resource and Protective subzones of the State Land Use Conservation District. The Land Use Designations of the State Land Use Commission are shown in Figure 3.

The proposed site is also within an area designated as "Preservation" on the City and County of Honolulu Development Plan Land Use Map. However, because the area is also designated as state conservation land, the requirements of the state would apply over city ordinance.

The site is outside of the city Special Management Area and therefore a Special Management Area Permit is not required.

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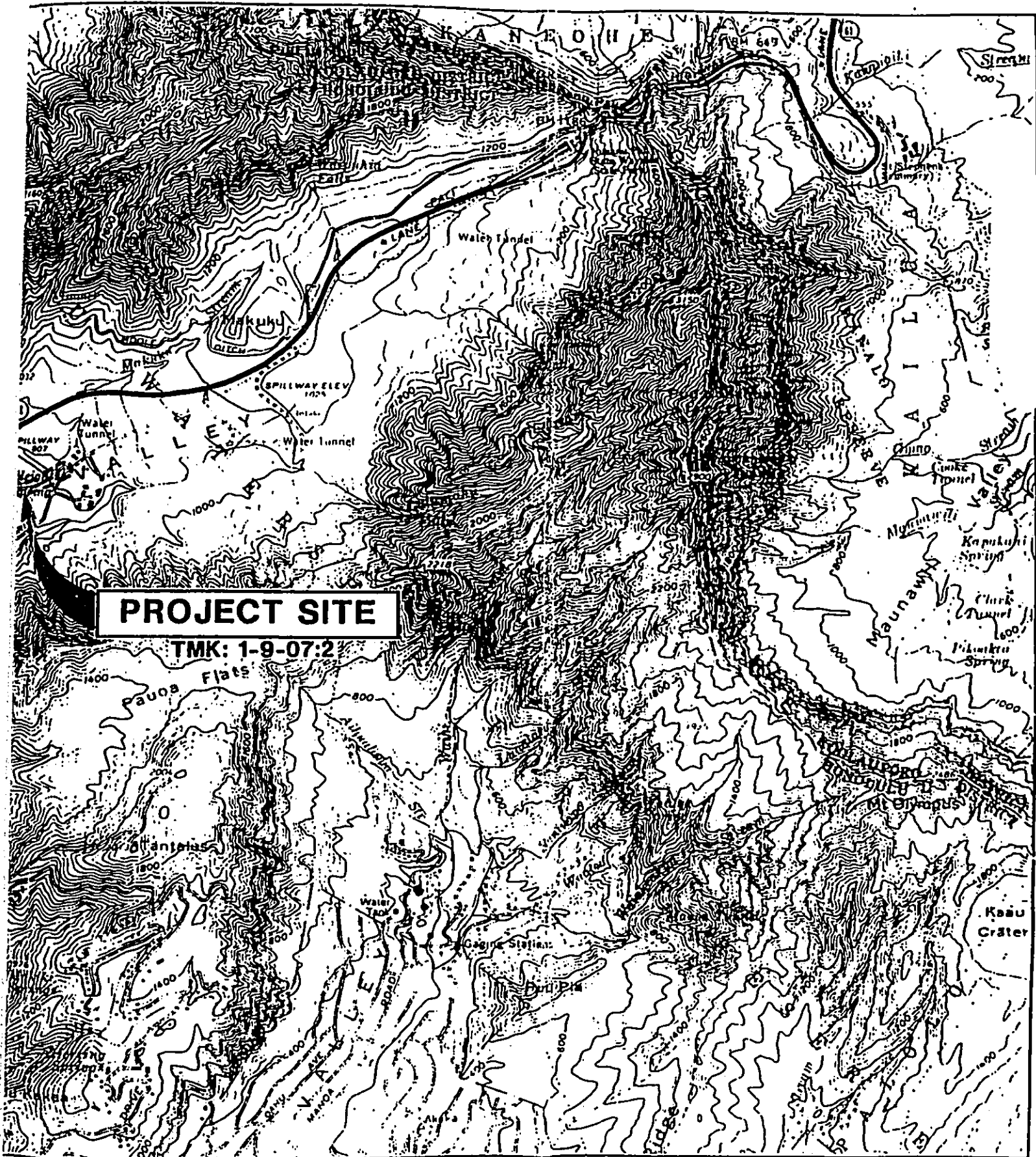
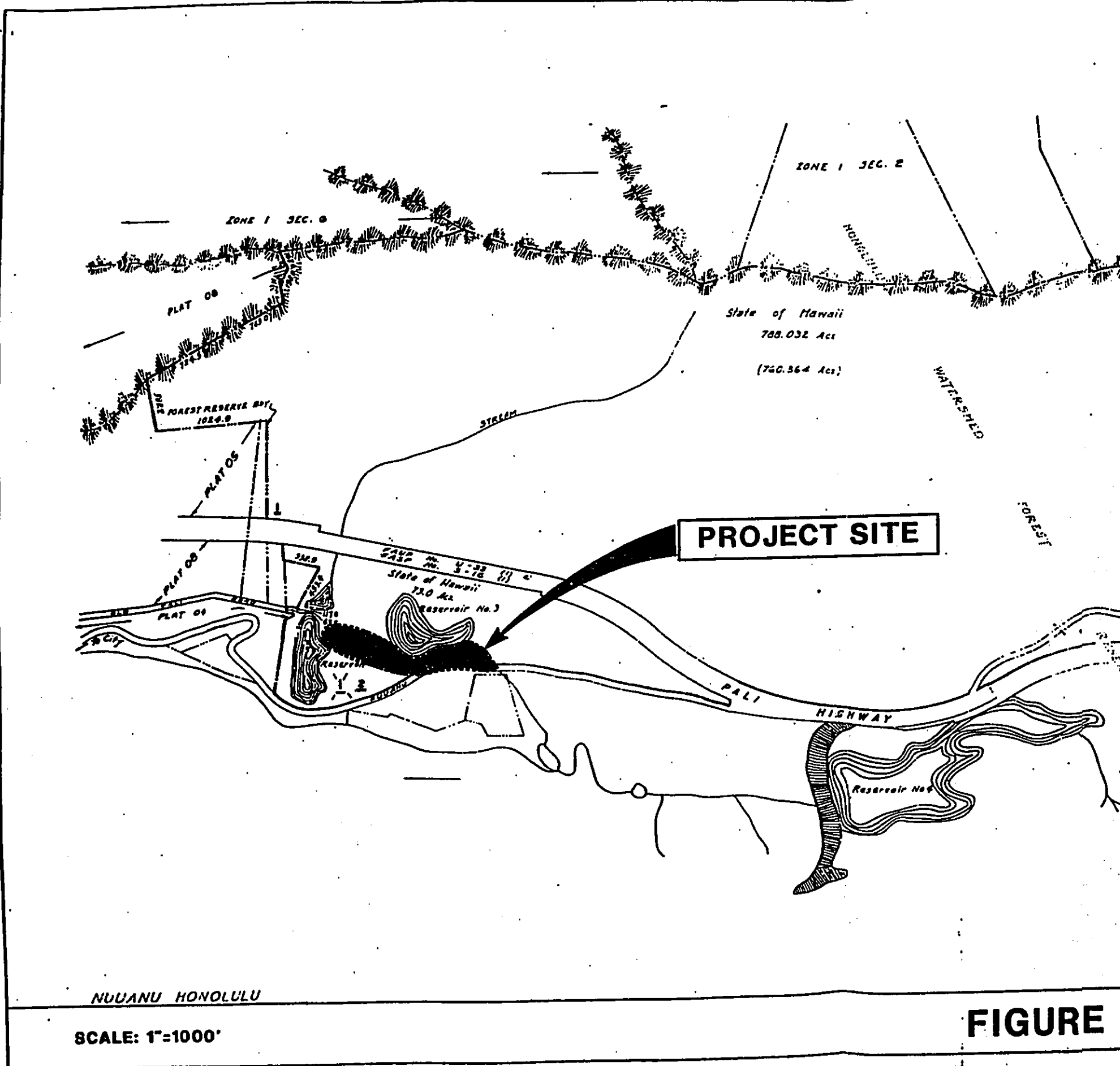


FIGURE 1 LOCATION MAP

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FIGURE

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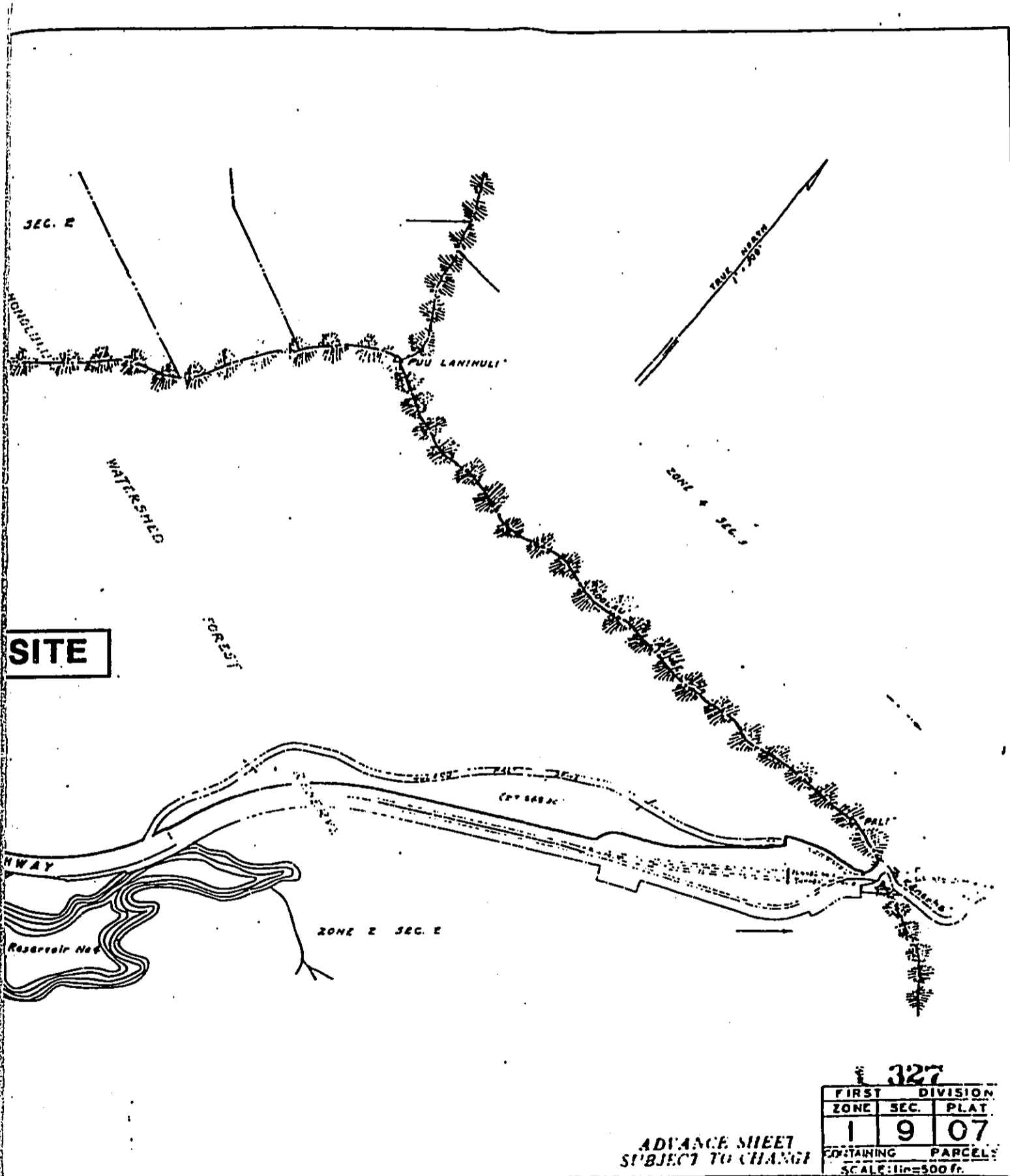


