

May 24, 1976

MEMORANDUM

TO: Honorable Billie Beamer, Director  
Department of Hawaiian Home Lands

SUBJECT: Environmental Impact Statement for Nanakuli  
Resident Lots 4th and 5th Series and Flood  
Control Channel, Nanakuli, Oahu, Hawaii

Based upon the recommendation of the Office of Environmental Quality Control, I am accepting the subject document as satisfactory fulfillment of the requirements of Chapter 343, Hawaii Revised Statutes, and the Executive Order of August 23, 1971. This environmental impact statement will be a useful tool in the process of deciding whether or not the action described therein should or should not be allowed to proceed. My acceptance of the statement is an affirmation of the adequacy of that statement under the applicable laws, and does not constitute an endorsement of the proposed action.

When you make your decision regarding the proposed action itself, I hope you will weigh carefully whether the societal benefits justify the environmental impacts which will likely occur. These impacts are adequately described in the statement, and, together with the comments made by reviewers, will provide you with a useful analysis of alternatives to the proposed action.



bcc: Dr. Richard E. Marland  
Environmental Quality Commission

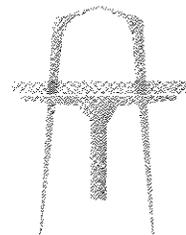
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NANAKULI RESIDENT LOTS 4th AND 5th SERIES  
AND  
FLOOD CONTROL CHANNEL

FINAL  
ENVIRONMENTAL IMPACT STATEMENT

Prepared for the  
STATE OF HAWAII  
DEPARTMENT OF HAWAIIAN HOME LANDS

WILSON  
OKAMOTO  
& ASSOCIATES



ENGINEERS  
ARCHITECTS  
HONOLULU, HAWAII

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Office Of The Governor  
880 Kalia Avenue  
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Honolulu, Hawaii 96813

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January 1976

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## I. PROJECT DESCRIPTION

### A. Introduction

The following statement has been prepared to determine the environmental impacts which will be generated by the proposed Nanakuli Residence Lots, 4th and 5th Series and Flood-Control Channel. The format and scope have been derived in accordance with the State of Hawaii Environmental Quality Commission (EQC) interim rules and regulations for Environmental Impact Statements (EIS), as of May 1975.

The Hawaiian Homes Commission Act (Act of July 9, 1921, 42 Stat. 108, c. 42) was enacted by the Congress of the United States for the purpose of rehabilitating the Hawaiian race through a return to the soil. The Hawaiian Homes Commission was established by the Act to administer its provisions. The Act allows native Hawaiians (any descendent of not less than one half part of the blood of the races inhabiting the Hawaiian Islands previous to 1778), to become lessees of the Hawaiian Homes Commission.

The Constitution of the State of Hawaii, which was drafted in 1950, some 9 years prior to Statehood, made provision for the inclusion of the Hawaiian Homes Commission Act as a law of the State and further provided that the conditions or limitations placed by Congress on the State regarding the amending process of the Act would be adhered to by the State and its people. The Admission Act (Act of March 18, 1959; 73 Stat. 4) in Section 4 required the State by way of compact to adopt the Hawaiian Homes Commission Act as a provision of the State Constitution and provided that amendments to the Act could be effected only in a manner prescribed by Congress.

General restrictions have been placed by Congress on the ability of the Department and other public officials to control and dispose of Hawaiian

Home Lands. The Department may not sell, lease, use or dispose of available lands except in the manner and for the purposes set out in the Act or as may be necessary to complete any valid agreement of sale or lease in effect at the time of the passage of the Act. The power and duties of the Governor and the Department of Land and Natural Resources do not extend to land having the status of Hawaiian home lands except as provided in the Act (SS 205 and 206, HHCA, 1920).

The project proposes to develop 62 acres of land for approximately 223 single family houselots of roughly 7500 sq. ft. each (Figure 3). The cost of the site development will be borne entirely by the State Department of Hawaiian Home Lands, and the potential homeowner is not obligated to reimburse the Department for the site improvement cost. The flood-control aspect of this project is designed to channel storm or flood waters safely through the proposed subdivision and the existing homesteads.

#### B. Objectives and Needs

The objective for the proposed development is to implement one of the purposes of the Hawaiian Homes Commission Act of 1920, as amended, which is to provide single family residential lots to the native Hawaiians as a means to their rehabilitation. The proposed action is the construction of the 4th and 5th Series of the Department of Hawaiian Home Lands Residence Lots and Flood Control Channel. These incremental developments have proceeded in accordance with available State funding.

According to the latest available figures, December 1974, the Department of Hawaiian Home Lands has approximately 3,088 applicants for homestead lands

on Oahu. Of this number, approximately 733 have expressed preference to be located in the Nanakuli project area.

The following evaluation and suggestions for future development and use of Nanakuli Hawaiian Home Lands was taken from a study entitled, "A Land Inventory and Land Use Study for the Dept. of Hawaiian Home Lands", prepared by Arthur Y. Akinaka, Ltd.

"Marginal pasture land mauka; also waste land; improve streets and install drainage structures; add residence lots; phase existing 1/2-acre lots out and replace with smaller lots with installation of intermediate streets; install sewer system."

The flood-control channel is requisite to the development of the Nanakuli Residence Lots, 4th and 5th Series. There are existing problems of flooding in the low-lying developed areas of Nanakuli during heavy rain-storms. Additional surface run-off due to the proposed development, will further intensify this problem. The flood-control channel should eliminate the existing flood problem, efficiently control the additional run-off from the proposed project, and be capable of handling the surface run-off generated by future Hawaiian Homes developments within the drainage basin.

### C. Location and Size

#### 1. Subdivisions

The Nanakuli Residence Lots, 4th and 5th Series, is located in Nanakuli, Oahu, Hawaii. (Figure 1). The Tax Map Key which further delineates this project is 8-9-07. Two geographically distinct tracts of land totaling 62± acres, situated on both sides of the valley will be developed under this project (Figure 2). The larger of the two (51± acres), designed for a 188± lot layout, is constrained by a ridge to the north and is nestled between the

Nanakuli Residence Lots 2nd and 3rd Series, and the Multi-School Complex.

This tract will henceforth be referred to as Area #1 (Figure 3). The other tract of land, (11± acres), to the south will be subdivided into approximately 35± lots, and is bounded by Nanakuli Ave. and the Multi-School Complex to the north, Nanakuli Stream to the south, the Nanakuli Residence Lots, 1st Series, to the west, and the third series of homes now under construction to the east. This tract will be henceforth referred to as Area #2 (Figure 3).

1. Flood-Control Channel

The flood-control channel which is to be constructed in conjunction with the subdivision development of Area #1 will generally adhere to the existing alignment of Nanaikapono Stream. A slight deviation from the existing alignment occurs seaward of Farrington Highway (Figures 4 & 5).

D. Description

1. Subdivision (Please refer to Figure 3)

Houselots within the proposed subdivided area will be approximately 7500 square feet in size. General site development will include clearing and grubbing, excavation and filling, utility installations, and street system.

The topography of the site has been considered in order to maximize utilization of the natural terrain. Lots and access roads have been oriented with the intent of minimizing grading by following the general contours of the site. The State Department of Health, "Public Health Safety and Welfare Requirements", and the City and County Grading Ordinance, No. 3968, will be complied with to avoid extensive erosion and sediment production.

Haleakala Avenue, one of the two major access roads to the new

developments, will be extended to connect with Nanakuli Ave., completing a circuitous route of the valley. Minor paved roads with necessary appurtenance will be constructed to service the new lots. Roads will conform to the standards of the City and County of Honolulu. Street lighting, fire hydrants, sidewalks and traffic signs will be provided to enhance traffic safety of the area.

Water lines will be installed, linking the new houselots to the existing county water system.

Partial implementation of the sewage master plan is scheduled in conjunction with this development. The project sewage development plans consist of constructing a gravity sewage system within Area #1, and a gravity sewer main along Haleakala Avenue. This main will be designed to also accomodate parts of the Nanakuli Intermediate/High School Complex, the future Nanakuli Elementary School, the Second Series Nanakuli Residence Lots, and lots adjoining Haleakala Avenue. This gravity sewer main will be designed to connect to the future (tentatively 1981) Nanakuli Interceptor sewer line extending along Farrington highway from Waianae to Nanaikapono Elementary School.

During the interim period, one of the following alternate disposal systems will be implemented:

- a. Construct a temporary disposal system within the former Camp Andrews site. This system will consist of "ganged" cesspools with possible supplementary underground disposal fields.
- b. In the proximity of the Haleakala Ave./Farrington Hwy. intersection, construct a lift station, and force main along Farrington Hwy. to Lualei Place.

Several lots in Area #1 adjacent to the existing third series lots are unserviceable by the proposed sewer system due to adverse grade differentials, and will be provided with cesspools conforming to State and County regulations.

During this phase of project implementation, Area #2 will be provided with cesspools conforming to State and County regulations. Long term plans call for the eventual construction of a gravity sewer main along Nanakuli Avenue. This future main should provide service to the lots of the third series, the lots of Area #2, and the lots adjoining Nanakuli Avenue. There will be certain lots in these areas unserviceable by the proposed sewer system due to adverse grade differentials.

Electrical service will be from the Hawaiian Electric Co.'s power line, which presently runs through the project site. This power line will be appropriately relocated within the subdivision. The wiring for street lights, electrical services and telephone services will be accommodated in underground conduits.

2. Flood-Channel (See Figures 4 & 5, Channel Details)

The Flood-Control Channel will be designed in accordance with the City and County of Honolulu's Storm Drainage Standards. Construction work to be performed under the jurisdiction of other governmental agencies will be done in accordance with their requirements.

The alignment of the proposed flood channel, east of Farrington Hwy., is expected to basically follow the existing Nanaikapono St. It will be done in accordance with their requirements.

The alignment of the proposed flood channel, east of Farrington Hwy., is expected to basically follow the existing Nanaikapono St. It will be lined with concrete through the new subdivision, down to its point of exit on the coast. Bridges will be constructed or culverts installed, wherever the channel crosses an existing or proposed road. The maximum width of the channel will be approximately 25.67 ft. Approximately 390 acres contributes to this drainage basin resulting in a discharge of 1850 cubic feet per second (cfs) at the outlet.

It is necessary to alter the present alignment of the stream between Farrington Hwy. and the coast, due to the existing orientation of the culvert which passes under the highway. The natural channel which is now 160 ft. away from the nearest school building, (Nanaikapono Elementary School), will be re-aligned to within 75 ft. of this same building. This realignment of the channel will necessitate the removal and relocation of a quonset building to another site on the campus. This structure will be relocated at no cost to the Dept. of Education. The channel, in the school area, will be protected by a combination concrete wall and chain-link fence barrier approximately 6 ft. high.

#### E. Funding

Funding for the Nanakuli Residence Lots, 4th and 5th Series and the Flood-Control Channel were appropriated through Legislative Act 218/74, Item F-2 and Legislative Act 218/74, Item F-6 respectively. The total cost for the entire project described by this statement is estimated to be approximately 5 - 6 million dollars.

#### F. Phasing and Timing

Construction of the Flood channel and subdivision is estimated to begin in the spring of 1976 and will be undertaken simultaneously. The duration of construction is estimated, under present conditions and constraints, barring unforeseen problems and delays, to be approximately 18 months.

## II. DESCRIPTION OF THE EXISTING ENVIRONMENTAL SETTING

### A. Project Sites

#### 1. Land Form

The site for Area #1 (Figure 3), slopes gradually for the most part, and becomes increasingly steeper as it approaches the mountain ridge immediately behind. Area #2 (Figure 3) will be situated on a site that is relatively level for the most part, then slopes steeply down towards Nanakuli Stream.

#### 2. Soils and Physical Features

a. Soils. The accumulated alluvial surface soils of Area #1 (Figure 3) are of a clayish material. Subsurface investigation has disclosed that the soil is composed of clay and decomposed rock layers with a random incidence of boulders.

The soils of Area #2 (Figure 3) appear to consist of clay, cobblestones, boulders and decomposed rocks.

b. Access. Access to Area #1 (Figure 3) site at this time is by Haleakala Ave. which is a 15-18 foot wide, unimproved paved road. The condition of the pavement is generally poor and it is without curbs, gutters and sidewalks. Area #2 (Figure 3) is provided with access by way of Nanakuli Ave. This 40 ft. wide paved road, which has recently been improved, is in excellent condition.

c. Nanakuli Stream. Nanakuli Stream is the larger of the two streams traversing the valley. It flows along the south side of the valley, crosses Farrington Hwy. and exits into the ocean via Nanakuli Beach Park. This stream frequently has a sand bar completely blocking its mouth. Nanakuli

Stream in its natural state has been estimated to handle a capacity of approximately 6700 cfs. This capacity is more than capable of accommodating the additional inflow from the 35± lots of the smaller subdivision.

d. Nanaikapono Stream. Nanaikapono Stream runs along the north side of the valley and through Area #1 (Figure 3). It then meanders through a tract of existing Hawaiian Homes residences, bisects a large vacant lot of 30.05 acres belonging to the State of Hawaii, crosses under Farrington Hwy. and a set of railroad tracks, through Nanaikapono Elementary School grounds, then a rocky coastal strip of Nanakuli Beach Park, and finally over a shallow coral reef out to the ocean.

The strip of land occupied by the stream through the existing residential area is currently not leased to any individuals, but is reserved for flood control measures. Generally, the land traversed by the stream is void of any man-made improvements. The exceptions are the crossings at Mano Street, Haleakala Avenue, Farrington Highway and intermittent encroachments of individual cultivation at adjoining residential lots and the pedestrian bridges on the Nanaikapono Elementary School site.

Although this stream is normally not flowing, during periods of heavy rainfall large quantities of storm waters are conveyed to the ocean by this stream. Numerous residents inhabiting lots adjacent to the existing stream have reported the inadequacy of the stream as a flood deterrent and hazard of flooding during such heavy rains. The drainage area contributing to the Nanaikapono Stream discharge is approximately 390 acres.

A resident spoke to field investigators of the several occasions over the past 15 years his home and lot have been completely flooded, requiring several months to thoroughly dry. During such heavy rains, the

section of Mano St. crossing Nanaikapono Stream becomes a raging torrent of water, making passage impossible.