FIGURE 2 LAND OWNERSHIP MAP

2.1.5 Governmental Permits and Approvals

The following permits and approvals will be required:

- National Pollution Discharge Elimination System Individual Permit - State Department of Health
- Erosion Control Permit - Department of Public Works
- Building Permit - Building Department
- Conservation District Use Application - Department of Land and Natural Resources

2.2 PROPOSED FACILITIES

The proposed renovation project involves the installation of a Memcor 900M10 Micro Filtration Unit and appurtenant structures, such as a backwash tank and a clean-in-place (CIP) chemical cleaning tank. The existing aerator building will be demolished and a new aerator building will be constructed in its place. The new aerator building will include a 40 x 43 square-foot concrete slab on the makai side of the building to support the filtration unit and pump sump. Also included are the necessary piping and appurtenances to connect it to the existing system. A 20 x 40 square-foot concrete slab will be constructed to support the backwash and CIP tanks adjacent and makai of the aerator building (see Figures 4, 5, and 6). A temporary 8-inch above-ground pipeline of approximately 1,500 linear feet from the lower aerator to the upper aerator/822-foot 0.2 million gallon reservoir facility will be installed. This measure will provide operational flexibility if the tunnel sources serving the upper aerator become contaminated or must be shut down for repair and renovation. Two 350 gallon-per-minute pumps and a dual compartment sump will also be installed.

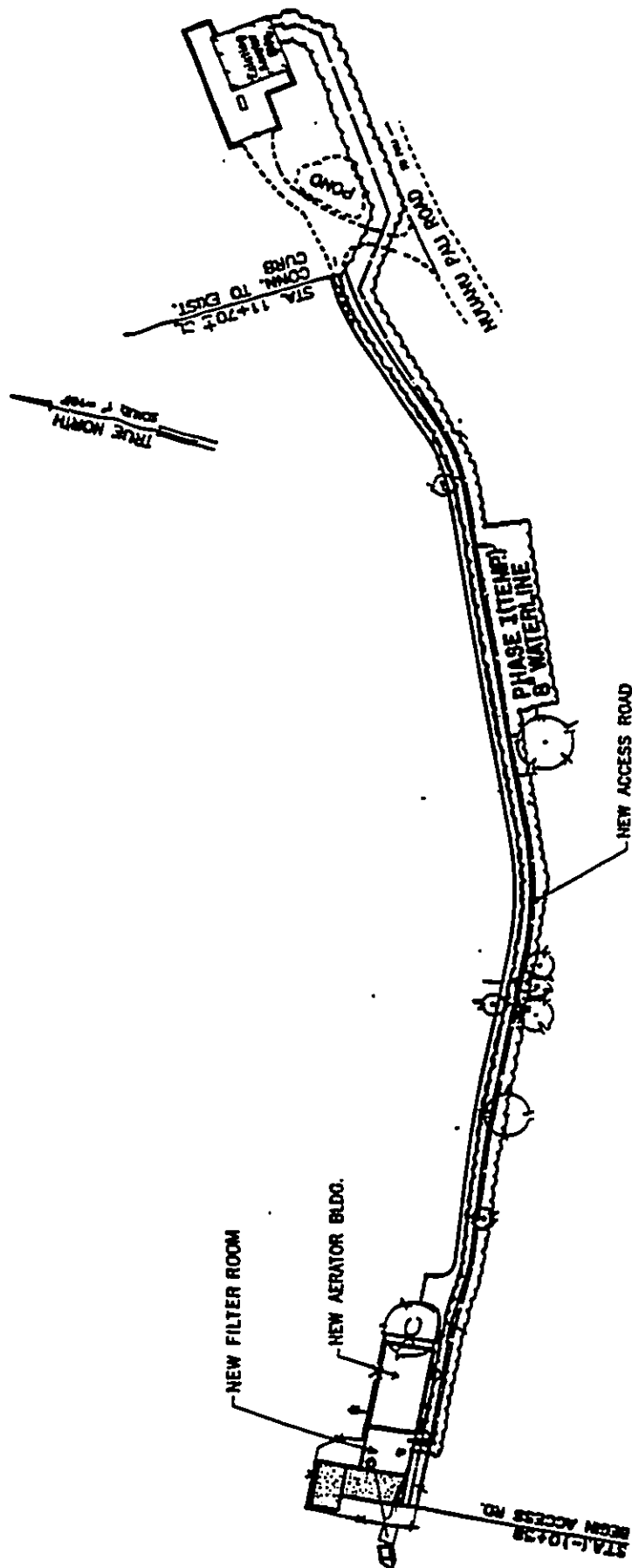
2.3 DEVELOPMENT SCHEDULE AND COST

The project is estimated to last fifteen months. The project commencement is contingent upon satisfying license and permit requirements and upon acquisition of equipment and materials. The preliminary estimated construction cost of the project is \$2,900,000.00.

2.4 NEED FOR THE PROJECT

The proposed renovation work is necessary to bring our Nuuanu Lower Aerator Facility in compliance with Federal Safe Drinking Water Act requirements. The BWS has closed down the Nuuanu Lower Aerator Facility since mid-1993 because recent water samples have shown evidence of cryptosporidium, a protozoa parasite known to cause gastrointestinal illness. The facility will remain closed until a treatment process is in place. In order to remove the cryptosporidium, a micro-filtration system will be installed in two phases. The first phase calls for the installation of a single micro-filtration unit to verify the effectiveness of the process. If the first unit performs as planned, the BWS will proceed with the installation of two additional micro-filtration units. These two additional units will provide the remaining capacity required to treat maximum flow from the sources.

The Nuuanu Lower Aerator Facility aerates between 0.5 to 2.0 million gallons per day (mgd) of water from Nuuanu Tunnels 3 and 3A and the Alewa Heights Spring. Eventually, water from Nuuanu Tunnels 4 and 4B will also be treated at the lower aerator facility. Water from other Honolulu sources is temporarily replacing this system which supplies water to sections of Lower Nuuanu, Alewa, Pauoa, and Makiki. The sources affected with cryptosporidium should be brought back in service as soon as possible because they are critical in our ability to provide quality water service to our customers.



GENERAL PLAN
 SCALE: 1" = 100'-0"

FIGURE 4

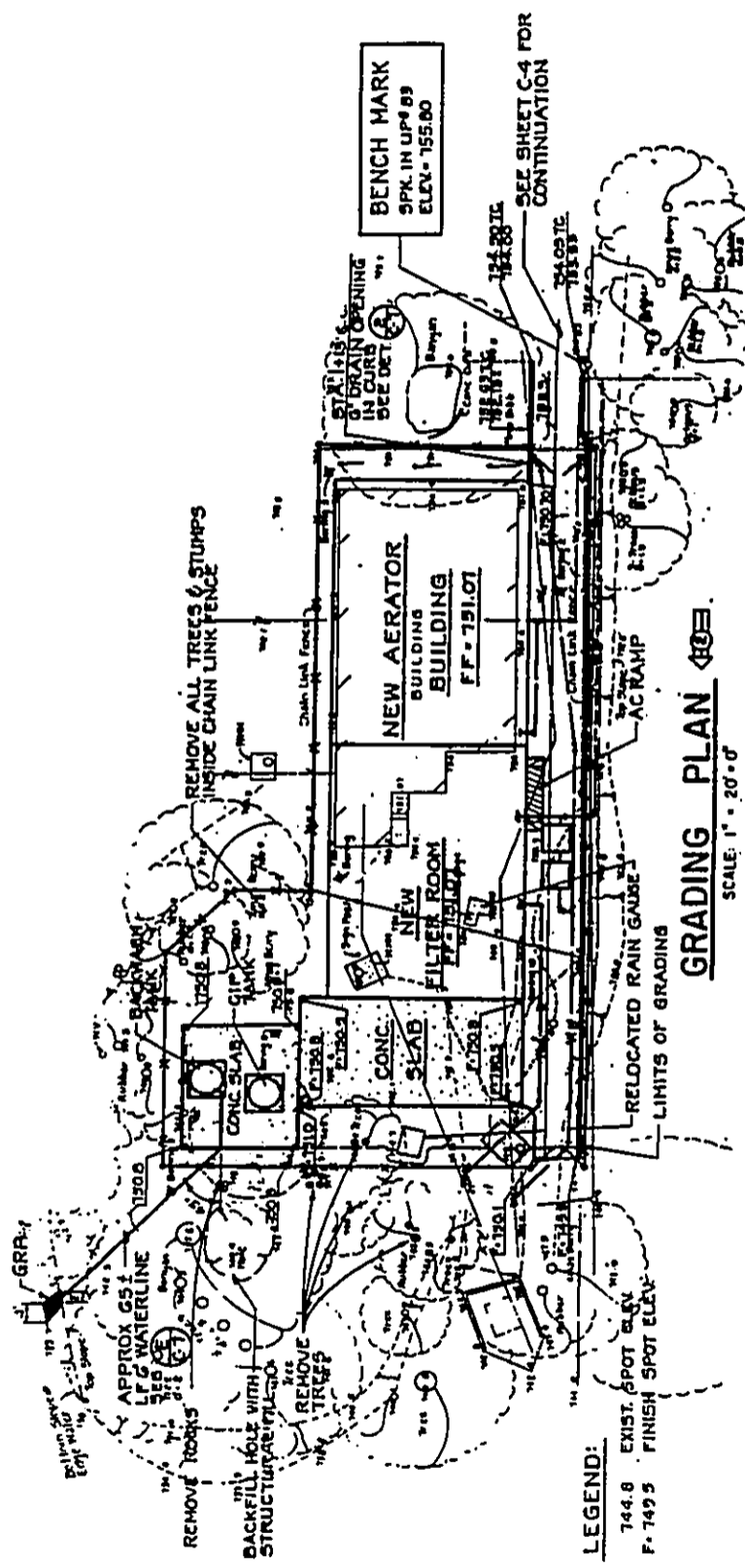


FIGURE 5

SECTION 3

EXISTING CONDITIONS

3.1 EXISTING LAND USE DESIGNATIONS

The Nuuanu Lower Aerator is within the Resource and Protective subzones of the State Conservation Land Use District. All uses within the Conservation District are regulated by the State Department of Land and Natural Resources (DLNR) under Title 13, Chapter 2. The objective of the Resource subzone is to assure sustained use of natural resources in those areas. Lands located within the subzone include those designated for future park and outdoor recreational uses, forest lands with commercial potential, off-shore islands, and lands and territorial water below the vegetation line. The objective of the Protective subzone is to protect valuable resources in such designated areas as restricted watersheds; marine, plant and wildlife sanctuaries; significant historic, archaeological, geological, and volcano-logical features and sites; and other designated unique areas.

The proposed site is zoned P-1, Preservation, on the City and County of Honolulu Development Plan Land Use Map. As such, the uses and development standards are governed by the appropriate State agencies, and not the City's Land Use Ordinance.

3.2 SURROUNDING LAND USES

Most of the land in the vicinity of the project site is preservation zone, P-1, on the eastern side. There is a small residentially-zoned plot on the east side. The Pali Highway runs along the northwest side of the project site and is designated P-2 preservation area. The area on the southern side of the project site is mostly designated as residential.

3.3 TOPOGRAPHY

The regional terrain slopes from the northeast to the southwest, between 5 to 10 percent. During construction of the lower aerator facility, the site was already graded, hence it is essentially level. The ground is at an elevation of approximately 750 feet. The surrounding land is gently sloping. The topography of the project site is shown on Figure 7.

The Nuuanu Valley is surrounded by steep cliffs of the Koolau Range which rise to an elevation of 3,150 feet above mean sea level near the headwaters of the Lulumahu Stream.

The Nuuanu watershed area was substantially impacted by the construction of Nuuanu Reservoirs No. 1 to 4 in the 1930's as a flood control project. The topography generally reflects this drainage design.

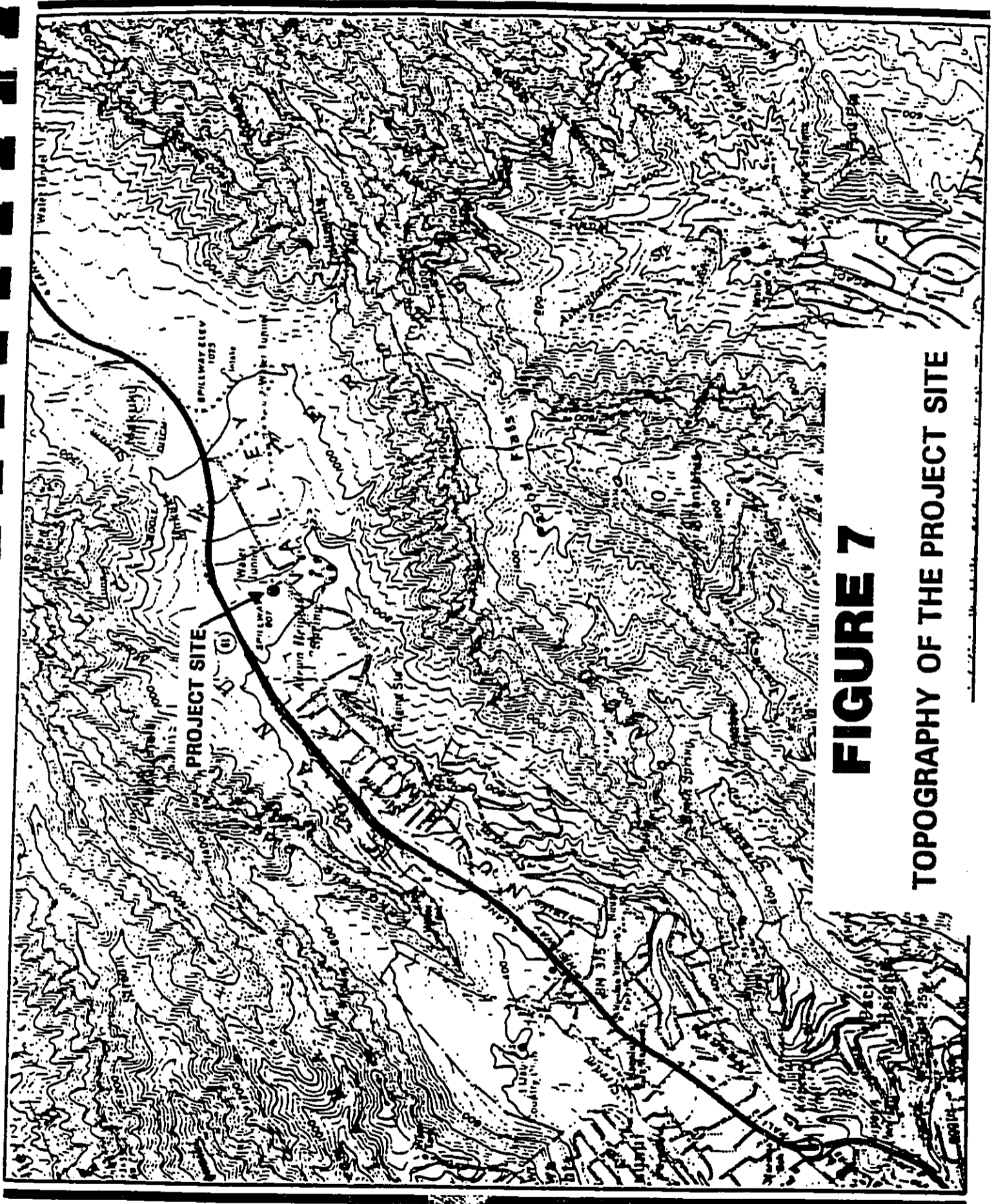


FIGURE 7
TOPOGRAPHY OF THE PROJECT SITE

3.4 SOILS

Soil at the project site is classified by the U.S. Department of Agriculture Soil Conservation Service as Loleka's silty clay with 3 and 8 percent slopes. These soil series consist of well-drained soils on terraces and fans on the windward side of the island. These soils developed in old, gravelly alluvium and colluvium are geographically associated with Alaeloa and Waikane soils. Surface layers are dark-brown silty clay, strongly acidic and roughly 10 inches thick. The subsoil layer is between 46 to 70 inches thick. This soil type is characterized by moderately rapid permeability and slow runoff with low erosion hazard potential. This soil can be used for pastures, homesites, orchards, and truck crops. The natural vegetation of this soil consist of guava, Christmas berry, California grass, Hilo grass and rice grass.

3.5 FLOOD HAZARDS

The well site is located in a hazard Zone D flood area according to the National Flood Insurance Rate Map. Zone D indicates that flood hazards are undetermined. Nuuanu Reservoirs No. 2 and 3 are located adjacent to the aerator facility. The Nuuanu Reservoir No. 4 which is the largest of the four reservoirs is located in the upper valley. These reservoirs are owned by the State and operated by the BWS and DLNR as flood control measures and wildlife habitats.

3.6 EARTHQUAKE HAZARDS

The island of Oahu is classified as a Seismic Zone 1 area as per the Uniform Building Code, 1988.

The least active zone is Zone 0, and the most active zone is Zone 3. Since Oahu is classified as Seismic Zone 1, the risk of an earthquake occurring here is quite minimal. The BWS, however, has adopted the more conservative Zone 3 design standards for all of its structures which offers a higher stability in the event of an earthquake.

3.7 FLORA AND FAUNA

The Nuuanu reservoirs are considered wetland areas which are associated with plants that can sustain wet conditions. The project site may encounter exotic plants planted by some private party. The chances of encountering any rare plant species around the existing facility are minimal because the area is routinely maintained by BWS field maintenance crews.

The unusually wet areas provide habitats for certain types of wildlife. Water birds, like the endemic Hawaiian coot, Hawaiian gallinule and Hawaiian duck, are sighted at the Nuuanu reservoirs. All three endemic species are endangered. A few migratory birds visit the reservoir, but are neither threatened or endangered.

According to the Hawaii State Division of Aquatic Resources, Hawaii does not have any freshwater fish that are endangered or are a rare species. Certain species found in the Nuuanu Reservoirs are the talapia, china catfish, gold fish, mosquito fish, small mouth bass and the o'opu.