This stream for the most part is overgrown with grasses, shrubs and various small trees. It is also apparent that the stream is used by some of the residents as a general dump for old appliances, furniture, yard cuttings and other unwanted objects. The culverts passing under Mano Street were completely clogged with such cast-off material and vegetation which would, in times of heavy rain, force the water to go over the road rather than under. Furthermore, analysis of the aforementioned culverts indicate these culverts (unclogged) lack the required capacity.

The short segment of the stream between Farrington Hwy. and the ocean is relatively cleared and has an average width of 15-20 ft. The seaward half of this segment has vertical walls hewn from coral and rock at almost mean sea level. Two pedestrian bridges span this stream permitting access between the elementary school and the beach park.

e. Coast and Offshore Area. The reach of Nanaikapono Stream extends approximately 3500 ft. into the Valley and discharges across a rocky headland into the ocean. The rocky headland is flanked on both sides by Nanakuli Beach Park. The stream flows across a very shallow coral bench, seaward of the rocky headland, approximately 50 ft. wide. The coral bench bares at low tide and drops very steeply to about a six foot depth at the seaward face.

Nanakuli Beach Park, to the south of the rocky headland, is a pocket beach about 500 feet long by 125 feet wide and is bounded on its southern side by another rocky headland, Piliokahe Point. The beach to

the north of Nanaikapono Stream is long and wide, extending to Maile Point. Both beaches have steep foreshores with medium to coarse fairly well-sorted calcareous sand. The beaches are good swimming beaches and heavily used.

There was a two to three foot swell from the northwest on the day of the field study, and the rocky headland appeared to concentrate wave energy as the waves were larger and shoaling further offshore than at the beaches on either side. The nearshore waters off Nanaikapono Stream were very turbid with suspended sand, probably due to the wave action.

Waves have reportedly reached as far up the channel as the second pedestrian bridge during heavy winter surf. The entire north shore coastline typically experiences these storm surf conditions annually.

f. Currents and Circulation. Nearshore current studies were conducted on March 29, 1975 for typical ebbing and flooding tides. The currents were measured approximately 100 yards from shore in water depths of 12 to 18 feet. The wind was very light and offshore during the morning ebbing tide, increasing in velocity and switching to onshore during the flooding tide in the afternoon. This is typical for the Waianae Coast, where tradewinds predominate, diminished in intensity after crossing two mountain ranges, and often switch to onshore winds in the afternoon due to local convection. The swells were two to three feet from the northwest.

Generalized current patterns for the ebbing and flooding tide are shown in Figure 6. During the ebbing tide the current at all depths set southeast parallel to the shore at approximately 0.2 to 0.3 feet per second (fps). There was a slight onshore component to the current, pro-

bably due to wave transport. During the flooding tide the current reversed, setting northwest, again parallel to the shore and at approximately 0.2 fps. The flooding tide current appeared to lag the tide by almost two hours, that is, during and for almost two hours after slack tide there was little or no water movement. The flooding tide current also set into the wind, which at this time was 8 to 12 mph from the west, indicating that the tidal currents are a dominant force in the nearshore circulation system.

Studies by Sunn, Low, Tom and Hara (S.L.T. & H. 1962) indicated that the currents off Waianae, approximately five miles north of the study site, are largely induced by the tides. They found that the currents reversed with the tides, generally moving southeasterly and northwesterly approximately parallel to the shoreline. Variations in this flow pattern were observed particularly at various points where the effect of bottom topography, eddies, and long-shore currents became evident. They also found that in the absence of strong onshore or offshore winds, the tidal currents tended to flow with the bottom contours, while strong offshore or onshore winds tended to impart a slight seaward or shoreward movement, respectively.

The Water Quality Program for Oahu Study (1971) found that the nearshore current pattern (water depth of 19 feet) off Kahe Point, just south of the study site, was reversing due to the strong influence of the tides. They also found a net flow onshore at Kahe Point.

In summary, the nearshore currents in the project area appear to reverse with the tide and tend to move parallel to the shoreline. Some

seaward or shoreward movement may occur depending on the magnitude and direction of the wind, and the amount of wave action. The currents were found to flow with velocities in the order of 0.2 fps.

### 3. Views and Other Aesthetics

The scenic views are unobstructed and have remained basically unchanged over the past generations. The mountain vista maintains its rugged and wild character, with little evidence of artifact or urbanization. There are no high-rises along the stark Nanakuli Coast to obscure visual appreciation of the ocean and spectacular sunsets.

### 4. Biological Factors

The biological factors associated with this project have been divided into three separate sections due to different settings. The first part is an assessment of the flora and fauna identified on the dry, open subdivision sites. The second part is an assessment of the flora and fauna identified within and along the banks of the proposed alignment for the flood-control channel. The third section assesses the existing offshore conditions.

#### a. Subdivisions

Flora. The relatively low rainfall (sporadic 19.6 inches per year), coupled with the generally poor soil conditions are chiefly responsible for the sparse landscape consisting of extremely hardy plants. The dominant flora of Area #1 (Figure 3) are primarily grasses ranging from 2 to 5 ft. high (Cynodon dactylon and Bracharia mutica), and many both large and small kiawe trees (Prosopis pallida). Area #2 (Figure 3) is characterized by grasses (Cynodon dactylon, Bracharia mutica, Chloris radiata) and shrubs (Desmanthus virgatus) ranging from 1-3 ft. in height.

No known varieties of endangered or rare plant species were encountered.

The flora, consisting primarily of shrubs and weeds include the following:

Trees:

Kiawe (Prosopis pallida)

Shrubs:

Haole Koa (Leucaena leucocephala)

Prickly pear cactus (Opuntia megacantha)

Native Cotton (Gossypium tomentosum)

Nehe (Lipochaeta integrifolia)

Spleen amaranth (Amaranthaceae amaranthus)

Hialoa (Waltheria americana)

Desmanthus (Desmanthus virgatus)

Ground covers and vines:

Bermuda grass (Cynodon dactylon)

Para grass (Brachiara mutica)

Finger grass (Chloris inflata, Chloris radiata)

Hakonokono (Eragostis tenella)

Purslane (Portulaca oleraceae)

Scarlet passion flower (Passiflora foetida)

Wild spiny cucumber (Cucumis dipsaceus)

Fauna. The animal life is limited to the common birds and feral creatures. The dry, open region is incapable of sustaining large populations of animals. No rare or endangered species of wildlife are known to inhabit the area. Animals observed within the general project area include:

Birds:

Mynah (Aeridotheres tristis)

Dove (Streptopelia chinensis)

Sparrow (Passer domesticus)

Cardinal (Richmondia cardinalis)

Japanese "white eye" (Zosterops palpebrosus)

Often the incidence of birds in a specific area is seasonal, so the possibility of other birds frequenting the area is more than likely.

Feral life within the area consists of field mice, rats and mongoose.

b. Flood Channel

Flora. The existing channel and adjacent banks are overgrown with various grasses, shrubs and an assortment of trees. The growth in some portions is quite lush and thick, where water collects and is not able to drain. No known rare or endangered species of plants were encountered within or along the banks of the channel. The observed flora include the following:

Trees:

Kiawe (Prosopis pallida)

Mango (Mangifera indica)

Hau (Hibiscus tiliaceus)

Christmas berry tree (Schinus terebinthifolia)

Shrubs:

Haole koa (Leucaena latisiliqua)

Native Cotton (Gossypium tomentosum)

Achyranthes (Amaranthaceae achyranthes)

Cockleburr (Xanthium stumarium)

Groundcover and vines:

Guinea grass (Panicum maximum)

Bermuda grass (Cynodon dactylon)

Henry's crabgrass (Digitaria adscendens)

Bristly foxtail (Setaria verticillata)

Scarlet passion flower (Passiflora foetida)

Fauna. Small "medaka" or minnows, of the family Poeciliidae, inhabit the trapped ponds of water scattered along the length of the stream. Other denizens include toads, tadpoles, and frogs. Wildlife from the subdivision sites and adjacent areas may frequent the vicinity of the stream seeking food or water. There are no known rare or endangered fauna associated with this stream area.

c. Offshore

With the aid of scuba gear, underwater slates, transect line, and meter square quadrat, divers recorded basic biological data from two areas (nearshore and 300 feet seaward) at each of three inshore reef top locations. Biological study site A was located approximately 2000 feet north of Nanaikapono Stream, off Kalaniana'ole Beach Park; study Site B was located directly seaward of Nanaikapono Stream; and study Site C was located directly seaward of Nanakuli Stream. The locations are shown on Figure 7. The following is a general description of the three study sites.

Site A. The nearshore area of site A consists entirely of sand. The sand continues from the beach seaward to a distance of approximately 300-400 feet and a depth of 15 ft. At this point, there is an abrupt change to a hard coral substratum with low (6 inch) relief and very little live coral (visual estimate of 2% live coral) of the genus Porites.

Although the hard substratum of the offshore area appears to be suitable for coral growth, little live coral is found there. It appears that seasonal shifting of the nearshore sand mass and wave surge generated sand abrasion are the most effective inhibitors to coral growth in this area. Few fishes and sea urchins are present at site A (Tables 1, 2 and 3).

Site B. The nearshore area of site B (30 feet seaward of the shallow coral bench at the mouth of Nanaikapono Stream) consists of a relatively flat, hard coral substratum with a few sand pockets and a few eroded coral blocks protruding 1 - 1½ feet above the substratum. Live coral coverage of the substratum is 5% as estimated by the transect-quadrat method (Table 1), with the most commonly observed genera being Porites, Montipora, and Pocillopora.

The offshore area appears nearly the same with exceptions that live coral coverage increased to 14%, less sand is present, and relief, in a few areas increases to four feet as a result of erosion of the existing old reef flat (Table 1).

There seems to be little difference in the numbers of species and individuals of fishes and sea urchins at both areas of site B (Tables 2 and 3).

Site C. The nearshore area of site C (20 feet seaward of the coral bench which Nanakuli Stream flows around) is characterized by large (up to six feet in diameter) eroded coral blocks, sand pockets, and an irregular reef top. Live coral coverage was 19%, the highest of any area studied. Two genera of corals, Porites and Pocillopora were the most common in this area (Table 1). The largest numbers of fishes and sea urchins were observed in this area (Tables 2 and 3) a result of increased habitat space provided

by the ruggedness of the substratum. The offshore area of site C consists entirely of sand.

Coral Bench. Visual observations made while walking on the coral bench, over which Nanaikapono Stream flows, indicate that the stream has an effect on the tidal pools that exist on the coral bench. The effect is not one of the fresh water outflow, but rather of sand scouring. The stream bed provides the only storage site for sand along the length of the coral bench. As a result, the area directly seaward of the stream mouth has been scoured clean, while on either side of the stream there is an algal mat present on the bench.

A very small flow of brackish water was observed entering the ocean at this point but was rapidly dissipated by the ocean waves sweeping over the coral bench. Tide pools to either side of the drainage ditch were nearly filled with loose clean sand. Because of the shifting nature of this sand (in the tide pools) it was the author's opinion that macroscopic infaunal constituents would be poorly developed, perhaps containing a few sand burrowing crustaceans, Emerita Pacifica and sand burrowing echinoderms, Brassus latecarinatus and Metalia spatagus. Thus, the major portion of the field effort was used to study the more complex reef communities seaward of the shallow coral bench.

TABLE I - CORALS

Genus and Species Names for the Corals

<u>Study Site</u>	<u>Genus</u>	<u>Species</u>	<u>% Cover</u>
A	<u>Porites</u>	<u>lobata</u>	2% (visual estimate)
B	<u>Porites</u>	<u>lobata</u>	inshore- 1.6% offshore- 7.8%

<u>Study Site</u>	<u>Genus</u>	<u>Species</u>	<u>% Cover</u>
C	<u>Porites</u>	<u>compressa</u>	inshore- -- offshore- 1.6%
	<u>Pocillopora</u>	<u>meandrina</u>	inshore- 1.6% offshore- 3.1%
	<u>Montipora</u>	<u>verrucosa</u>	inshore- 1.6% offshore- 1.6%
	<u>Porites</u>	<u>lobata</u>	inshore- 9.4% offshore- --
	<u>Porites</u>	<u>compressa</u>	inshore- 3.1% offshore- --
	<u>Pocillopora</u>	<u>meandrina</u>	inshore- 6.3% offshore- --

TABLE 2 - ECHINODERMS

Genus and Species Names for the Echinoderms

<u>Study Site</u>	<u>Genus</u>	<u>Species</u>	<u>Total # Observed</u>
A	<u>Tripneustes</u>	<u>gratilla</u>	31
B	<u>Tripneustes</u>	<u>gratilla</u>	160
	<u>Echinothrix</u>	<u>diadema</u>	7
	<u>Echinothrix</u>	<u>calamaris</u>	17
	<u>Echinometra</u>	<u>mathaei</u>	71
C	<u>Tripneustes</u>	<u>gratilla</u>	5
	<u>Echinothrix</u>	<u>calamaris</u>	2
	<u>Echinometra</u>	<u>mathaei</u>	274

TABLE 3 - FISHES

Genus and Species Names for the Fishes

<u>Genus</u>	<u>Species</u>	<u>Site A</u>	<u>Site B</u>	<u>Site C</u>
Acanthurus	sandvicensis			2
"	nigrofuscus		5	20
"	mata		2	8
"	achilles			10

<u>Genus</u>	<u>Species</u>	<u>Site A</u>	<u>Site B</u>	<u>Site C</u>
Acanthurus	nigroris			1
Naso	unicornis		2	1
Zebrasoma	flavescens			2
Thalassoma	duperreyi		13	27
"	ballieui		1	1
Stethojulis	axillaris		8	15
"	albovittata		1	2
Halichoeres	ornatissimus			1
Parupeneus	bifasciatus			2
Abudefduf	imparipennis		5	2
Pomacentrus	jenkinsi		2	8
Pervagor	spilosoma		2	
Amanses	sandwichinensis	1		1
Rhinecanthus	rectangulus	1		
Taenianotus	triacanthus		1	
Zanclus	canescens			1

##### 5. Precipitation and Temperatures

Nanakuli is a relatively dry coastal area receiving about 19.6 inches of rainfall annually. The region experiences occasional heavy rainstorms which produce the bulk of the annual rainfall, and are capable of flooding the low-lying areas. The U.S. Weather Bureau calculated on a theoretical basis that a 50 year storm, persisting for 2 days, would result in 15" of rainfall.

The annual average high and low temperatures are 85 and 65 degrees farenheit, respectively.

6. Historical and Archaeological

An object of historical interest passes over Nanaikapono Stream. This is a set of old railroad tracks which runs parallel along the makai side of Farrington Highway, and is included in the Hawaiian Register of Historic Places. An application has been processed by the State Department of Land and Natural Resources for the railroad to be included in the National Register of Historic Places.