3.8 ARCHAEOLOGY

Since the project area already has graded land with an aerator facility, it is unlikely that any archaeological sites or features are still present in the area. The Nuuanu watershed area was substantially impacted by the construction of Nuuanu Reservoirs No. 1 to 4 in the 1930's. The series of four open reservoirs were constructed as a massive flood control project.

As per consultation with the Historic Sites Preservation Office, there is a single historic site, the Kahapa'akai Complex, located on this parcel though its exact location is not determined. In the event that any historic site is encountered during any stage of development, all work will be stopped and mitigative measures will be implemented in coordination with the State Historic Preservation Division.

3.9 GEOLOGY

The Hawaiian Archipelago is mostly volcanic in nature. Oahu is the third largest island in the archipelago and was formed during the shield-building period of the Koolau and Waianae volcanoes. Extensive erosion carved deep valleys in the post-shield-building stage, followed by a quiescent period. A resurgence of minor post-erosional activity called the Honolulu Volcanic Series occurred along the southeast portions of the Koolau shield including Nuuanu Valley and resulted in the eruption of lava, ash and cinders, some of which became imbedded with terrestrial and marine sediments along the coastal plain.

Nuuanu Valley is the result of the extensive erosion that followed the shield building period of the Koolau Volcano. The valley was cut by Nuuanu Stream flowing westward

from the former Koolau summit area, which has since been destroyed by erosion. Gravel and clay formed by weathering and erosion were deposited along the flood plain and onto the coastal plain. During the following glacial periods, sea level rose and fell depositing alluvium and other marine debris. Resumption of volcanic activity following a profound quiescent period resulted in the Nuuanu Valley being filled with lava, ash and cinders. This post-erosional volcanic activity contributed to the flatness of Honolulu's major valleys.

3.10 HYDROLOGY

The Koolau basalt is the principal aquifer in the Honolulu District. Groundwater recharge is transmitted and stored in open spaces within clinkers, lava tubes and cooling cracks. In the wetter areas of the valley, groundwater is also found perched on dense, impermeable lava flows and weathered ash of the Honolulu Volcanic Series.

There are several types of groundwater bodies. The most important and extensive are bodies of basal groundwater, which are found below the coastal areas. In some coastal areas, there is a relatively thick and somewhat impermeable barrier commonly called caprock, which tends to restrict seaward flow of basal freshwater and causes the thickness of the freshwater lens to be greater than normal.

Groundwater is also found confined within lava flows by sheet-like intrusive structures known as dikes. Often times known as high-level water, it has excellent quality under proper hydrogeologic circumstances.

Infiltrated rainwater can be perched atop layers of impermeable material, such as dense lava flows, solidified ash, or clay-rich sediments. Perched water supplies can be

developed by tunnels or by constructing masonry chambers around spring orifices to collect flow and to prevent surface contamination.

In the Nuuanu Valley, groundwater can be found perched on dense, impermeable lava flows and weathered ash of the Honolulu Volcanic Series. This perched water system may be augmented by recharge from nearby Nuuanu Reservoir Nos. 2, 3 and 4.

The storage volume of these reservoirs is as follows:

- 1) Nuuanu Reservoir No. 2 - 7.3 million gallons
- 2) Nuuanu Reservoir No. 3 - 10.7 million gallons
- 3) Nuuanu Reservoir No. 4 - 625 million gallons

Nuuanu Reservoir No. 3 is an open pond with an outlet to Makuku Stream, a tributary of Nuuanu Stream. Water in the reservoir is derived from surface drainage and overflow from Nuuanu Reservoir No. 4, located half a mile up the valley.

Nuuanu Reservoir No. 2 is also an open pond with an outlet to Nuuanu Stream.

3.11 CLIMATE

Upper Nuuanu Valley has a climate that is wetter and cooler than that of the coastal plains. Between 1890 and 1983, average annual rainfall at the Nuuanu aerator was 127.4 inches. Rainfall during this period ranged from 78.2 and 191.1 inches per year. Rain is typically heavy during the winter months of August through December.

The average temperature recorded during the coolest month at Honolulu International Airport is 72.6 F; the average temperature during the warmest month is 81 F. The temperature at the project site would be lower because of increase in elevations and greater

cloud cover.

The prevailing winds are the northeast tradewinds which blow 75 percent of the time. These are more turbulent due to a funnelling effect caused by the valley.

SECTION 4

ENVIRONMENTAL IMPACTS

4.1 CONSTRUCTION IMPACTS

The proposed project will generate impacts typical of site preparation and construction activities. These impacts include air quality, public safety, noise and traffic impacts. These are temporary conditions which can be mitigated through compliance with public regulations and standards.

4.1.1 Noise Impacts

Noise impacts from construction activities are expected during site preparation and excavation. Use of muffled construction equipment is recommended to minimize noise impacts on the nearby community. Noise impacts are expected to be minimal as no homes are located within the immediate vicinity.

All operation will be carried out in conformance with the State Department of Health's regulations regarding noise.

Sound attenuation equipment will be installed to minimize any noise resulting from operation of the micro-filtration units.

4.1.2 Air Quality

Dust from vehicle movement and soil excavation, along with emissions from construction equipments and trucks could result in short term air pollution. Frequent

watering of the construction site should substantially reduce dust emissions. Emissions from construction equipment diesel engines are expected to be low and relatively insignificant.

4.1.3 Traffic Impacts

Slow moving construction vehicles may impede normal flow of traffic on roadways leading to and from construction site. However, these impacts are of a temporary nature and may be mitigated by moving heavy construction equipment during periods of low traffic volumes. Hours of operation are restricted to weekdays from 7 a.m. to 3:30 p.m. Construction vehicles would avoid peak hour traffic.

4.1.4 Discharge Impacts

The disposal of the backwash water (estimated at 2.5 percent of the daily flow, about 16,250 gallons per day for Phase 1 and 50,000 gallons per day total) will be directly into the drainage ditch which may reach the Nuuanu Open Reservoir No. 2. An individual NPDES permit will be required. Surface water impacts are expected to be minimal. The discharge effluent is expected to meet state basic water quality standards for pH, turbidity, and suspended solids because the source water quality is very close to safe drinking water standards. The Nuuanu 3, 3A, 4, and 4B Tunnels and the Alewa Heights Spring are not surface water sources. Rather these groundwater sources are tunnels dug into the perched alluvial aquifers of the Nuuanu Valley and are sealed from most surface water influences. The chemical cleaning process will be self-contained and occur about every two to six weeks as required. Chemical cleaning is performed using a 2 percent solution of Memclean.

Memclean is a mixture of caustic and detergent. An acid cleaning solution of 2 percent concentration will be used following the Memclean cleaning process to achieve neutralization. The Memclean solution can be reused several times. The spent solution will be discharged into tanker trucks and transported to an approved disposal location for treatment at the Sand Island Wastewater Treatment Plant. The spent chemicals will be disposed of in accordance with State Department of Health rules and regulations.

State water quality standards of the discharge effluent are being addressed by the following:

1. The state water quality standard for pH range of 5.5 to 8.0 will be maintained because the source water quality data shows a pH range between 6.0 to 7.5. The source water quality has a low pH because of natural mineral content. The aeration pre-treatment process serves to oxidize the water increasing the pH within acceptable safe drinking water quality levels.
2. Turbidity of the source water is approximately 1.0 NTU or less. The filtration effluent is not expected to increase turbidity. The water quality standard for Class 2 inland waters is 10 NTU during the dry season and 25 NTU during the wet season.
3. Total suspended solids is expected to consist of microscopic particulate matter found in the source water such as plant debris, insect parts, diatoms, and algae. The total suspended solids is expected to be within water quality standards of 55 mg/liter during the dry season and 80 mg/liter for the wet season.

4. **Cryptosporidium:** There are no state water quality standards for microbiological cysts such as cryptosporidium. Cryptosporidium, giardia, and leptospirosis in excessive amounts in surface water may present a health risk if ingested by recreational users of the Nuuanu Stream. However, the occasional discharge of filtered effluent from the treatment facility is not expected to increase the present background levels naturally occurring in the Nuuanu Stream. Cryptosporidium results from the feces of warm-blooded animals, rats, pigs, mongoose, etc., which are a surface influence and therefore more abundantly found in surface water like Nuuanu Stream and the open Nuuanu Reservoirs than in groundwater sources.

Very little amounts of cryptosporidium are expected in the discharge effluent because the tunnel and spring are groundwater sources generally sealed from most surface water influence. The BWS also has plans to further seal and adequately maintain all the tunnel sources from surface influence thereby reducing the possibility of further occurrences of cryptosporidium. High concentrations of cryptosporidium are not expected in the discharge effluent. However, the large volume of the Nuuanu Reservoir No. 2 (7.3 million gallons), which is inaccessible to the public, will serve to diffuse any concentration further down gradient in the Nuuanu Stream.

Water quality data of the discharge effluent to the Nuuanu Stream will be obtained to qualify impact to Nuuanu Stream. Effluent is expected to not reach receiving waters for the

majority of the time and when it does, the effluent should meet state water quality standards. The levels of cryptosporidium in the Nuuanu Stream are not expected to increase because the background levels within the stream are expected to be much higher than the discharge effluent. Water quality data will be submitted to the Department of Health to confirm our expectations.

4.2 IMPACTS ON PUBLIC FACILITIES

4.2.1 Water

The water distribution system in the Nuuanu area is a part of the overall distribution system operated by the BWS which supplies water to the Honolulu district. The water distribution system for the Nuuanu area is shown in Figure 8. There are four tunnel sources and one spring source which feed into this system. An alluvial well station is also planned at the Upper Aerator site. The tunnels discharge to the Nuuanu Upper and Lower Aerator, and any excess water flows down by gravity to the main transmission lines joining the Kalihi and Beretania stations. The tunnel sources are presently being evaluated for compliance to the new EPA Surface Water Treatment Rule which takes effect in 1995. Compliance to this new rule will substantially increase BWS operational costs associated with the micro-filtration plant and monitoring requirements. Water rate increases will eventually result as additional resources are committed to compliance with the upcoming Environmental Protection Agency and Department of Health Safe Drinking Water Rules.

4.2.2 Wastewater

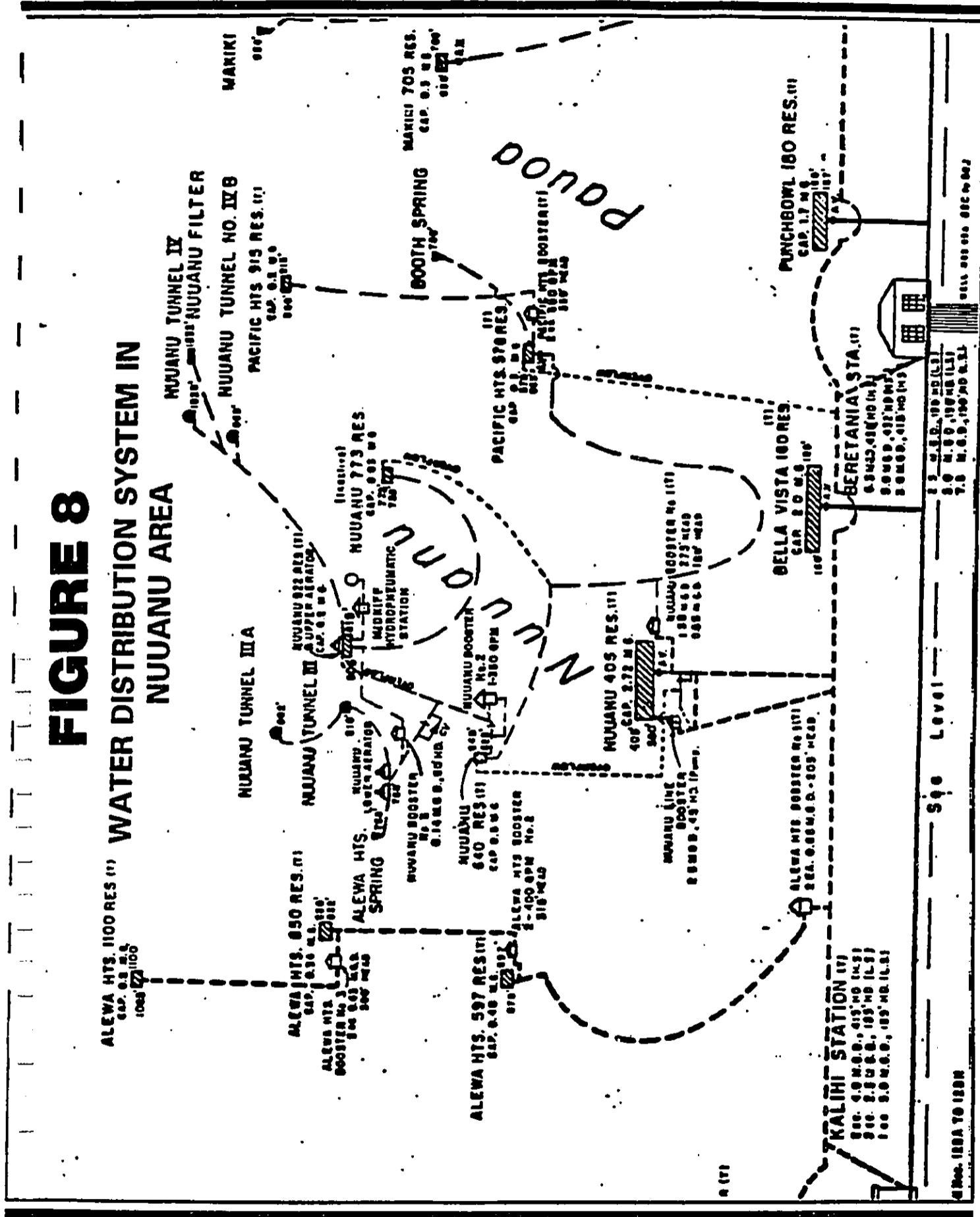
The parcel is located above the State's Underground Injection Control line and within the BWS's No-Pass Zone where ground disposal of sewage is prohibited. The nearest sewer line is located on Old Pali Road, approximately 600 feet south of the site.

As an alternative to the discharge of backwash effluent to surface water, a sewer connection to the Old Pali Road is possible. However, a determination of sewer system adequacy must be conducted through a formal request to the Department of Wastewater Management. Extension of 600 linear feet of sewer line to the Old Pali Road will add to the cost of this project. Furthermore, if the sewer system is inadequate, major regional improvements may be necessary that would make this alternative cost prohibitive.

The proposed project does not plan for any toilets or restrooms at the project site. The BWS facilities are not connected to the municipal sewer system and connections are not planned at this time.

FIGURE 8

WATER DISTRIBUTION SYSTEM IN NUUANU AREA



4.2.3 Electricity

Power will be required to operate the micro-filtration units. Power consumption is not expected to have a significant effect on the power supply to this area. All power requirements will be coordinated with Hawaiian Electric.

4.3 IMPACTS ON NUUANU RESERVOIRS

The construction activities are not likely to have an adverse impact on the endemic waterbirds at the Nuuanu Reservoirs. BWS may be able to schedule the project such that peak construction activities are avoided during the nesting season for these birds, which is generally spring and early summer. However, even if work is conducted during this period, it may have a minimal impact because sufficient foliage surrounds the project site.

4.4 IMPACTS ON STREAMS AND STREAM FLOW

Existing streams will not be affected because construction will not take place in any stream channels. The proposed water treatment renovation project will have no effect on the stream flows in the vicinity.

4.5 SOCIO-ECONOMIC CONDITIONS

The proposed aerator renovation project will have no significant effect on any socio-economic conditions. The upper Nuuanu Valley consists of watershed conservation lands which were the main water sources for early Honolulu town. The middle and lower valley is generally residential with a few commercial uses. The Nuuanu Open Reservoir No. 4 is the

only reservoir opened to periodic recreational uses. Reservoir No. 4 is above the project area and will not be affected. The series of four open reservoirs were constructed as a massive flood control project in the 1930's. Water from these reservoirs are no longer used for potable water needs.

Water rights and allocation issues do not apply because the Nuuanu Tunnels and Alewa Heights Spring are existing, fully-allocated sources.

4.5.1 Economic Conditions

The proposed project will have both long-term and short-term cumulative economic benefits. The construction activity will generate employment of limited duration. Subsequently, the micro-filtration units will be operated and maintained by the BWS.

4.5.2 Population

The BWS is responsible for providing safe drinking water to the people of the City and County of Honolulu. Limitations on the BWS system or its inability to provide necessary services will severely constrain population growth and direction.

The BWS currently serves approximately 850,000 people on Oahu with an average day demand of approximately 156 mgd. The Honolulu district, from Halawa to Hawaii Kai, has an average day demand of approximately 86.5 mgd of which about one-half comes from in-district water sources and the remaining demand is imported from the Pearl Harbor and Windward districts.

Until the aerator renovation is completed, the BWS must supplement 2.0 mgd by extending other Honolulu sources.

SECTION 5

ALTERNATIVES TO THE PROPOSED PLAN

5.1 NO ACTION

The proposed project is intended to bring our Nuuanu Lower Aerator Facility in compliance with the Surface Water Treatment Rule of the Safe Drinking Water Act requirements. Water from other Honolulu sources is temporarily replacing the Nuuanu Lower Aerator's potable water production. Hence, a no-action alternative is not practical for it would lead to a scarcity of water supply. If the Nuuanu Lower Aerator is not brought into compliance with Safe Drinking Water requirements, the BWS will not be able to adequately provide for the water needs of the population of the island in the future. This may result in restriction of new development as well as regional water shortages.

5.2 DELAYED ACTION

The intent of this project is to bring our existing Nuuanu Lower Aerator Facility in compliance with Federal Safe Drinking Water Act requirements. Hence, delaying action would make the stress on existing sources more acute. It would delay the repairs and renovations to the tunnel sources, which would have to be shutdown in the event it does not meet the requirements of the Surface Water Treatment Rule which has a deadline of 1995. Furthermore, any delay would result in higher costs due to inflation.

5.3 ALTERNATIVE OPTION

The proposed renovation at the Nuuanu Lower Aerator is at an existing BWS facility. The BWS could abandon the Nuuanu Lower Aerator Facility and construct a new storage/transmission/distribution system to serve residents in upper Nuuanu Valley. This alternative would be economically more costly and would also involve more significant environmental impacts on the surrounding area.

5.4 ALTERNATE SOURCES

Alternate water sources have been evaluated as part of the Honolulu Regional Water System Improvement Study (BWS 1988). The BWS considered a number of alternatives to potable groundwater sources, such as desalination, development of surface and brackish water sources, and recycling of treated wastewater. However, until such alternatives become acceptable from a technical, health, and/or cost standpoint, the BWS will continue its emphasis on the development of groundwater resources.

Conservation of existing supplies to extend existing water usage is an on-going program of the BWS. The active water conservation program utilizes a variety of methods including public education, inverted residential water rates, leak detection, low flow plumbing fixtures, audits, drought tolerant plants, dual water systems, and water-use restriction plans. Conservation extends existing water supplies for a period of time, but it is not a substitute solution for the timely development of new water sources to meet increasing water demands of Oahu.

The quantity of water saved through conservation techniques, while important, cannot replace the larger quantities required to meet projected water demands. The public can only conserve so much over and above their basic water needs.

SECTION 6

MITIGATIVE MEASURES

Several environmental protection and mitigation measures will be implemented during the design, construction and post-construction phases of the project.

- * During construction, temporary berms and sedimentation ponds will be built at appropriate locations where runoff is expected. An erosion control plan will be prepared and approved prior to initiating site preparation and grading.
- * Noise impacts from construction activities would be mitigated by using muffled construction equipment and limiting construction activities during day time. All operations would be carried out in conformance with the State Department of Health's regulations on noise control.
- * Dust emission impacts from movement of construction vehicles and excavation would be mitigated by frequent watering of the site.
- * Traffic impacts on the roadways leading to the site would be mitigated by moving any heavy construction equipment during periods of low traffic volumes.

SECTION 7

NEGATIVE DECLARATION DETERMINATION

The environmental impacts identified in this environmental assessment have been properly and adequately addressed. Therefore, in accordance with Chapter 343, Hawaii Revised Statutes, it has been determined that an Environmental Impact Statement is not required for the proposed renovation project at the Nuuanu Lower Aerator Facility.