According to the State Department of Land and Natural Resources, Historic Section, there are no records of any sites or objects of archaeological significance located on the proposed Hawaiian Homes Subdivision Sites in Nanakuli Valley. These lands have been previously improved and utilized for ranching purposes, and it is very unlikely that any archaeological sites remain on the properties (See Appendix B).

7. Land Use

With the exception of twelve lots, the project site for the Nanakuli Residence Lots 4th and 5th Series is classified by the State Land Use Commission as urban district. However, the City and County Detailed Land Use Map (DLUM) classifies the project area as Agricultural (AG-1).

B. Surrounding Areas

1. Land Uses

A 2300 acre tract of land falls under the jurisdiction of the Department of Hawaiian Home Lands. The designated properties are reserved for the residential or agricultural uses of persons of Hawaiian ancestry, as specified by the Hawaiian Homes Commission Act of 1920.

The original Nanakuli Hawaiian Homes Subdivision consists primarily of older structures and is situated on the relatively level areas near the entrance to the valley. The second series, completed only a few years ago, is situated against the sloping north side of the valley. Construction of the third series is currently underway. Just west of this soon to be completed third series subdivision is the Nanakuli Multi-School complex for intermediate and high-school students. Nanaikapono Elementary School is located just outside of the valley between Farrington Highway and the ocean. Nanakuli Beach Park runs along the shore establishing a seaward boundary for the community. A commercial business district stretching along Farrington Highway serves the basic needs of the residents of Nanakuli. Nanakuli Valley is a rural suburban residential area, and includes most of the typical supportive facilities. (See Figure 3).

The balance of undeveloped land in Nanakuli Valley is classified by the State Land Use Commission as Agricultural and Conservation.

## 2. Social Factors

The total population of the Nanakuli area, according to the Census of the Population compiled by the U.S. Department of Commerce, Bureau of the Census, has increased from 2745 people in 1960, to 6506 people in 1970.

The population for the entire Waianae coast area, of which Nanakuli is a part, has also been increasing rapidly over recent years. In 1960, there were approximately 16,500 people inhabiting the coastal length from Kaena Pt. to Nanakuli, compared to over 24,000 people in 1970.

The lifestyle amongst the Nanakuli people can be best described as "Hawaiian Style". The residents are of Hawaiian or part-Hawaiian extraction as is required by the Hawaiian Homes Commission Act of 1920, and have

retained a great deal of their culture and heritage. Due to ethnic, cultural and economic homogeneity within the area, the community as a whole has been able to perpetuate their chosen life-style in the face of rapid growth and development.

The "Hawaiian Style" of life is summarized by Robert Gallimore in the following excerpt: "While it is popularly held that the Hawaiian People are deficient in all sorts of areas which we consider essential to "successful" living, such generalizations are nearly always based on an economic frame of reference and ignore the importance attached by Nanakuli residents to human relationships. If one can depict Hawaii's other ethnic groups as achievement-oriented in social and economic terms, then one must view the Hawaiian people as being affiliation oriented. By this we mean that most Hawaiian People will choose to honor a commitment to a friend, provide aid to another person, seek out situations of good fellowship, and so forth, before they will choose personal economic gain"<sup>1</sup>. The median number of years of school completed by Nanakuli residents, 25 years and older is 10.4 years. This is considerably below the statewide median of 12.3 years of completion.

### 3. Economic Factors

The median income of families in Nanakuli as determined by the 1970 Census is 9,733 dollars annually. This figure is somewhat less than the median income of families statewide, which is 11,554 dollars annually.

The great majority of men in Nanakuli are employed in some form of manual labor. Of these men, half hold or held, before retirement, jobs in the semi-skilled categories of heavy equipment operators, truck drivers, machine operators in non-construction work, policemen, firemen, and sailors.

<sup>1</sup> Gallimore, Studies in a Hawaiian Community: Na Makamaka o Nanakuli, Bishop Museum, Honolulu, Hawaii, 1968, pg. 10.

TABLE 4 - USUAL OCCUPATION BY AGE (MALES)<sup>2</sup>

<u>Age</u>	<u>OCCUPATION</u>			<u>Total %</u>
	<u>Skilled or Higher %</u>	<u>Semi-Skilled %</u>	<u>Un-Skilled %</u>	
Under 30	4.3	65.2	30.4	100
30 - 44 years	25.0	53.1	21.9	100
45 - 65 years	58.3	37.5	4.2	100
66 years & over	40.0	20.0	40.0	100
All ages	30.0	51.0	19.0	100

Another one-fifth of the men hold such unskilled jobs as construction laborers, longshoremen, warehousemen, and groundskeepers. Thirty percent of the men are skilled craftsmen, foremen, and clerical or sales employees.

Approximately 40% of the men work on the Waianae Coast; another 45% of the men travel from 20-44 miles to work each way; the remainder travel a distance of 12-15 miles each way.

In addition to their own wages, many of the men have supplemental sources of income for their households. Forty-one percent of the wives are working and another 50% of the wives worked at some previous time. A great number of families supplement their diets by fishing or growing produce at home.

#### 4. Support Facilities

a. Water. A 500,000 gallon water tank situated above the proposed developments at approximately the 350 ft. level, and a pumping station on the corner of Nanakuli and Piilani Avenues, provides service for domestic

2. R. Gallimore, Studies in a Hawaiian Community: Na Makamaka o Nanakuli, Bishop Museum, Honolulu, Hawaii, 1968, pg. 25.

consumption in the area. The existing water facilities were designed to accomodate the domestic consumption demands exerted by Hawaiian Homes developments (existing and proposed).

b. Sewage. There is currently no sewer coverage in the Nanakuli area. Disposal has been accomplished by the installation of cesspools in the individual lots.

Present plans indicate that "Section 3 of Nanakuli Interceptor Sewer Trunk Line", is tentatively scheduled for construction in 1981, pending availability of funds. This planned sewer line will extend along Farrington Hwy. from Waianae to Nanaikapono Elementary School.

c. Drainage. Drainage is accommodated in the residential areas by storm drains, catch basins, curbs and gutters. The surface run-off is ultimately collected and discharged by the 2 streams which run along either side of the valley.

d. Electricity. Electrical power serving the subdivision is received from the Hawaiian Electric Company Station at Kahe Point.

e. Schools. The long neglected educational facilities for Nanakuli have only recently been accelerated. A new Multi-School Complex, for grades 7-12, has been in operation for several years in upper Nanakuli Valley. This facility boasts unique circular classroom and administration buildings, fine athletic facilities and a master plan for future expansion as required by community growth and subsequent need. This complex is situated adjacent, and in between the two subdivision sites of this project.

Nanaikapono Elementary School, which serves the Nanakuli area, is presently overcrowded and must maintain several buildings which are over

30 years old. This situation and the fact that Nanaikapono Elementary School is located in the tsunami inundation zone, resulted in the planning of a new elementary school. This school is currently in the design stage, and will be located on the multi-school complex site (See Figure 3).

f. Parks and Recreation. The Nanakuli residents have excellent access to a great variety of outdoor recreation. These activities include hunting, fishing, swimming, skin diving, camping, hiking, picnicking and surfing, amongst others.

Nanakuli Recreation Center is located on the beach alongside of Nanaikapono Elementary School. The outdoor recreational facilities include basketball courts, volleyball courts and baseball diamonds; all of which are equipped with night lights. There are also designated camping grounds, two comfort stations, a semi-sheltered small boat harbor, and a children's playground with appropriate equipment, much of which has been subject to vandalism.

The recreation center offers to both youths and adults, organized activities, and arts and crafts programs. The center also serves as a community meeting hall capable of holding 500 persons.

Planned for the future, are improved lighting facilities, replacement of equipment at the children's playground, a wading pool and tennis courts.

During non-school hours, the centrally located multi-school complex grounds provide open area available to neighboring residents for various non-supervised recreational pursuits.

g. Transportation. Farrington Highway, a 4-lane undivided highway, is the only thoroughfare linking Nanakuli to Honolulu. The distance is approximately 30 miles, and traveling time by automobile varies around

40 minutes depending on traffic.

Recently, the City and County has provided regular bus service to the Waianae Coast area from Honolulu.

h. Library. The closest State Library is the Waianae Branch, located approximately 5 miles further up the coast.

i. Health Facilities. The recently operational Waianae Coast Comprehensive Health Center located at Mailiilii Pt., provides medical service to the Nanakuli residents. This federally funded center employs 3 full-time physicians and includes x-ray and lab services, minor surgery and general clinical functions. Twenty-four hour on-call service is available to the community.

Future plans pending additional funding, are 24-hour emergency medical services and hopefully, a hospital by 1980.

Ambulatory service is provided by the adjacent City and County Fire Station, which works in conjunction with the Health Center.

j. Fire Station. The Nanakuli Fire Station is located on the corner of Nanakuli Avenue and Mano Avenue, less than a mile from the proposed subdivisions.

k. Police Station. The closest Police Station is the Waianae Sub-Station, roughly 5 miles away in Waianae town.

### III. PROBABLE IMPACT OF PROJECT

#### A. SOCIAL

##### 1. Benefits

Oahu has been subject to an acute shortage of moderately priced single family dwelling units over recent years. The Hawaiian people, who are so accustomed to "living off of the land", have found it nearly impossible to maintain the torrid pace established by a new and technological culture. This has kept the Hawaiian people at a distinct economic disadvantage in the competition for habitable lands. Habitable, in terms of the potential to raise food-plants, easy access to the ocean for fishing and separation from areas of intense urbanization.

The proposed development is specifically intended for use by families of Hawaiian ancestry as a means to their rehabilitation.

In the long run, the construction of the flood channel will improve the general public safety and welfare of the residents occupying the low-lying flood-hazard areas along Nanaikapono Stream.

##### 2. Population

This development anticipates the influx of 223± new families to the region. On the basis of the Hawaiian Home Lands survey, a factor of 6 persons per family is assumed to project the new population for this development. Accordingly, with 223± new single family residential lots, an increase in the population by approximately 1338 persons could be expected.

##### 3. Public Safety

During construction, no compromise of safety will be made. Only conventional equipment will be used. Blasting is not anticipated, but should

it be necessary, all pertinent regulations will be complied with.

The channel, throughout most of its length will be protected by a 4-foot high chain link fence.

#### 4. Neighborhood Character

The implementation of Nanakuli Residence Lots, 4th and 5th Series, will not alter the existing neighborhood character. The ethnic, cultural and economic homogeneity of the community will be maintained despite the influx of new families.

#### 5. Relocation

The subdivision sites are presently undeveloped. No relocation of any family, farm or institution is anticipated if the subdivisions are implemented.

The realignment of a short section of the flood-control channel as it crosses the Nanaikapono Elementary School grounds will necessitate relocation of an existing quonset work pavilion.

### B. Economic

#### 1. Tax Base

The subdivision site will not remove any land which is generating property tax. Lands owned by the Department of Hawaiian Home Lands are generally exempt from taxes except for residential lots which are taxable after seven years of occupancy.

#### 2. Agriculture

Due to the sparse rainfall and generally poor soil conditions, the agriculture potential of the project sites is severely limited. The lands could possibly be utilized as cattle pastures with the scattered

kiawe trees, shrubs and grasses providing forage.

### 3. Employment.

The subdivisions and flood channel will provide temporary employment opportunity during the construction period.

Most of the new residents will probably commute to their present jobs, until such time that comparable employment is available in the Nanakuli area.

## C. Environmental

### 1. Physical

a. Grading. This development envisions no adverse excavations, embankments, or scarring of the lands and hillsides. However, during the clearing, grubbing and grading sequences, it is unavoidable that the sites will become increasingly vulnerable to the natural elements and subsequent erosion. Every effort will be expended to minimize and mitigate the adverse effects anticipated for the duration of the construction work.

During the site preparation phase, temporary silting basins will be utilized. The exact number and locations of these basins will be determined as the need arises. Similar settling basins have been satisfactorily employed in the Nanakuli Residence Lots, 3rd Series Development.

All regulations and requirements concerning cuts, fills, area to be opened, drainage and other relevant operations as specified by the City and County of Honolulu Grading Ordinance, No. 3968, will be complied with. Strict adherence to the Grading Ordinance will minimize the environmental distress incurred during the developmental phase, and prevent long-range

irreversible impacts of adverse nature.

b. Drainage. During heavy rains, the quantity of surface run-off from the proposed subdivision will be increased, due to the increased area of impervious surfaces such as paved roads and rooftops. In order to cope with the cumulative drainage effects imposed by all urbanization on the north side of the valley, a flood channel is to be constructed. This mitigative action will be necessary to redress the existing, as well as the anticipated flood problems in the low-lying areas along the channel.

Storm drains, catch basins, curbs and gutters will be provided in the proposed subdivisions to accommodate drainage within the subdivision.

c. Air Quality. The subdivision and channel developments are not expected to have any significant impacts on air quality. The generation of a certain amount of dust and noise is to be expected during construction operations. These temporary nuisances will be minimized by strict enforcement of the following:

- 1) Department of Health's Public Health Regulation, Chapter 43, Air Pollution Control and Chapter 44A, Vehicular Noise Control for Oahu.
- 2) Department of Accounting and General Services Specifications, Section 1G - Environmental Protection, and Section 2C - Grass Planting.

The specific pollution control measures to be applied will depend upon the actual field conditions encountered and will be specified during the design and construction phases. These measures may include sprinkling water, curtailment of activities during strong wind conditions, restricting the area of operation and the use of dust palliatives.

d. Water Quality. The water quality of the Nanakuli area will not be adversely affected by the subdivision and flood control channel developments. Upon completion the subdivision is not expected to discharge pollutants outside of the site.

The cesspools provided for some of the new lots are not expected to adversely affect the water quality in the Nanakuli areas. No adverse influence upon the water quality of the Nanakuli area is expected to result if the ground disposal, interim sewage disposal alternative is implemented. Upon implementation of the permanent sewerage system, the interim cesspools will be filled in accordance with D.O.H. regulations.

Possible increased flow in Nanaikapono Stream, resulting from the conversion of undeveloped land into residential homesites and the conversion of the stream to a flood control channel for the residential development will not have a measurable detrimental effect on the nearshore water quality and the marine environment in general. This is based on three observations:

- 1) The first is that the marine environment is already naturally stressed by sand movement.
- 2) Secondly, wave action and nearshore currents should rapidly mix and disperse the stream discharge.
- 3) Rainfall is sparse on the leeward coast of Oahu, minimizing the amount of discharge.

A slight increase in the sediment load of the flood channel is initially expected during storms, however, with the implementation of grassing and landscaping by the individual residents, sediment runoff is expected to diminish.

e. Public Utilities. The demand created by the proposed subdivision for public utilities has already been planned for. An interim sewer

disposal system to accomodate sewage from the new residences will be utilized until hook-up with the proposed County interceptor line along Farrington Hwy. can be established (See Section I.D.1.). Assurances have been received from the City and County Board of Water Supply that an adequate water supply exists to meet the needs of their development. Electrical and telephone lines will be installed to adequately serve the subdivision sites.

f. Traffic. During construction there will be an unavoidable increase in general traffic and the number of large construction vehicles on the roads to the work sites. This increase will be due to the necessary transport of construction equipment and materials, in addition to the commuting labor force and the normal business traffic associated with such projects.

The proposed subdivisions will result in increased traffic along Haleakala Ave., Nanakuli Ave., and possibly at the Farrington Hwy. - Haleakala Ave. intersection.

The 2nd Series subdivision was used as a model for forecasting traffic to be generated by the implementation of the 4th and 5th Series.

Traffic counts taken indicate a vehicle/residence ratio of .61 during the peak hour. There are 188 lots in the 4th and 5th Series, which have direct access to Haleakala Ave. The number of vehicles anticipated from Series 4 and 5 is:

$$188 \times .61 = 115 \text{ vehicles}$$

Significant impacts on Haleakala Ave. are not anticipated due to the increase in traffic. Capacity analysis indicates the present characteristics of the traffic flow on Haleakala to be one of stable flow. The

characteristic of increased traffic flow on the existing Haleakala Avenue is anticipated to be somewhere between stable and approaching unstable flow.

The Department of Hawaiian Home Lands is planning a road improvement project for Haleakala Avenue, due to its generally poor existing condition. The improvements will be designed in accordance with the City and County of Honolulu standards for secondary roads.

Traffic counts were taken to evaluate the present capacity of the Farrington Highway/Haleakala Ave. intersection, and to determine possible effects that the forecasted traffic may have on the intersection.

Sufficient traffic counts were not taken to conclusively establish signalization warrants, which are based on actual or on forecasted traffic if the development abuts the highway. In this case, the proposed subdivision is approximately 1.5 miles into the valley. The counts taken, however, indicate volumes which may warrant signalization of the intersection.

The State Department of Transportation, Highways Division, indicates that the existing 4-lane undivided highway has sufficient capacity to accommodate the traffic generated by the proposed development. (See Appendix IX.)

The Highways Division, Traffic Section, has plans to conduct a thorough study in the near future to determine whether signalization is warranted at the intersection.

g. Solid Waste. Waste and excess material generated during the site preparation and construction phase of this project will be removed and disposed at a site provided by the Contractor. The City will be informed of the location of the disposal site when the application for a grading permit is made. The disposal site will also fulfill the requirements of the City and County Grading Ordinance.

Solid wastes produced by the residents of the proposed subdivisions will be removed on a regular basis by the City and County refuse collection and disposal crews.

h. Noise. A certain level of noise is to be expected during the development phase. The unavoidable noise produced by essential construction equipment and activities will be kept to a minimum, occurring only during the daylight hours. No work will be permitted at night.

The residents of the proposed subdivisions, and their normal activities are not expected to create excessive noise pollution on the surrounding environment. Probable noise sources include children at play, motor vehicles, power tools, lawnmowers, etc. These minor residential disturbances will be periodic and well within the limits of human tolerance.

i. Aesthetics. The residential development should not create any adverse visual effects. Landscaping in terms of trees, shrubs, and grassed areas by the individual lot owners will enhance the appearance of the subdivisions.

The flood channel and accompanying protective fencing may be visually distracting. However, the benefits received will far outweigh the aesthetic deficiency imposed by the flood channel.

j. Historical and Archaeological. A portion of the railroad tracks included in the Hawaiian Register of Historic Places will be temporarily removed to permit construction work on the flood channel. When work is completed, the tracks will be restored to the existing condition, or better. Coordination with the State Historic Preservation Officer regarding this matter has been effected. A memorandum of agreement containing steps to mitigate the adverse effects under the provisions of Section 106 of the 1966 Historic Preservation Act (36 CFR, Part 800) has been filed with the U.S. Dept. of the Interior.

According to the State Department of Land and Natural Resources, there are no records of any sites or objects of archaeological significance located on the proposed project sites. The project sites have been utilized in the past for ranching purposes (See Appendix   8  ).

## 2. Biological

a. Terrestrial. With the exception of several hau trees growing alongside the existing stream near the ocean, all of the species within the project area are introduced, rather than endemic or indigenous. From a visual survey of the Nanakuli area, it would be fairly safe to contend that the elimination of any of the botanic species from the project area would not pose a threat to the existence of that species within the region. No rare or endangered species of flora are known to inhabit the project or adjacent areas.

The proposed project will have no significant effects upon the animals which frequent the development sites. The project sites are marginal areas for animal habitats due to openness and the proximity to human activities. No rare or endangered species of fauna are believed to exist in the region.

b. Marine. There should not be a detrimental effect on the marine environment. Since no change is expected in the water quality and conditions, due to the construction of the subdivisions and flood channel, no significant impacts are anticipated upon the biological life inhabiting these waters. This conclusion is based on the assumption that the health and proliferation of the biological components is dependent on surrounding water quality.

## 3. Cultural

a. Aesthetic. The proposed sites have little to offer in terms of natural beauty in the form of trees, rock formations, streams, etc., which

would be affected by development. The sites are typical of the surrounding area and do not contain any significant natural or known archaeological landmarks. The subdivision developments can be expected to provide an aesthetically pleasing residential area which will blend in with the surrounding community.

It is also anticipated that the development of the proposed channel will encourage adjacent residents to refrain from discarding solid waste material into the stream.

b. Parks and Recreation. The proposed flood control channel exits into the ocean via a small strip of rocky coastal area, Nanakuli Beach Park, owned by the State of Hawaii and managed by the City and County of Honolulu, Department of Parks and Recreation. No significant impacts upon the beachpark are anticipated.

Construction of the flood channel will require temporary removal of the pedestrian bridges providing access between Nanaikapono Elementary School and Nanakuli Beach Park. These bridges will either be retained or replaced after work on the channel is completed. Every effort will be made to minimize inconvenience to the park users during construction. The completed channel will not interfere with any of the existing park activities.

An asphalt pathway may be installed along the rocky coast in the future, but will not be affected by the proposed flood channel.

The State Master Plan defines a bikeway corridor stretching from Ala Moana Park to Kaena Point, linking together all the beach parks along the way. The Nanakuli section of the bikepath will be contained within the existing railroad right-of-way. This railroad, which runs on the makai side of, and parallel to Farrington Highway, is included in the Hawaiian

Register of Historic Places. There will be no conflict between the proposed flood control channel and the proposed bikepath.

c. Education. There are sufficient educational facilities in the immediate vicinity of the project. The proposed subdivisions are located adjacent to the newly constructed Multi-School Complex (Grades 7-12). A Master Plan exists for the expansion of this facility when necessary. Nanaikapono Elementary School is located roughly one mile from the project site, and will be replaced by another elementary school anticipated for September 1977, which will be built on the lower end of the Complex site. (Figure 3) The figures for school enrollment and the number of years of school completed should improve in the Nanakuli area, as a result of the new facilities.

No significant long-term impacts are anticipated by the realignment of the flood channel as it passes through the Nanaikapono Elementary School campus. During construction, precautions will be taken to minimize the prevalent noise and dust problems.

TABLE 5 - ENROLLMENT PROJECTION<sup>3</sup>

	<u>Nanaikapono Elem.</u>	<u>Nanakuli Interm. &amp; High</u>
Sept. 1975	1320	1355
1976	1435	1432
1977	1488	1446
1978	1518	1447
1979	1510	1442
1980	1536	1412

<sup>3</sup>Dept. of Education, Office of Business Services, Facilities Branch, Advanced Planning. Summer 1975

#### IV. ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

##### SHOULD THE PROJECT BE IMPLEMENTED

##### A. Modification of Regime

###### 1. Biological

The subdivision development will transform about 62± acres of undeveloped grazing land into a residential area which will have individually landscaped lots with trees, shrubs and lawn areas. This change is not expected to create any adverse effects on the biological surroundings.

###### 2. Physical

An increase in total surface run-off from the completed subdivision site can be anticipated. Any potential adverse effects will be minimized or eliminated by providing adequate storm drains, catch basins, curbs and gutters and grassing and landscaping by home owners in addition to the proposed flood control channel.

##### B. Land Transformation and Construction

###### 1. Barriers-Fencing

A combination chain-link fence and concrete wall barrier will be constructed along both sides of the flood channel as it passes through the Nanaikapono Elementary School grounds. Throughout its remaining length a chain-link fence with or without a concrete wall barrier will be constructed along both sides. This is provided as a safety measure especially for young children.

###### 2. Cut and Fill

The cut and fill operations required for the subdivisions and flood channel developments will alter the natural ground. The City and County

Grading Ordinances and the Public Health Safety and Welfare requirements, protecting against external erosion and sediment production will be strictly complied with to minimize potential adverse effects.

C. Emission, Effluents, Solid Wastes and Noise

1. Airborne Emissions

No adverse airborne emissions are anticipated from the completed and inhabited subdivisions. Some temporary dust and exhaust emissions can be expected during the construction phases. These will be controlled by strict enforcement of applicable pollution control requirements.

2. Waterborne Effluents

Adequate measures will be provided to eliminate any potential adverse effects from waterborne effluents.

Surface run-off will be accommodated by drainage systems designed to prevent flooding and erosion of the sites as well as adjacent lands.

3. Solid Wastes

Solid wastes produced by the residents of the subdivisions will consist of a variety of household rubbish, disposable items, and yard cuttings. The refuse will be collected on a regular basis by the City and County Refuse Collection and Disposal crews. No adverse effects from solid wastes are anticipated.

4. Noise Emissions

Some adverse effects from noise may be expected during the construction phase of the subdivision and flood channel. These effects will be minimized by applicable regulations. No adverse noise levels should be generated by the residents of the proposed subdivisions.

#### D. Resource Depletion

The residential development will inevitably increase consumption of domestic water and electricity, and generate additional sewage and solid wastes. Other unavoidable resource depletion will include the 62± acres of open land committed to the project, and construction material such as lumber, sand, gravel, steel, oil, etc.

## V. ALTERNATIVES

### A. Subdivision

#### 1. No Development

The "no development" alternative would deny a number of qualified native Hawaiian families of an opportunity to maintain a single family dwelling unit and lot. This course of action is unresponsive to the needs of the people.

#### 2. Planned Development and Housing

This alternative to the conventional Hawaiian Homes Subdivision was considered in the early stages of planning. Townhouses and multi-family dwelling units however, are not permitted by the Hawaiian Homes Commission Act, 1920, as amended through December 1971.

#### 3. Use of Land for Other Purposes

Although the project sites are zoned for agriculture, the poor soil and lack of low-priced irrigation water, makes any extensive agricultural pursuit very difficult and expensive.

The high demand for Hawaiian Homes houselots in the Nanakuli area and the fact that the subject tracts are both desirable and available for residential purposes, all but precludes consideration of other uses.

### B. Flood Control Channel

#### 1. No Flood Control Improvement

This alternative would forego development of the channel and maintain the existing environmental setting in the project area. Should the status quo be maintained, the present adverse conditions will be seriously aggra-

vated and compounded as surface-runoff increases. This alternative is unresponsive to the needs of the people, and would not reduce the flood hazard or improve the well-being of the affected residents.

## 2. Water Impounding Systems

An upstream storage facility would be economically unfeasible due to the high construction cost of a detention reservoir. The unavailability of a suitable site also poses a major problem with this alternative.

## 3. Flood-Proofing

Flood-proofing all damageable structures within the flood-plain, present and future, would be accomplished by raising the buildings, or constructing small levees around them. This would be a complicated undertaking involving inconvenience and discomfort to residents in addition to the costs of implementing such an alternative.

## 4. Flood Plain Zoning

This alternative would be accomplished by an ordinance to control building in flood hazard areas. Flood plain zoning is impractical in this case as it would require committing a large amount of valuable land for flood control purposes. This would also result in the relocation or abandoning of existing homes and schools. This course of action is unresponsive to the needs of the people.

## 5. Development of Park in Flood Prone Areas

This alternative would require commitment of valuable residential lands and necessitate relocation of residents presently inhabiting the flood prone areas. This course of action is unresponsive to the housing needs of the people.

The proposed expansion of Nanakuli Beach Park when Nanaikapono Ele-

mentary School is relocated, will utilize a flood prone area for park use.

6. Widening and Clearing of Streams (Without the Use of Concrete)

The widening of the stream (without the use of concrete) and subsequent clearing of grasses, shrubs and unwanted debris was considered in the early planning stages of this project.

This alternative would increase the erosion problem and sediment loss, especially at the upper, steeper sections within the project limits. The implementation of this alternative would necessitate commitments for maintenance.

VI. RELATIONSHIP BETWEEN SHORT-TERM USES OF MAN'S ENVIRONMENT  
AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The short-term effect on man's environment during construction of the subdivisions and flood channel will be offset by the long-term value gained by promoting the State's goal of providing the native Hawaiian people with homes for their rehabilitation and maximizing the safety and well-being of the residents. The removal of the flood hazard and the attendant upgrading of the social and economic well-being of the residents are permanent and continuing benefits.

## VII. IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES

The proposed subdivisions and flood-control channel will commit, irreversibly and irretrievably, land, labor and material resources, as well as the monetary resources required for governmental administration of the project.

Some vegetation and immobile organisms will be irretrievably lost, but no economically important flora or fauna will be affected, and the overall effect on the ecology of the area will be negligible.