SECTION 8
AGENCIES, ORGANIZATIONS AND INDIVIDUALS TO BE CONSULTED

FEDERAL AGENCIES:

1. **Mr. William Meyer**
District Chief
Water Resources Division
U.S. Geological Survey
Department of the Interior
677 Ala Moana Blvd., Suite 415
Honolulu, Hawaii 96813
2. **Mr. Nathaniel R. Conner**
State Conservationist
U.S. Department of Agriculture
P.O. Box 50004
Honolulu, Hawaii 96850
3. **Mr. Daniel W. McGovern**
Regional Administrator
U.S. Environmental Protection Agency Region IX
75 Hawthorne Street
San Francisco, CA 94105

STATE AGENCIES

4. **Mr. Gordon Matsuoka**
State Public Works Engineer
Department of Accounting and General Services
State of Hawaii
P.O. Box 119
Honolulu, Hawaii 96810
5. **Mr. Herman Aizawa, Superintendent**
Department of Education
State of Hawaii
P.O. Box 2360
Honolulu, Hawaii 96804

6. Mr. Dennis Lau
Clean Water Branch
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801
7. Mr. William Wong
Safe Drinking Water Branch
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96801
8. Mr. Keith Ahue, Chairperson
Department of Land and Natural Resources
State of Hawaii
P. O. Box 621
Honolulu, Hawaii 96809
9. Mr. Don Hibbard, Administrator
State Historic Preservation Division
Department of Land and Natural Resources
State of Hawaii
33 South King Street, Sixth Floor
Honolulu, Hawaii 96813
10. Mr. Rex Johnson, Director
Department of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

CITY AND COUNTY AGENCIES

11. Herbert K. Muraoka
Director and Building Superintendent
Building Department
12. Richard Seto-Mook, Chief
Honolulu Fire Department
13. Donald A. Clegg, Director
Department of Land Utilization

14. **Robin Foster**
Chief Planning Officer
Planning Department
15. **Michael S. Nakamura, Chief**
Honolulu Police Department
16. **Kenneth Sprague**
Director and Chief Engineer
Department of Public Works
17. **Joseph M. Magaldi, Director**
Department of Transportation Services
18. **Felix Limtiaco**
Director of Chief Engineer
Department of Wastewater Management
19. **The Honorable Gary Gill, Chair**
City Council
Honolulu City Council
Honolulu, Hawaii 96813
20. **The Honorable Anthony K.U. Chang**
Senator, Thirteenth Senatorial District
State of Hawaii
State Capitol
Honolulu, Hawaii 96813
21. **The Honorable Bob Nakasone**
Representative, Twenty Seventh Representative District
State of Hawaii
State Capitol
Honolulu, Hawaii 96813
22. **Nuuanu/Punchbowl Neighborhood Board No. 12**
c/o Neighborhood Commission
City Hall, Room 400
Honolulu, Hawaii 96813

SECTION 9

COMMENTS AND RESPONSES TO THE
ENVIRONMENTAL ASSESSMENT

RECEIVED
CITY AND COUNTY OF HONOLULU 942090
HONOLULU MUNICIPAL BUILDING
150 NORTH KING STREET
HONOLULU, HAWAII 96813

Aug 3 12 21 PM '94

BUILDING DEPARTMENT
CITY AND COUNTY OF HONOLULU



HERBERT K. MURAOKA
DIRECTOR AND BUILDING SUPERINTENDENT

PB 94-869

August 2, 1994

VE

MEMO TO: KAZU HAYASHIDA, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY
FROM: HERBERT K. MURAOKA
DIRECTOR AND BUILDING SUPERINTENDENT
SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED
RENOVATION OF THE NUUANU LOWER AERATOR FACILITY
IMK: 1-9-07:02, NUUANU, HONOLULU, OAHU

We have reviewed the subject draft environmental assessment and have no comments to offer. Thank you for the opportunity to review the document.

Herbert K. Muraoka
HERBERT K. MURAOKA
Director and Building Superintendent

cc: J. Harada

August 12, 1994

TO: HERBERT K. MURAOKA
DIRECTOR AND BUILDING SUPERINTENDENT
BUILDING DEPARTMENT
FROM: KAZU HAYASHIDA, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY
SUBJECT: YOUR MEMORANDUM OF AUGUST 2, 1994 REGARDING THE DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR THE PROPOSED RENOVATION OF THE NUUANU LOWER AERATOR FACILITY, IMK: 1-9-07: 02, NUUANU, HONOLULU, OAHU

Thank you for reviewing the Draft EA for our proposed renovation of the Nuuanu Lower Aerator Facility.

We acknowledge that you have no comments at this time.

If you have any questions, please contact Barry Usagawa at 527-5235.

SM:js
cc: K. Hayashida
B. Usagawa

94-2090

(13/15)

P
CITY AND COUNTY OF HONOLULU
FIRE DEPARTMENT
ED OF RECEIVED
942103
3125 KOPAPAE STREET, SUITE 4425
HONOLULU HAWAII 96815

Aug 4 2 51 PM '94
JK



RICHARD R. SETO-MOOK
FIRE CHIEF
EMERGENCY SERVICES BUREAU

August 3, 1994

TO: MR. KAZU HAYASHIDA, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

FROM: RICHARD R. SETO-MOOK, FIRE CHIEF

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED
RENOVATION OF THE NUUANU LOWER AERATOR FACILITY,
TMK: 1-8-07-02 NUUANU, HONOLULU, OAHU

We have reviewed the application for the above subject request and have no objections to the proposal.

Should you have any questions, please call Assistant Chief Attilio Leonard of our Administrative Services Bureau at 831-7775.

Richard R. Seto-Mook
RICHARD R. SETO-MOOK
Fire Chief

AKL:ny
Returning Environmental Assessment report.

August 12, 1994

TO: RICHARD R. SETO-MOOK, FIRE CHIEF
FIRE DEPARTMENT

FROM: KAZU HAYASHIDA, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

SUBJECT: YOUR MEMORANDUM OF AUGUST 3, 1994 REGARDING THE DRAFT
ENVIRONMENTAL ASSESSMENT (EA) FOR THE PROPOSED
RENOVATION OF THE NUUANU LOWER AERATOR FACILITY,
TMK: 1-8-07-02 NUUANU, HONOLULU, OAHU

Thank you for reviewing the Draft EA for our proposed renovation of the Nuuanu Lower Aerator Facility.

We acknowledge that you have no objections to the proposed project. If you have any questions, please contact Barry Usagawa at 527-5235.

SM:js
cc: K. Hayashida
B. Usagawa

94-2103
JK

AT

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BOARD OF WATER SUPPLY

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942151

PETER A. STRICKLAND, Ph.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HAWAII 96833
August 3, 1994

IN REPLY, PLEASE REFER TO:
EMD/5098

Mr. Kazu Hayashida
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96843

Dear Mr. Hayashida:

SUBJECT: COMMENTS ON THE DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED RENOVATION OF THE NUUANU LOWER AERATOR FACILITY, TMK: 1-9-07102, NUUANU, HONOLULU, OAHU

We are in receipt of your Draft Environmental Assessment for the subject project dated June 1994. Please note that the Department of Health (DOH) has already accepted the use of the Memcor continuous microfiltration system for the Nuuanu Lower Aerator by its March 17, 1994 letter to you. Thus, the Department of Health has no comment at this time.

If you should have any questions, please contact the Safe Drinking Water Branch, Engineering Section, at 586-4259.

Sincerely,

Thomas E. Arizumi
THOMAS E. ARIZUMI, Ph.D., Chief
Environmental Management Division

GT:la

August 23, 1994

Mr. Thomas E. Arizumi, Chief
Environmental Management Division
Department of Health
State of Hawaii
Five Waterfront Plaza
500 Ala Moana Boulevard, Suite 250-A
Honolulu, Hawaii 96813

Dear Mr. Arizumi:

Subject: Your Memorandum of August 3, 1994 Regarding the Draft Environmental Assessment (EA) for the Proposed Renovation of the Nuuanu Lower Aerator Facility, TMK: 1-9-07: 02, Nuuanu, Honolulu, Oahu

Thank you for reviewing the Draft EA for our proposed renovation of the Nuuanu Lower Aerator Facility.

We concur that your letter of March 17, 1994 indicates acceptance of the Memcor continuous microfiltration system for use at the Nuuanu Lower Aerator. We acknowledge that you have no other comments at this time.

If you have any questions, please contact Barry Usagawa at 527-5235.

Very truly yours,

Kazu Hayashida
KAZU HAYASHIDA
Manager and Chief Engineer

SM:rk
cc: K. Hayashida
B. Usagawa

94-2151

BOARD OF WATER SUPPLY

Aug 8 9 29 AM '94



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

August 5, 1994

Kazu Hayashida
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
530 South Beretania Street
Honolulu, Hawaii 96843

Dear Mr. Hayashida:

SUBJECT: Draft Environmental Assessment (DEA) for the Proposed
Renovation of the Nuuanu Lower Aerator Facility
Nu'uuanu, Honolulu, Kona, O'ahu
TKK: 1-9-07:002

We have previously commented on a Conservation District Use
Application (CDUA) for emergency construction at the Nuuanu Lower
Aerator Water Treatment Facility. Our review consisted of the
following:

A review of our records shows that there are no known historic
sites at the project location. This area was previously developed,
so it is unlikely that historic sites will be found here. We
believe that emergency construction at the existing Board of Water
Supply water treatment facility as described in the Application
form will have "no effect" on historic sites.

We believe that the actions described in this DEA will also have
"no effect" on historic sites.