## VIII. REFERENCES

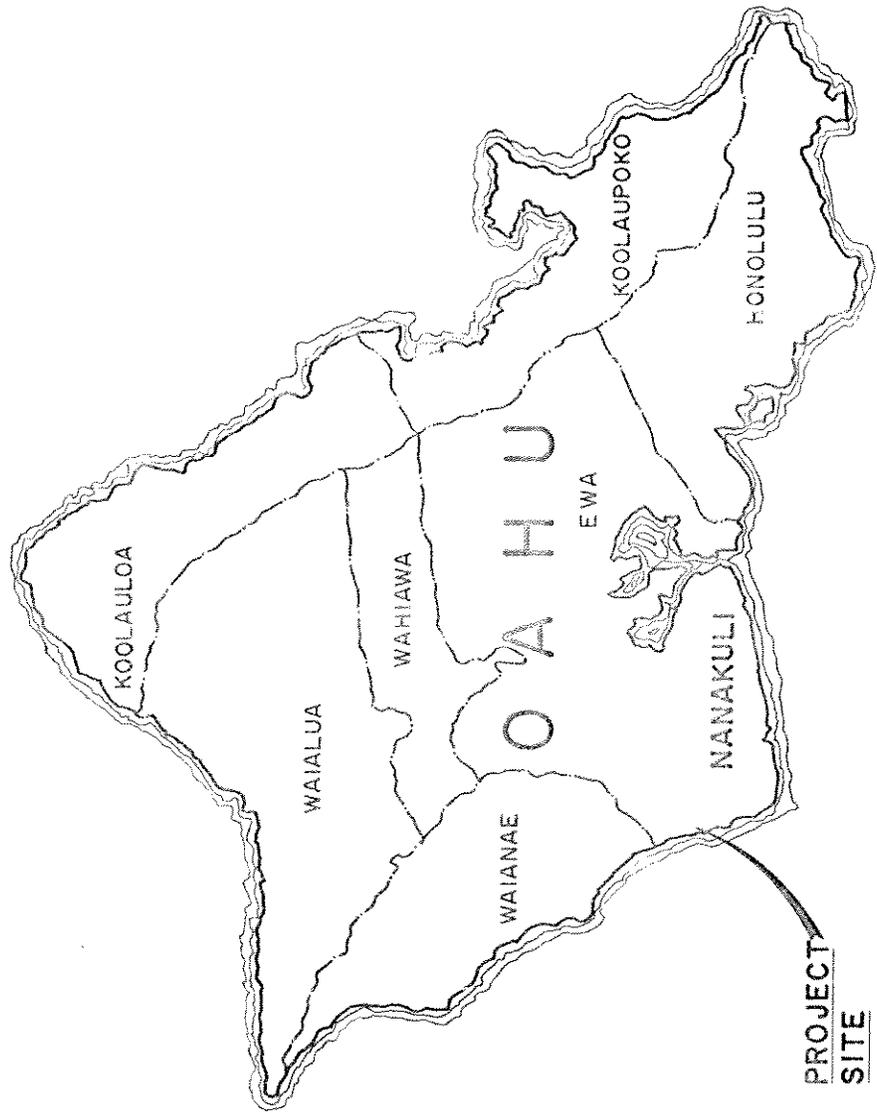
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- Zones, C.P., Preliminary Report on the Ground-Water Resources of the Waianae Area, Oahu, Hawaii, prepared by the U.S.G.S. in cooperation with the Division of Water and Land Development, Dept. of Land and Natural Resources, Honolulu, Hawaii, 1963.

VIII. APPENDIX

- A. MAPS & FIGURES
- B. SUPPORTIVE MATERIAL
- C. COMMENTS

A. MAPS

Figure 1	.....	Vicinity Map
Figure 2	.....	Location Map
Figure 3	.....	Hawaiian Home Land - Nanakuli Valley Master Plan
Figure 4	.....	Flood Control Channel Detail Sheet 1
Figure 5	.....	Flood Control Channel Detail Sheet 2
Figure 6	.....	Generalized Current Pattern
Figure 7	.....	Offshore Study Sites
Figure 8	.....	Proposed Land Use Pattern
Figure 9	.....	Flood Prone Areas



VICINITY MAP

NANAKULI RESIDENCE LOTS

4TH & 5TH SERIES

FIGURE 1

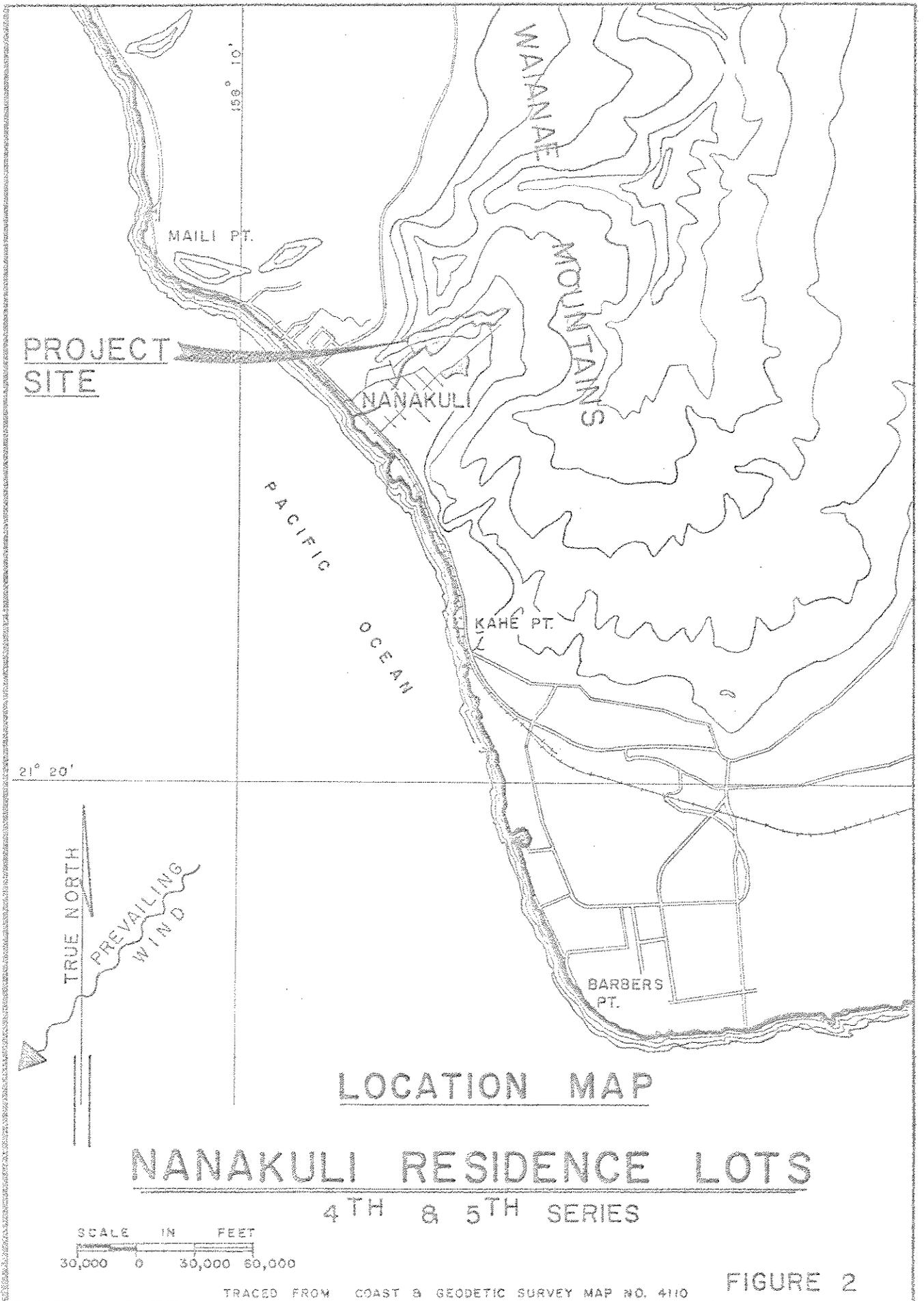
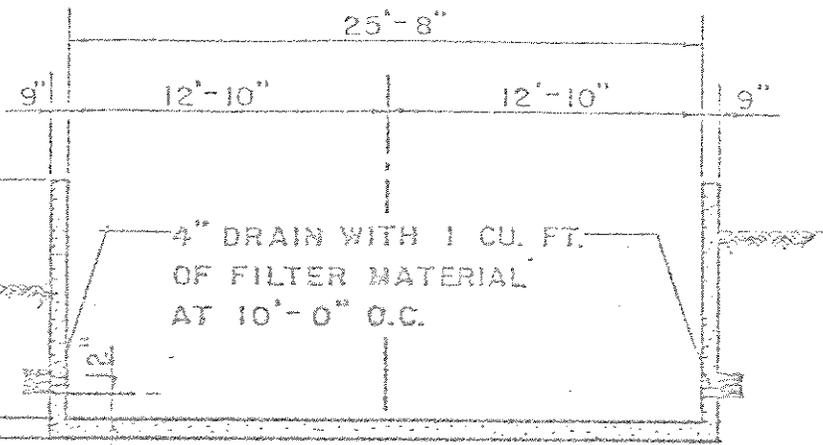
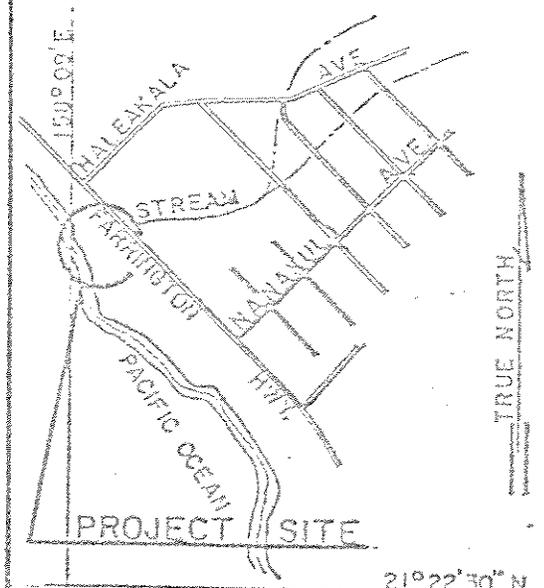