Sincerely,

Barry Usigawa

Don Hibbard, Administrator
State Historic Preservation Division

EJ:jk

STATE LANDS, COLLEGE AND
UNIVERSITY LANDS, AND NATURAL RESOURCES
DIVISION
JOHN F. KUYPER
DONALD W. HARRIS
AGRICULTURE DEVELOPMENT
PROGRAM
AGRICULTURE RESOURCES
DEVELOPMENT AND
CONSERVATION AND
RECREATION AND
RECREATION DEVELOPMENT
CONSERVATION AND
RECREATION
HISTORIC PRESERVATION
DIVISION
LAND MANAGEMENT
AND PLANNING
WATER AND LAND DEVELOPMENT
DIVISION

LOG NO: 12337
DOC NO: 9408EJ11

August 16, 1994

Mr. Don Hibbard
State Historic Preservation Division
Department of Land and Natural Resources
State of Hawaii
33 South King Street, 6th Floor
Honolulu, Hawaii 96813

Dear Mr. Hibbard:

Subject: Your Letter of August 5, 1994 Regarding the Draft Environmental
Assessment (EA) for the Proposed Renovation of the Nuuanu Lower Aerator
Facility. TKK: 1-9-07: 02. Nuuanu, Honolulu, Oahu

Thank you for reviewing the Draft EA for our proposed renovation of the Nuuanu
Lower Aerator Facility.

We acknowledge that the proposed project will have no effect on any historic sites.
If you have any questions, please contact Barry Usigawa at 527-5235.

Very truly yours,

Barry Usigawa

KAZU HAYASHIDA
Manager and Chief Engineer

SM:js
cc: K. Hayashida
B. Usigawa

94-2123

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JOHN WALKER
CONTROLLER

942137



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P. O. BOX 115, HONOLULU, HAWAII 96810
LETTER NO. (P) 1705.4

ROBERT P. TAKUSHI
COMPTROLLER
LLOYD L. MEBELMAN
DEPUTY COMPTROLLER

AUG 5 1994

RE

Mr. Kazu Hayashida
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96843

Attention: Mr. Barry Usagawa

Dear Mr. Hayashida:

Subject: Renovation of the Nuuanu Lower Aerator Facility
Nuuanu, Oahu, Hawaii
Draft Environmental Assessment

Thank you for the opportunity to review the subject document. We have no comments to offer nor would we have any objection to a negative declaration.

If there are any questions, please have your staff contact Mr. Ralph Yukumoto of the Planning Branch at 586-0488.

Very truly yours,

Barry Usagawa
GORDON MATSUOKA
State Public Works Engineer

RY:jj

August 16, 1994

Mr. Gordon Matsuoka
Department of Accounting and General Services
State of Hawaii
P. O. Box 119
Honolulu, Hawaii 96810

Dear Mr. Matsuoka:

Subject: Your Letter of August 8, 1994 Regarding the Draft Environmental Assessment (EA) for the Proposed Renovation of the Nuuanu Lower Aerator Facility. TMK: 1-9-07: 02, Nuuanu, Honolulu, Oahu

Thank you for reviewing the Draft EA for our proposed renovation of the Nuuanu Lower Aerator Facility.

We acknowledge that you have no objections to the proposed project.

If you have any questions, please contact Barry Usagawa at 527-5235.

Very truly yours,

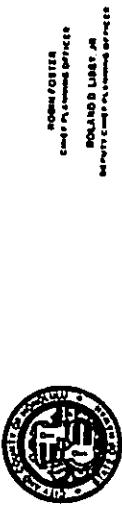
Kazu Hayashida
KAZU HAYASHIDA
Manager and Chief Engineer

SM:js
cc: K. Hayashida
B. Usagawa

94-2137

(8/17)

RECEIVED
 BOARD OF **CHAIRMAN** AND COUNTY OF HONOLULU
 430 SOUTH KING STREET
 HONOLULU HAWAII 96813
 942150
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ROBIN FOSTER
 CHIEF PLANNING OFFICER
 BOARD OF WATER SUPPLY
 HONOLULU HAWAII

August 18, 1994

TH 7/94-4084

AUGUST 5, 1994

MEMORANDUM

TO: KAZU HAYASHIDA, MANAGER AND CHIEF ENGINEER
 BOARD OF WATER SUPPLY
FROM: ROBIN FOSTER, CHIEF PLANNING OFFICER
 PLANNING DEPARTMENT
SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR THE
 PROPOSED RENOVATION OF THE NUUANU LOWER AERATOR
 FACILITY. TRK: 1-9-07: 02. NUUANU, HONOLULU, OAHU

In reference to your memorandum of July 26, 1994, we have reviewed the subject EA and have no objections to the proposed project.

Should you have any questions, please contact Tim Hata of our staff at 527-6070.

RF:fc

ROBIN FOSTER
 Chief Planning Officer

TO: ROBIN FOSTER, CHIEF PLANNING OFFICER
 PLANNING DEPARTMENT

FROM: KAZU HAYASHIDA, MANAGER AND CHIEF ENGINEER
 BOARD OF WATER SUPPLY *Hayashida K*

SUBJECT: YOUR MEMORANDUM OF AUGUST 5, 1994 REGARDING THE DRAFT
 ENVIRONMENTAL ASSESSMENT (EA) FOR THE PROPOSED
 RENOVATION OF THE NUUANU LOWER AERATOR FACILITY,
 TRK: 1-9-07: 02. NUUANU, HONOLULU, OAHU

Thank you for reviewing the Draft EA for our proposed renovation of the Nuuanu Lower Aerator Facility.

We acknowledge that you have no objections to the proposed project.

If you have any questions, please contact Barry Usagawa at 527-5235.

SM:rk
 cc: K. Hayashida
 B. Usagawa

94-2150

POLICE DEPARTMENT 942142
CITY AND COUNTY OF HONOLULU
881 SOUTH BIESTAHIKI DRIVE WATER SUPPLY
HONOLULU, HAWAII 96813 - AREA 2857 (808) 935-3111



MICHAEL S. NAKAMURA
CHIEF
MARIO M. KAKALEI
DEPUTY CHIEF

OUR REFERENCE BS-LK

August 8, 1994

TO: KAZU HAYASHIDA, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

FROM: MICHAEL S. NAKAMURA, CHIEF OF POLICE
HONOLULU POLICE DEPARTMENT

SUBJECT: PROPOSED RENOVATION OF THE NUUANU LOWER
AERATOR FACILITY

This is in response to your request for comments on a draft environmental assessment for the proposed renovation of the Nuuanu Lower Aerator Facility.

This project is expected to have no significant impact on police services. We have no additional comments to make at this time.

Thank you for the opportunity to review this document.

MICHAEL S. NAKAMURA
Chief of Police

By *Eugene Uehura*
EUGENE UEHURA
Assistant Chief of Police
Administrative Bureau

August 16, 1994

TO: MICHAEL S. NAKAMURA, CHIEF
POLICE DEPARTMENT

FROM: KAZU HAYASHIDA, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY *Kazu Hayashida*

SUBJECT: YOUR MEMORANDUM OF AUGUST 8, 1994 REGARDING THE
DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR THE PROPOSED
RENOVATION OF THE NUUANU LOWER AERATOR FACILITY,
TMK: 1-9-07-02, NUUANU, HONOLULU, OAHU

Thank you for reviewing the Draft EA for our proposed renovation of the Nuuanu Lower Aerator facility.

We acknowledge that you have no objections to the proposed project.

If you have any questions, please contact Barry Usagawa at 527-5235.

SM:js
cc: K. Hayashida
B. Usagawa

94-2142

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU 942182
80 SOUTH KING STREET
HONOLULU, HAWAII 96813

AUG 11 11 36 AM '94



KENNETH E. SPRAGUE
DIRECTOR AND CHIEF ENGINEER

ENV 94-185

August 18, 1994

TO: KENNETH E. SPRAGUE, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

FROM: For KAZU HAYASHIDA, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY *K. Hayashida*

SUBJECT: YOUR MEMORANDUM OF AUGUST 10, 1994 REGARDING THE
DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR THE PROPOSED
RENOVATION OF THE NUUANU LOWER AERATOR FACILITY,
TMK: 1-9-07: 02, NUUANU, HONOLULU, OAHU

August 10, 1994

MEMORANDUM:

TO: KAZU HAYASHIDA, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

FROM: KENNETH E. SPRAGUE, DIRECTOR AND CHIEF ENGINEER *KES*

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (DEA)
RENOVATION OF THE NUUANU LOWER AERATION FACILITY
TAX MAP KEY: 1-9-07: 02

We have reviewed the subject DEA and have the following comment:

- During construction, best management practices (BMPs) should be installed to minimize discharge of pollutants to receiving waters.

Should you have any questions, please contact Mr. Alex Ho, Environmental Engineer, at Local 4150.

Thank you for reviewing the Draft EA for our proposed renovation of the Nuuanu Lower Aerator Facility.

We will implement best management practices during construction as indicated in the grading plan to minimize storm water runoff to receiving waters.

If you have any questions, please contact Barry Usagawa at 527-5235.

SM/BU:js

cc: K. Hayashida
Engineering
B. Usagawa

94-2182

RECEIVED
BD OF WATER SUPPLY

United States
Department of Agriculture
Soil Conservation Service
9 23 AM '94

P. O. Box 50004
Honolulu, HI
96850-0001

August 11, 1994

9421:

PE

Mr. Kazu Hayashida, Manager
Board of Water Supply
City and County of Honolulu
530 South Beretania Street
Honolulu, Hawaii 96843

Dear Mr. Hayashida:

Subject: Draft Environmental Assessment (DEA) for the
Lower Aerator Facility TMK: 1-9-07: 02, Nuuanu, Honolulu, Oahu

We have completed our review of the Draft Environmental Assessment (DEA)
for the Proposed Renovation of the Nuuanu Lower Aerator Facility, on
Oahu and have no major concerns. Thank you for the opportunity to
provide comment on such a worthy project.

Sincerely,

Kazu Hayashida
KAZU HAYASHIDA
State Conservationist

cc: Michael Baglinton, D.C., Honolulu Field Office, Honolulu, Hawaii
Edsel Yamada, Chair, South Oahu SWCD, 2630 Kapiolani Blvd,
Honolulu, Hawaii 96826

August 26, 1994

Mr. Kenneth M. Kaneshiro
State Conservationist
Soil Conservation Service
United States Department of Agriculture
P. O. Box 50004
Honolulu, Hawaii 96850-0001

Dear Mr. Kaneshiro:

Subject: Your Memorandum of August 11, 1994 Regarding the Draft Environmental
Assessment (EA) for the Proposed Renovation of the Nuuanu Lower Aerator
Facility. TMK: 1-9-07: 02, Nuuanu, Honolulu, Oahu

Thank you for reviewing the Draft EA for our proposed renovation of the Nuuanu
Lower Aerator Facility.