FIGURE 2





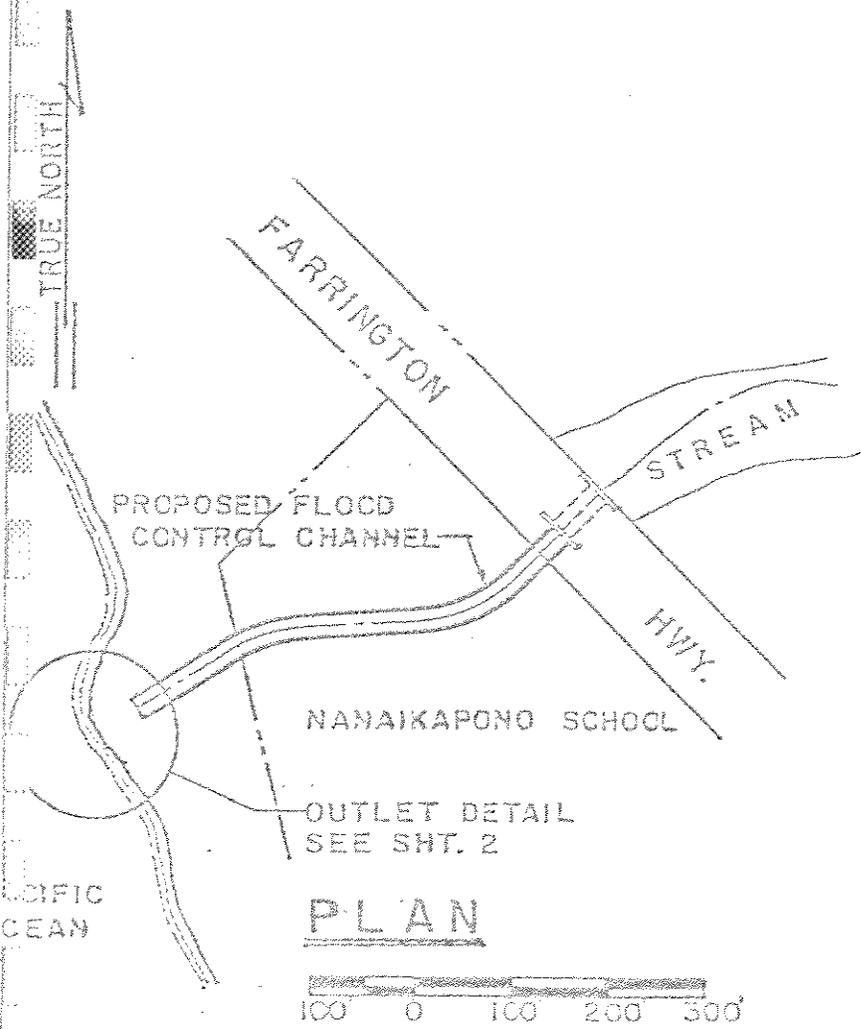
**TYPICAL CHANNEL SECTION**



**LOCATION MAP**

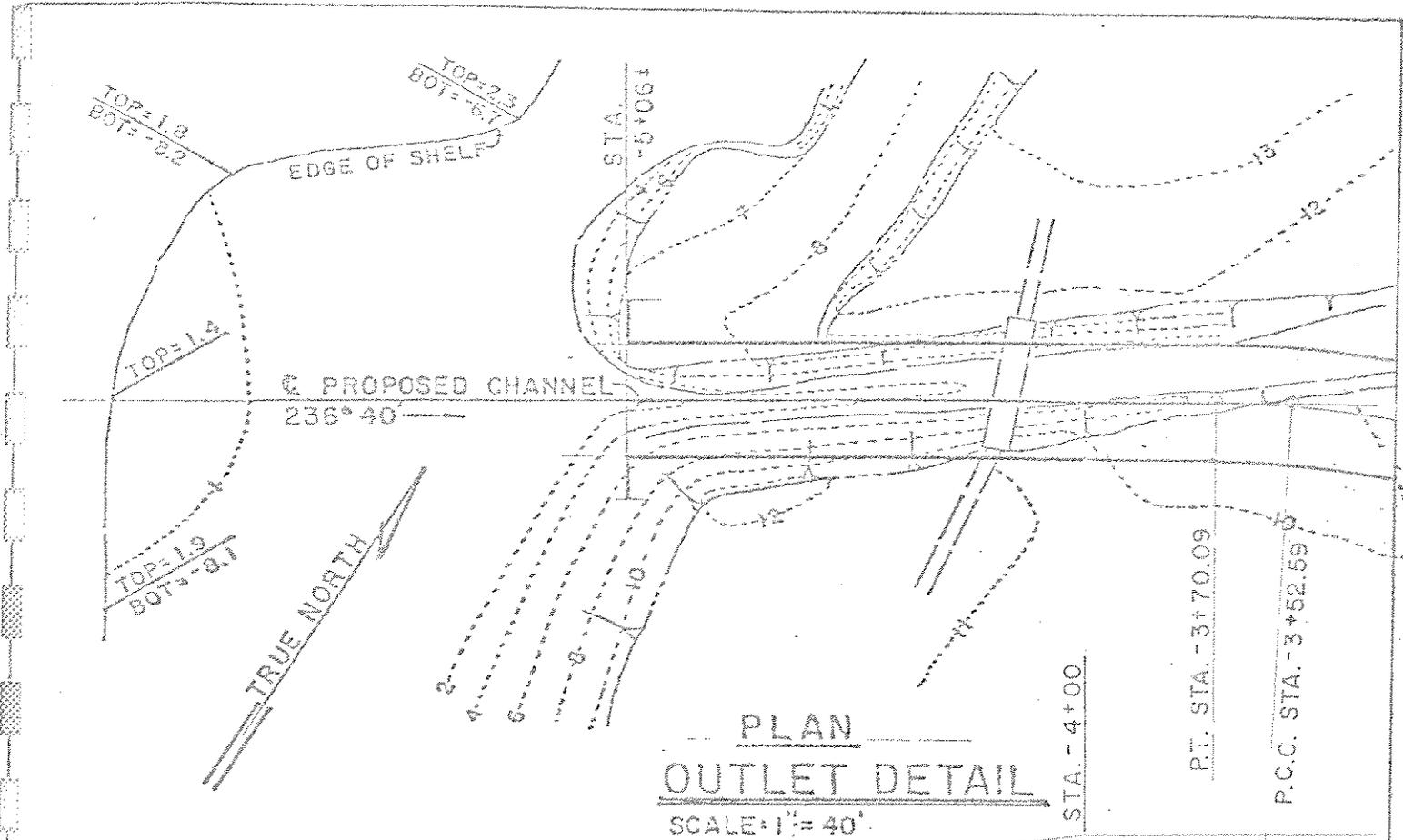


TRACED FROM U.S.D.I.G.S. \_\_\_\_\_  
 SCHOFIELD BARRACKS \_\_\_\_\_  
 QUADRANGLE \_\_\_\_\_

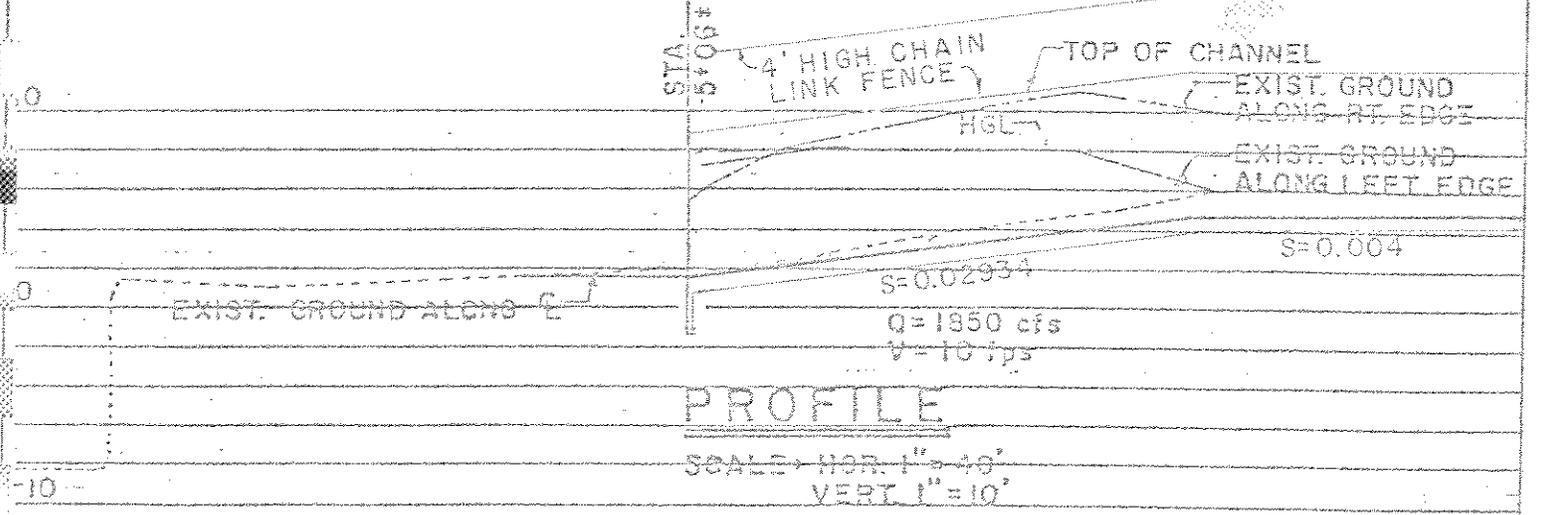


**PROPOSED IMPROVEMENTS TO EXISTING FLOOD CONTROL CHANNEL AT NANAIKULI, OAHU, HAWAII**  
 APPLICATION BY: DEPT. OF \_\_\_\_\_  
 HAWAIIAN HOMES LANDS \_\_\_\_\_  
 SHEET 1 OF 2 SHEETS MAY, 1973

FIGURE 4

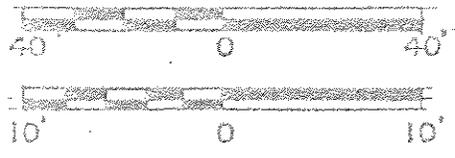


**PLAN**  
**OUTLET DETAIL**  
 SCALE: 1" = 40'



**PROFILE**  
 SCALE: HOR. 1" = 40'  
 VERT. 1" = 10'

ELEVATIONS ARE IN FEET  
 AND REFER TO M.L.L.W.



PROPOSED IMPROVEMENTS  
 TO EXISTING FLOOD  
 CONTROL CHANNEL  
 AT NANAKULI, OAHU, HAWAII  
 APPLICATION BY:  
 HAWAIIAN HOMES COMMISSION  
 SHEET 2 OF 2 SHEETS    MAY, 1973

FIGURE 5

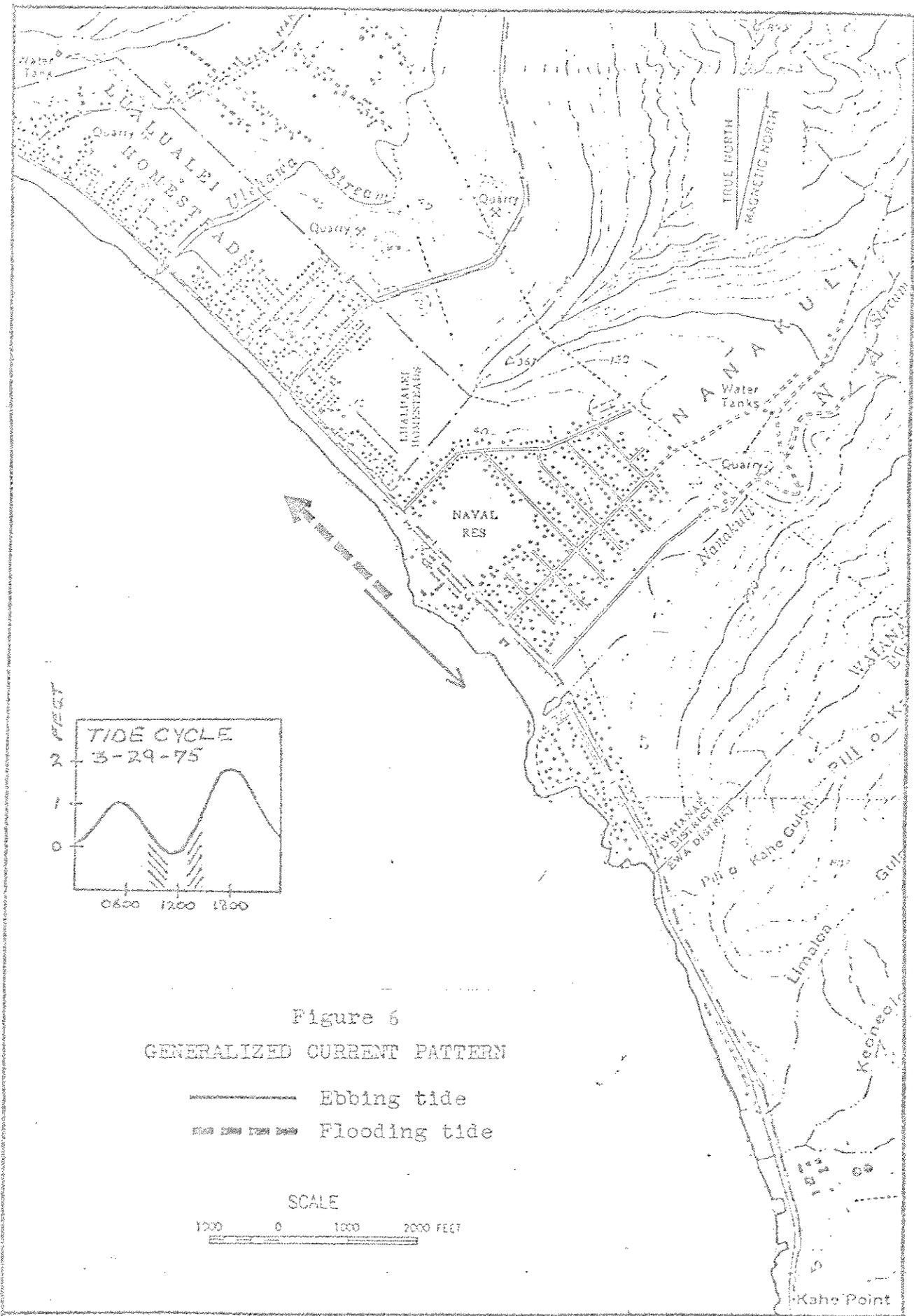


Figure 6  
GENERALIZED CURRENT PATTERN

————— Ebbing tide  
 ▨▨▨▨▨▨▨▨▨▨ Flooding tide

SCALE  
 1000 0 1000 2000 FEET

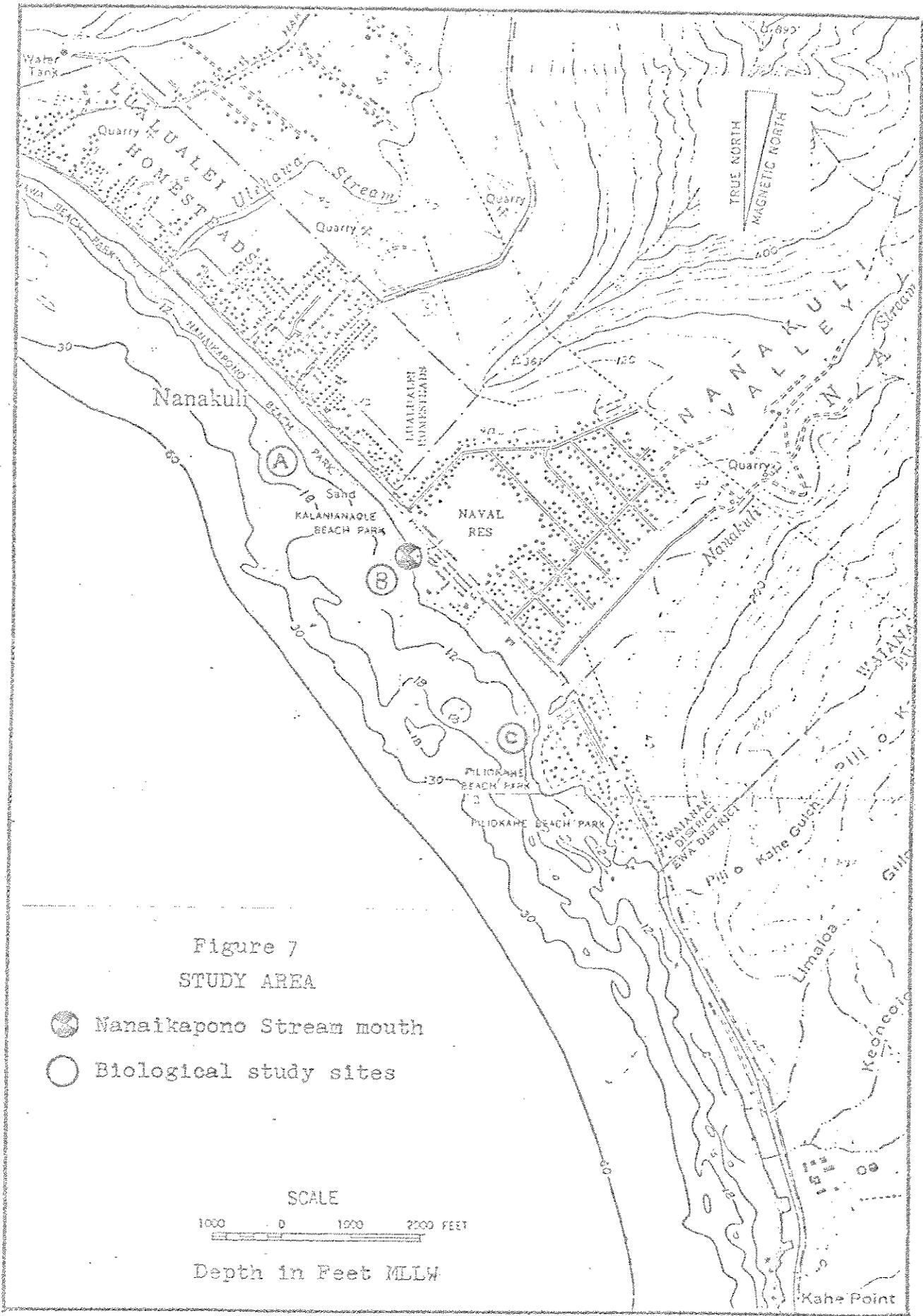
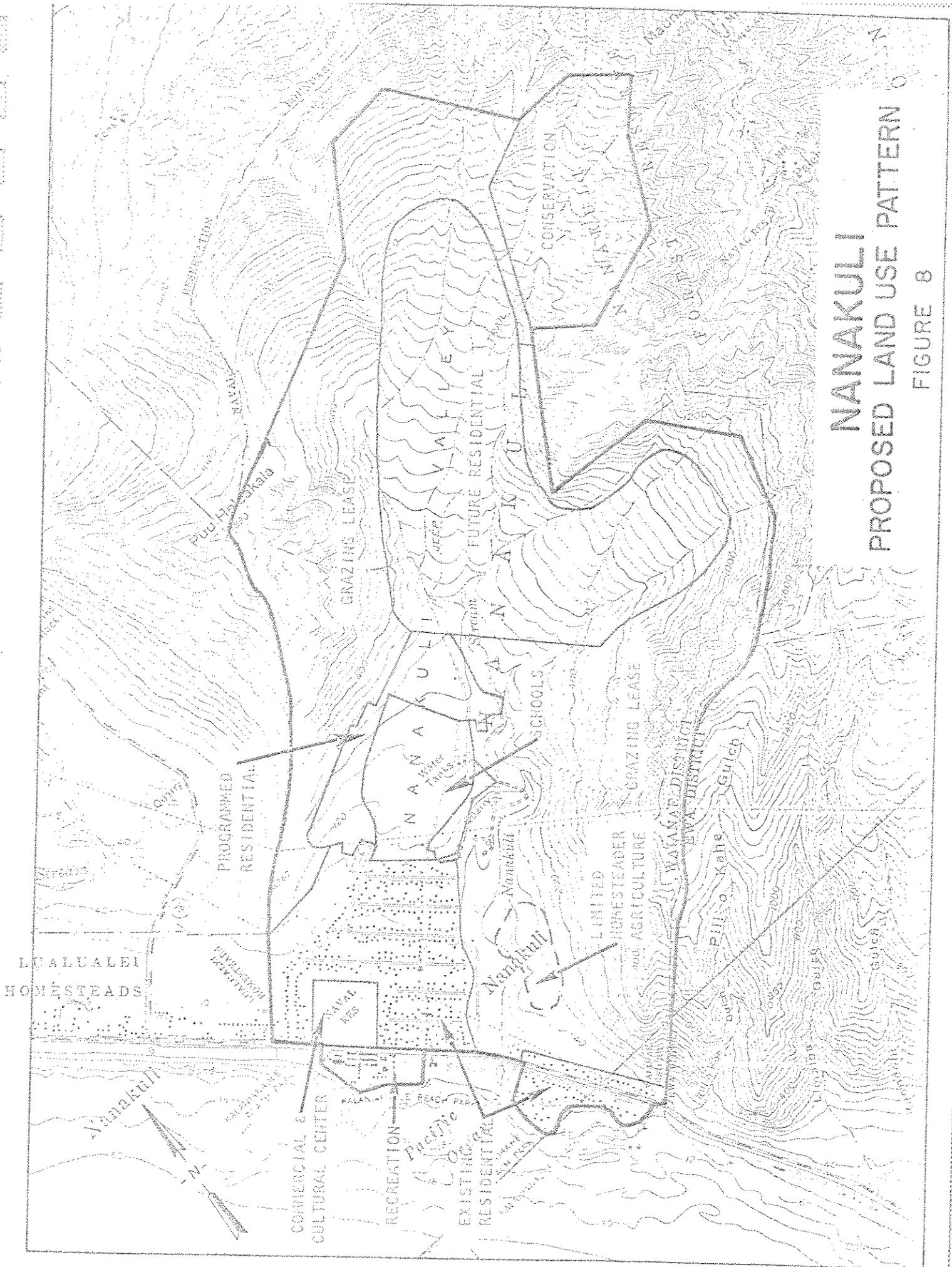


Figure 7  
STUDY AREA

-  Nanaikapono Stream mouth
-  Biological study sites

SCALE  
1000 0 1000 2000 FEET

Depth in Feet MLLW



**NANAKULI**  
**PROPOSED LAND USE PATTERN**

**FIGURE 8**



B. SUPPORTIVE MATERIAL

GEORGE R. ARIYOSHI  
GOVERNOR



E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS  
DOUGLAS S. SAKAMOTO  
WALLACE AOKI

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813

IN REPLY REFER TO:

June 24, 1975

ATP 8.3163

Dr. Richard E. Marland  
Interim Director  
Office of Environmental  
Quality Control  
550 Halekauwila St., Rm. 301  
Honolulu, Hawaii 96813

Dear Dr. Marland:

Subject: Draft EIS, Nanakuli Residence Lots and  
Flood Control Channel, Nanakuli, Oahu

In reference to the subject environmental impact statement, please be advised that:

1. Page 22, last paragraph. We suggest this paragraph be reworded to say that coordination with the Department of Transportation indicates that the existing 4-lane undivided highway has sufficient capacity to accommodate the traffic generated by the proposed development.
2. Page 28-29. The vehicle/residence ratio of 0.61 (peak hour) appears reasonable and the 127 vehicles generated, therefore, appears reasonable.

Sincerely,

Handwritten signature of E. Alvey Wright in cursive.  
E. ALVEY WRIGHT  
Director

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU

630 SOUTH BERETANIA

POST OFFICE BOX 3410

HONOLULU, HAWAII 96843



JOHN HENRY FELIX, Chairman  
STANLEY S. TAKAHASHI, Vice Chairman  
GEORGE APDUHAN  
YOSHIE H. FUJINAKA  
KAZU HAYASHIDA  
WALTER D. HOWARD  
E. ALVEY WRIGHT

EDWARD Y. HIRATA  
Manager and Chief Engineer

June 18, 1975

Dr. Richard E. Marland  
Interim Director  
Office of Environmental Quality Control  
550 Halekauwila Street, Room 301  
Honolulu, Hawaii 96813

Dear Dr. Marland:

SUBJECT: Draft Environmental Impact Statement for  
Nanakuli Residence Lots, 4th and 5th  
Series, and Flood Control Channel

We have reviewed the draft environmental impact statement and do not anticipate any adverse effects on potable groundwater resources in the area from the use of cesspools. However, precautions should be taken during construction to protect our 8-inch main lying along the proposed channel and our mains on Farrington Highway.

Should further information be needed, contact Mr. Lawrence Whang at 548-5221.

Very truly yours,

Edward Y. Hirata  
Manager and Chief Engineer

PROJECT OFFICES

KAHAIWAHINE OFFICE  
P. O. BOX 125  
KAHAIWAHINE, HAWAII 96743

KAUAI OFFICE  
P. O. BOX 813  
LILIOE, HAWAII 96720



STATE OF HAWAII  
DEPARTMENT OF HAWAIIAN HOME LANDS  
P. O. BOX 1419  
HONOLULU, HAWAII 96805

PROJECT OFFICES

MAUI OFFICE  
P. O. BOX 22  
KAPULAHUA, MAUI 96732

MOLOKAI OFFICE  
P. O. BOX 198  
MOLOKAI, MOLOKAI 96729

KAUAI OFFICE  
P. O. BOX 322  
LILIOE, KAUAI 96766

June 30, 1975

Wilson Okamoto and Assoc.  
P. O. Box 3530  
Honolulu, Hawaii 96811

Gentlemen:

Subject: Nanakuli Residence Lots, Series 3  
Archaeological Survey

Transmitted herewith for your information and files are the correspondence to verify that the area planned for the development of Nanakuli Residence Lots 4 and 5 was cleared and improved for pastoral purposes by the lessees Tongg Ranch Inc., several years ago.

Had there been any archaeological or cultural evidence at that time, it would have been inadvertently destroyed. Should there be any questions, please contact Gordon Wong, telephone 548-2685.

Owau no meka haahaa,  
(I am, humbly yours)

(Mrs.) Billie Beamer, Chairman

GW:aa

O-M-O  
C- [unclear]

# TONGG RANCH

69 NORTH KING STREET • HONOLULU, HAWAII 96817

May 23, 1975

Hawaiian Homes Commission  
P.O. Box 1876  
Honolulu, Hawaii

Attention: Mr. Gordon Wong

Gentlemen:

Please find enclosed as per your request, a letter from you dated December 8, 1970 wherein permission to upgrade certain land under our lease to you was given.

Beginning one month after said permission, work was started including removal of the rocks in question.

Sincerely Yours,

*Ronnie Tongg*  
Tongg Ranch Inc.  
by Ronnie Tongg  
Its Vice President

HM 20 8 51 AM '75

DEPT. OF HAWAIIAN  
HOME LANDS

# TONGG RANCH

69 NORTH KING STREET • HONOLULU, HAWAII 96817

May 29, 1975

Mr. Gordon Wong  
State of Hawaii  
Department of Hawaiian Home Lands  
P.O. Box 1879  
Honolulu, Hawaii 96805

Dear Mr. Wong:

Reference made to telephone conversation of May 23, 1975 in regards to the improvement to Tongg Ranch in the area of the residential development.

As authorized per letter dated December 8, 1970, Tongg Ranch proceeded with the pasture improvement of General lease 105 by clearing area, remove out cropping rocks and disc the area for pasture improvement.

If there was any evidence of archaeological or cultural evidence it would have been in advertently destroyed.

Should there be any questions, please contact us.

Sincerely,

*Ronald Tongg*  
TONGG RANCH, INC.

KA OFFICE  
P. O. BOX 128  
MOLEA, HAWAII

KAUAI OFFICE  
P. O. BOX 222  
HILO, HAWAII



MAUI OFFICE  
P. O. BOX 22  
KAHULUI, MAUI

HONOLULU OFFICE  
P. O. BOX 122  
MOOLENA, HONOLULU

KAUAI OFFICE  
P. O. BOX 222  
LIHUA, KAUAI

STATE OF HAWAII  
DEPARTMENT OF HAWAIIAN HOME LANDS  
P. O. BOX 1379  
HONOLULU, HAWAII 96803

December 8, 1970

Tongg Ranch, Inc.  
P. O. Box 2113  
Honolulu, Hawaii 96805

Attention: Mr. Richard Lau.

Gentlemen:

This acknowledges receipt of your letter of December 4, 1970, expressing your desire to upgrade the remaining areas of the Nanakuli, Oahu, pasture leasehold (G. L. #105) to make up for the loss of about 80 acres withdrawn for use in the new Nanakuli High School development.

You are hereby permitted to upgrade the grazing capability of the remaining portions of the said leasehold under the following conditions:

1. None of the cost of upgrading shall be charged to the Department of Hawaiian Home Lands.
2. The removal of full-grown trees shall be kept to a minimum and only trees to be removed shall be kiawe.
3. Any rock removed from the area shall be paid for at the rate of \$1.00 per cubic yard; payments to be made to the Department of Hawaiian Home Lands on a quarterly basis. The Chairman of the Hawaiian Homes Commission may increase this cost should he deem it necessary.
4. This permit may be cancelled by the Chairman of the Hawaiian Homes Commission on 30-day notice.

Very truly yours,

ABOVE CONDITIONS ACCEPTED:

Richard Lau  
For Tongg Ranch, Inc.

A. K. PIIANAIA, Chairman  
Hawaiian Homes Commission

PROJECT OFFICES

WAIKĀEĀ OFFICE

P. O. BOX 125

WAILUA, HAWAII 96743

WAILUKĀNA OFFICE

P. O. BOX 133

WAILUKĀNA, HAWAII 96750



*File*

PROJECT OFFICES

MAUI OFFICE

P. O. BOX 22

KAHULUI, MAUI 96732

MOLOKAI OFFICE

P. O. BOX 158

MOLOKAI, MOLOKAI 96729

KAUAI OFFICE

P. O. BOX 332

LĪHUE, KAUAI 96766

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

P. O. BOX 1513

HONOLULU, HAWAII 96805

June 17, 1975

MEMORANDUM

TO: Christopher Cobb, Chairman of the Board  
Department of Land and Natural Resources

FROM: Mrs. Billie Beamer, Chairman

SUBJECT: Archaeological Survey  
Nanakuli Residence Lots, Series 4 & 5

The Department of Hawaiian Home Lands has been informed through its consultant Wilson Okamoto & Associates that an archaeological survey of the project area is necessary before the project can proceed. Subsequently, Mr. Gordon Wong of DHHL contacted Beth Walton of your staff and informed her that the project area was once improved for pasture purposes and any archaeological or cultural evidence would have been inadvertently destroyed. She requested that documentation substantiating that fact be submitted. Accordingly, you will find enclosed the following:

1. Letter to Tongg Ranch dated December 8, 1970, authorizing pasture improvements;
2. Letter from Tongg Ranch dated May 29, 1975, confirming pasture improvements.

On this basis, the Department requests that the Historical Preservation Officer provide "clearance" of this project without further archaeological survey as required under chapter 6, Hawaii Revised Statutes. Your concurrence is appreciated.

  
 (MRS.) BILLIE BEAMER, CHAIRMAN

Encl.  
 WB:kg  
 bcc: Gordon Wong



C 2130-01

GEORGE R. ARIYOSHI  
GOVERNOR OF HAWAII

CHRISTOPHER COBB, CHAIRMAN  
BOARD OF LAND & NATURAL RESOURCES

EDGAR A. HAMASU  
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
P. O. BOX 621  
HONOLULU, HAWAII 96809

- DIVISIONS:
- CONVEYANCES
- FISH AND GAME
- FORESTRY
- LAND MANAGEMENT
- STATE PARKS
- WATER AND LAND DEVELOPMENT

July 3, 1975

Mrs. Billie Beamer  
Chairman, Department of  
Hawaiian Home Lands  
P. O. Box 1879  
Honolulu, Hawaii 96805

RECEIVED  
JUL 23 1975

WILSON, HIRAIWA & ASSOCIATES

Dear Mrs. Beamer,

Subject: Nanakuli Residence Lots, Series 4 and 5

Thank you for your letter of June 17, 1975 concerning the Nanakuli Residence Lots, Series 4 and 5, and the letters authorizing and confirming earlier pasture improvements.

These letters indicate that the lands in question were substantially altered in 1970. This, plus other current information, make it very unlikely that any archaeological sites remain on the properties. An archaeological survey prior to construction, therefore, will not be required.

Because this area is believed to have been utilized by early Hawaiians, please inform me if any artifacts are uncovered in the course of the development that appear to be of an archaeological nature.