We acknowledge that you have no objections to the proposed project.

If you have any questions, please contact Barry Usagawa at 527-5235.

Very truly yours,

Kazu Hayashida
KAZU HAYASHIDA
Manager and Chief Engineer

SM:js
cc: K. Hayashida
B. Usagawa

94-2197

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
BOARD OF WATER SUPPLY

PACIFIC BARR PLAZA
311 KAPOLAHU BOULEVARD, SUITE 1200
HONOLULU, HAWAII 96813

9:42:55

94-2385



SEP 1 10 44 AM '94

JOSEPH M. MAGALDI, JR.
DIRECTOR

ANGUS SHIRAI
DEPUTY DIRECTOR

TE-3176
PL94.1.214

August 30, 1994

MEMORANDUM

TO: KAZU HAYASHIDA, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

FROM: JOSEPH M. MAGALDI, JR., DIRECTOR

SUBJECT: NUUANU LOWER AERATOR FACILITY
DRAFT ENVIRONMENTAL ASSESSMENT (EA)
TRK: 1-9-97: 02

This is in response to your memorandum dated July 26, 1994 requesting our comments on the proposed renovation.

Based on our review, we have no objections or comments to offer at this time. However, it should be noted that construction should begin no earlier than 8:30 a.m. and not 7:00 a.m., as mentioned in the EA.

Should you have any questions, please contact Lance Watanabe of my staff at local 4199.

JOSEPH M. MAGALDI, JR.

September 21, 1994

TO: JOSEPH M. MAGALDI, JR., DIRECTOR
DEPARTMENT OF TRANSPORTATION SERVICES

FROM: KAZU HAYASHIDA, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

SUBJECT: YOUR MEMORANDUM OF AUGUST 30, 1994 REGARDING THE
DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR THE PROPOSED
RENOVATION OF THE NUUANU LOWER AERATOR FACILITY,
TRK: 1-9-97: 02, NUUANU, HONOLULU, OAHU

Thank you for reviewing the Draft EA for our proposed renovation of the Nuuanu Lower Aerator Facility.

The majority of the project is within the Board of Water Supply property. However, if construction encroaches into the Nuuanu Pali Drive Right-of-Way, a Street Usage Permit will be obtained and all work in the vicinity of the roadway will begin no earlier than 8:30 a.m.

We acknowledge that you have no other objections or comments to offer at this time.

If you have any questions, please contact Barry Usagawa at 527-5235.

SM/BU:js
cc: K. Hayashida
E. Shiraishi
J. Yamauchi
B. Usagawa

94-2385



DEPARTMENT OF THE INTERIOR

RECEIVED
OFFICE OF THE DISTRICT CHIEF

942435

U.S. GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
677 Ala Moana Boulevard, Suite 415
Honolulu, Hawaii 96813

September 2, 1994

Mr. Kazu Hayashida
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96843

Dear Mr. Hayashida:

The staff of the U.S. Geological Survey, Water Resources Division, Honolulu, Hawaii has reviewed the Draft Environmental Assessment for the proposed renovation of the Nuuanu Lower Aerator Facility, TMK: 1-9-07: 02, Nuuanu, Honolulu, Oahu, and we have no comments to offer at this time.

Thank you for allowing us to review this document.

We are returning the document to your office for your future use.

Sincerely,

William Meyer
District Chief

Enclosure

September 19, 1994

Mr. William Meyer
District Chief
United States Department
of the Interior
U. S. Geological Survey
Water Resources Division
677 Ala Moana Boulevard,
Suite 415
Honolulu, Hawaii 96813

Dear Mr. Meyer:

Subject: Your Letter of September 2, 1994 Regarding the Draft Environmental Assessment (DEA) for Our Proposed Renovation of the Nuuanu Lower Aerator Facility, TMK: 1-9-07: 2, Nuuanu, Honolulu, Hawaii

Thank you for reviewing the DEA for our proposed project.

We acknowledge you have no comments at this time.

If you have any questions, please contact Barry Usagawa at 527-5235.

Very truly yours,

KAZU HAYASHIDA
Manager and Chief Engineer

EM:do
cc: K. Hayashida
B. Usagawa

94-2435

942427
 DEPARTMENT OF LAND AND NATURAL RESOURCES
 STATE OF HAWAII
 DEPARTMENT OF LAND AND NATURAL RESOURCES
 100 SOUTH BERRIDGE STREET
 HONOLULU, HAWAII 96809
 SEP 7 1994
 FILE: 95-64
 SEP 8 1994

The Honorable Kazuo Hayashida
 Manager and Chief Engineer
 Board of Water Supply
 City and County of Honolulu
 630 South Berendse Street
 Honolulu, Hawaii 96813

Dear Mr. Hayashida:

SUBJECT: Draft Environmental Assessment for the Proposed Renovation of the Nuuanu Lower Aerator Facility at Nuuanu, Honolulu, Oahu. (T.M.C. 1-9-97; 07)

We have reviewed the subject Draft Environmental Assessment (DEA) received on July 21, 1994, and have the following comments:

DIVISION OF LAND MANAGEMENT

We concur with Board of Water Supply's assessment that the proposed project is necessary to bring the Nuuanu Lower Aerator Facility in compliance with Public Safety Drinking Water Act. Additionally, we understand that the first phase of the proposed (aerators filtration system) process to eradicate cryptosporidiosis (Parasite removal) is environmental. That is, if the first phase is successful then the Board of Water Supply will proceed with installation of two additional micro-filtration units.

The proposed activity is consistent with the purpose and intent of the presidential proclamation setting aside the land to the City and County Board of Water Supply (Water Works Department) control and jurisdiction.

DIVISION OF AQUATIC RESOURCES

We have no objections to the project from the aquatic resources standpoint. The natural incidence of cryptosporidiosis in surface waters is substantially higher than in the aerator facility, and the discharge water will actually be more drinking water quality. Other activities associated with the renovations should have no effect on surface water habitats or biota.

DIVISION OF FORESTRY AND WILDLIFE

A fire contingency plan should be submitted to the Division of Forestry and Wildlife for approval prior to any construction.

COMMISSION ON WATER RESOURCE MANAGEMENT

The Commission on Water Resource Management has previously commented on this project. Section 4.4 of the document acknowledges that certain standards will not be affected by construction of the proposed project. However, we have no objections to the Draft Environmental Assessment.

OFFICE OF CONSERVATION AND ENVIRONMENTAL AFFAIRS

We currently are processing Conservation District Use Application 95A-29 for the subject project. Please note that the correct location for the project includes the Forensic and Protective Resources. Also, page 4, Section 2.1, of the DEA should be clarified to read that the existing aerator building will be demolished (and not extended as shown in instance number 2).

Thank you for the opportunity to comment on this matter. If you have any questions, please call Cheryl Thomas of our Office of Conservation and Environmental Affairs at 527-0777.

Very truly yours,

Keith W. Ahue
 KEITH W. AHUE

September 20, 1994

Mr. Keith W. Ahue, Chairperson
 Department of Land and Natural Resources
 State of Hawaii
 P. O. Box 621
 Honolulu, Hawaii 96809

Dear Mr. Ahue:

Subject: Your Letter of September 6, 1994 Regarding the Draft Environmental Assessment (EA) for the Proposed Renovation of the Nuuanu Lower Aerator Facility at Nuuanu, Honolulu. Oahu. T.M.C. 1-9-97: 2

Thank you for reviewing the Draft EA for our proposed project. We have the following response to your comments:

1. The Final EA will indicate that the existing aerator building will be demolished in Section 2.2 on Page 8, and that the proposed renovation project is within the Resource and Protective Subzones of the State Land Use Conservation District.
2. A fire contingency plan will be submitted to the Division of Forestry and Wildlife for approval prior to any construction.
3. The proposed project is consistent with the purpose and intent of the presidential proclamation setting aside the land to the Board of Water Supply's control and jurisdiction.
4. The project will not affect any stream channel, surface water habitat or biota.
5. The Final EA and Negative Declaration is anticipated in October 1994 as part of the CDUA application requirement.

If you have any questions, please contact Barry Usagawa at 527-5235.

Very truly yours,

Kazu Hayashida
 KAZU HAYASHIDA
 Manager and Chief Engineer

EM/BU:do
 cc: K. Hayashida, Engineering, B. Usagawa
 94-2427

REFERENCES

REFERENCES

1. "Annual report & statistical summary, July 1, 1990 - June 30, 1991." Honolulu Board of Water Supply, City and County of Honolulu.
2. "Atlas of Hawaii." University of Hawaii, Department of Geography, University of Hawaii Press (1983).
3. "Engineering Report for New Potable Water Sources, Makaha Well VI." Honolulu Board of Water Supply, City and County of Honolulu (October 1992).
4. "Environmental Impact Assessment for an exploratory well at the Nuuanu Upper Aerator Facility Honolulu, Hawaii." Board of Water Supply, City and County of Honolulu (July 1988).
5. "Final Environmental Impact Statement for development of wells, reservoirs, transmission lines and appurtenances at Honolulu, Hawaii." Board of Water Supply, City and County of Honolulu (Sept. 1986).
6. "Geology and Groundwater Resources of the Honolulu-Pearl Harbor Area, Oahu, Hawaii." Board of Water Supply, City and County of Honolulu (1951).
7. "Hawaii Wildlife Plan." State of Hawaii, Department of Land and Natural Resources, Division of Forestry and Wildlife (Jan. 1984).
8. "Oahu Water Plan." Board of Water Supply, City and County of Honolulu (July 1982).
9. "Soil survey of islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii." U.S. Department of Agriculture, Soil Conservation Service (Aug. 1972).
10. Department of Health Administrative Rules, Chapter 11-54, Water Quality Standards, 1992, and Chapter 11-55, Water Pollution Control, 1992.