Very truly yours,

CHRISTOPHER COBB  
Chairman and Member,  
Board of Land and Natural Resources

GC:jsm

*Rec'd Billie Beamer 7-21-75  
cc: So Wilson Hiramoto -*

*O-WO  
C- Hiram*

JUL 15 2 21 PM '75

DEPT. OF LAND & NATURAL RESOURCES  
HONOLULU, HAWAII

C. COMMENTS

1. Letters Requiring Response with Response
2. Letters Requiring No Response

I. LETTERS REQUIRING RESPONSE

a. Office of Environmental Quality Control

b. Federal

Department of the Army (Corps of Engineers)

Soil Conservation Service

Department of Interior, Fish and Wildlife Service

c. State

Department of Land and Natural Resources

Department of Transportation

Department of Accounting and General Services

Department of Planning and Economic Development

d. City and County

Department of General Planning

Department of Public Works

Board of Water Supply

Department of Land Utilization

Department of Parks and Recreation

e. University of Hawaii

Leeward Community College

Environmental Center

Water Resource Research Center

GEORGE R. ARIYOSHI  
GOVERNOR



DEPT. OF LAND AND NATURAL RESOURCES  
HAWAIIAN HOME LANDS

RICHARD E. MARLAND, PH.D.  
DIRECTOR

TELEPHONE NO.  
548-6915

JUL 18 3 30 PM '75

STATE OF HAWAII  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL  
OFFICE OF THE GOVERNOR  
550 HALEKAUWILA ST.  
ROOM 301  
HONOLULU, HAWAII 96813

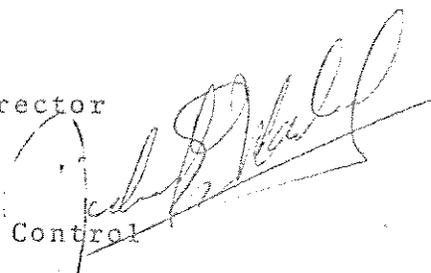
July 18, 1975

MEMORANDUM

TO: The Honorable Billie Beamer, Director  
Hawaiian Home Lands

FROM: Richard E. Marland, Director  
Office of Environmental Quality Control

SUBJECT: Draft Environmental Impact Statement for Nanakuli  
Residence Lots 4th and 5th Series and Flood Control  
Channel, Nanakuli, Oahu



---

As of this date, this Office has received seventeen (17) comments on the above subject. An attached sheet lists the responding agencies.

In our evaluation of the draft EIS (dEIS), we have found several areas in which the discussion should be expanded. We offer the following comments:

PAGE 1

The statement, "The format and scope have been derived in accordance with the State of Hawaii Office of Environmental Quality Control (OEQC) rules and regulations for Environmental Impact Statements (EIS), as of March 1975," is incorrect. Previous to the promulgation of the Rules and Regulations by the Environmental Quality Commission on June 2, 1975, interim guidelines were used. OEQC did not establish the Rules and Regulations for an EIS. They were established by the Environmental Quality Commission.

CESSPOOLS

The dEIS mentions that cesspools will be used during the interim period. We find this impact of great concern. First, how long will cesspools be used before sewer lines are installed?

Secondly, it is important to note that because the Nanaikapono Stream runs through the subdivision and channelization is proposed, a possibility of seepage into the channel exists if the bottom of the channel is unlined. Will the bottom of the channel be lined? Will the cesspools conform to the Department of Health's regulations?

Lastly, what will happen to the cesspools when replaced by sewer lines?

In order for a complete analysis of the EIS, it is necessary that these questions be considered. As expanded discussion is warranted.

#### FLOOD CONTROL CHANNEL

The discussion of the channel is inadequate. What is the capacity of the channel? Will the bottom be concrete lined?

In addition, the adverse impact of channelization are not discussed. Alteration of the stream's natural course may adversely affect water quality and environment; drainage from upper watershed areas is accelerated; water percolation to the ground water table is reduced. Increase surface and urban run-off will make the area drier. We strongly recommend that these points be discussed.

#### NANAKULI STREAM

This is a small point, but where is Nanakuli Stream on the map?

#### FAUNA

The dEIS mentions that medaka of the Poeciliidae family inhabit the trapped ponds of water scattered along the length of the Stream. However, what will happen to them when channelization begins? How would a change in the water temperature caused by concrete channels affect them? A discussion is recommended.

#### ALTERNATIVES

Another alternative to consider in place of channelization is to create a park in flood prone areas.

#### RELATIONSHIP BETWEEN SHORT-TERM USES VS. LONG-TERM PRODUCTIVITY

What will be the secondary effects resulting from the proposed action? In other words, this project leads to an increase population which in turn will affect urbanization, agriculture, public facilities, public utilities, transportation, and etc. We recommend that consideration be given and discussed.

ADDITIONAL COMMENTS

In relation to the flood control channel, we have a few questions.

1. Will there be any type of debris, sediment, or basin?
2. What has been the flooding history of the area in terms of property damages, loss of lives, monetary losses, flooding frequency, stream's water gage reading, and etc.? We recommend that topic be discussed in order to justify the proposed action.

RECOMMENDATIONS

For brevity and fairness, this Office did not attempt to summarize other reviewers comments. Instead we strongly recommend that each comment be given careful consideration.

We further recommend that (1) written comments be sent to all commentors, including this Office, indicating how specific concerns were considered, evaluated, and disposed; (2) all comments and your responses should be incorporated as an appendix to the final EIS; (3) a copy of the final EIS should be sent to those individuals that provided substantive comments to the draft EIS.

Attachments

February 2, 1976

Dr. Richard E. Marland, Director  
State of Hawaii  
Office of Environmental Quality Control  
Office of the Governor  
550 Halekauwila Street  
Honolulu, Hawaii 96813

Dear Doctor Marland:

Subject: Manakuli Residence Lots, 4th and 5th Series and  
Flood Control Channel

Reference is made to your letter dated July 15, 1975, commenting on the subject draft Environmental Impact Statement. Your concerns are addressed in the order in which they were presented.

1. Comment

F. 1. The statement, "the format and slope have been derived in accordance with the State of Hawaii Office of Environmental Quality Control (OEQC) rules and regulations for Environmental Impact Statements (EIS), as of March 1975," is incorrect.

Response

The statement has been corrected.

2. Comment

1. How long will cesspools be used before sewer lines are installed?

Will the bottom of the channel be lined? Will the cesspools conform to the Department of Health's regulations?

What will happen to the cesspools when replaced by sewer lines?

Response

Refer to Sections I.D.1, I.D.2 and III.C.d of the Final Environmental Impact Statement.

3. Comment

What is the capacity of the channel? Will the bottom be concrete lined?

The adverse impacts of channelization are not discussed. Alteration of the stream's natural course may adversely affect water quality and environment; drainage from the upper watershed areas is accelerated; water percolation to the ground-water table is reduced. Increase surface and urban run-off will make the area drier. We strongly recommend that these points be discussed.

Response

The design capacity of the channel is 1850 cfs. The sides, as well as the bottom of the proposed channel will be concrete lined. (See appendix, Fig. 4 and 5)

Channelization may unavoidably incur the impacts noted, to a relatively limited extent. It is felt that in the long-run, the benefits of this improvement to the community will offset any currently anticipated undesirable impacts.

4. Comment

Where is Nanakuli Stream on the map?

Response

See Figure 8 in the Final Environmental Impact Statement.

5. Comment

The DEIS mentions that medaka of the Poeciliidae family inhabit the trapped ponds of water scattered along the length of the stream. However, what will happen to them when channelization begins? How would a change in water temperature caused by concrete channels affect them? A discussion is recommended.

Response

These trapped ponds of water occur only after heavy rainfall, which is sporadic throughout the year (See Section II.A.5, Rainfall). Between downpours, and during the dry summer months, these ponds completely dry up, leaving the inhabitants to perish.

The elimination of stream-bed pools if present at the outset of construction, would of course result in the destruction of the inhabitants. Any impact upon the fauna is expected to be negligible, in view of the fact that extensive urbanization has already occurred in the area.

At this time, to our knowledge, no local studies have been conducted on the effects of water temperature change upon the fauna, resulting from stream channelization.

6. Comment

Another alternative to consider in place of channelization, is to create a park in flood prone areas.

February 2, 1976

Response

See Section V.B.5 Flood Control Channel Alternatives, in the final Environmental Impact Statement.

7. Comment

What will be the secondary effects resulting from the proposed action? In other words, this project leads to an increase in population which in turn will affect urbanization, agriculture, public facilities, public utilities, transportation, etc. etc. We recommend that consideration be given and discussed.

Response

Secondary effects are discussed in the context of Section III, Probable Impact of Project, in the final Environmental Impact Statement. Coordination has been effected with the appropriate agencies and utility companies regarding secondary impacts resulting from the increased population.

8. Comment

Will there be any type of debris, sediment, or basin?

Response

During the site preparation phase of this project, temporary settling basins will be utilized. The exact number and locations of these basins will be determined as the need arises. Similar settling basins have been satisfactorily employed in the Hanakuli Resilience Ache, Bra Series development.

9. Comment

What has been the flooding history of this area in terms of property damages, loss of lives, monetary losses, flooding frequency, stream's water gauge reading, etc. etc.

Response

No detailed, readily available data are maintained in the flooding history of the Hanakuli area in terms of property damages, loss of lives, monetary losses, flooding frequency, stream's water gauge reading, etc. The following is a general description from the Preliminary Report on Ground-water Resources of the Waianae Area, Oahu, Hawaii by C.F. Jones.

"Rainstorms associated with cold fronts or with low pressure systems are less frequent than trade-wind showers, but are of greater intensity. Characteristically, several such storms occur each winter. The low pressure systems commonly move in from a southerly or westerly direction and bring rain that is evenly distributed over a large area. Rain associated with a cold front is sporadic and local.

Dr. Richard E. Marland

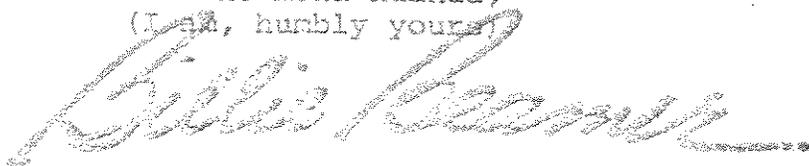
- 4 -

February 2, 1976

During the periods of most intense rainfall, several inches of rain may fall in a few hours, rapidly filling stream channels that normally are dry. A large part of the run-off from such storms quickly discharges to the sea. A high ratio of run-off to precipitation is common when a storm follows closely after a heavy rain that has saturated the ground, but run-off may be very low if the storm has been preceded by a prolonged period of little or no rain."

Thank you for reviewing our Environmental Impact Statement for Nanakuli Residence Lots, 4th and 5th Series and Flood Control Channel.

Owau no meka haahaa,  
(I am, humbly yours)



(MRS.) BILLIE BEAMER, CHAIRMAN

VB:ahn

bcc: Nanakuli Residence Lots, 4th & 5th Series & Flood Control Channel  
✓Wilson Okamoto & Associates  
Reading file  
Chrono file



DEPARTMENT OF THE ARMY  
U. S. ARMY ENGINEER DISTRICT, HONOLULU  
BLDG. 230, FT. SHAFTER  
APO SAN FRANCISCO 96558

PODED-P

27 June 1975

Dr. Richard E. Marland, Director  
Office of Environmental Quality Control  
State of Hawaii  
550 Halekauwila Street  
Honolulu, Hawaii 96813

Dear Dr. Marland:

We have reviewed the draft environmental impact statement for Nanakuli Residence Lots 4th and 5th Series and Flood Control Channel and have the following comments.

a. According to the storm drainage standards of the City and County of Honolulu, the design discharge for an area of 390 acres is 1,800 cubic feet per second (cfs). The statement should present the basis for the 890 cfs shown on page 5.

b. The statement notes that the flood channel is being constructed to cope with the cumulative drainage effects imposed by all urbanization on the north side of the valley. Neither the project description section nor the land uses discussion (page 18) describe the status of the 4th and 5th increment in terms of total future development in the valley. It is not clear whether these are the final increments for the area or if other future developments have been fully considered in the design of required public facilities.

c. The discussion of biological impacts should also address the conversion of over a mile of natural unlined watercourse to a fully lined channel and its impacts to stream life and the natural drainage setting.

d. An application for a Department of the Army permit, pursuant to Section 10 of the River and Harbor Act of 1899, has been received by the Pacific Ocean Division, U.S. Army Corps of Engineers. It should be noted that the requirement for a Federal permit will necessitate compliance with Section 106 of the National Historic Preservation Act of 1966 and the related Advisory Council on Historic Preservation procedures dated 25 January 1974. The procedures are applicable to any

PODED-P

Dr. Richard E. Marland

27 June 1975

Federal, Federally assisted, or Federally licensed undertaking affecting properties included in or eligible for inclusion in the National Register. Since the railroad crossing makai of Farrington Highway will be affected by this project, the nature and extent of its effect must be adequately documented and coordinated with the State Historic Preservation Officer. This documentation will be required for submission to the Advisory Council on Historic Preservation as part of the Section 10 permit evaluation.

Sincerely yours,



ELROY CHINN  
Acting Chief, Engineering Division

January 30, 1976

Mr. Elroy Chinn, Acting Chief  
Engineering Division  
Department of the Army Corps of Engineers  
Building 230, Fort Shafter  
APO San Francisco 96558

Dear Mr. Chinn:

Subject: Nanakuli Residence Lots, 4th and 5th Series and  
Flood Control Channel

Reference is made to your letter dated June 27, 1975, commenting on the subject draft Environmental Impact Statement. Your concerns are addressed in the order in which they were presented.

1. Comment

According to the storm drainage standards of the City and County of Honolulu, the design discharge for an area of 390 acres is 1800 cubic feet per second (cfs). The statement should present the basis for the 890 cfs shown on page 5.

Response

The statement has been corrected to read 1850 cfs.

2. Comment

Neither the project description section nor the land uses discussion (page 18) describe the status of the 4th and 5th increment in terms of total future development in the valley. It is not clear whether these are the final increments for the area or if other future developments have been fully considered in the design of required public facilities.

Response

A General Plan, Preliminary Draft, February 14, 1975, prepared for the Department of Hawaiian Home Lands, State of Hawaii, by Spencer, Koebig and Koebig, suggests available space for

over 1500 homes on land with less than 20% slope. Accordingly, 500 acres can be designated as available for future residential use. If these 500 acres are developed for housing, there may be a HHL Community in Nanakuli of well over 10,000 persons. (See Figure 8).

The proposed land-use pattern indicates that drainage from these potential houselots will be accommodated by Nanakuli Stream on the south side of the valley, with very limited impact, if any, upon the proposed Nanaikapono Flood Control Channel improvement.

Required public facilities for future developments planned within the valley will be considered during the design phase of such development.

3. Comment

The discussion of biological impacts should also address the conversion of over a mile of natural unlined watercourse to a fully lined channel and its impacts to stream life and the natural drainage setting.

Response

These trapped ponds of water occur only after heavy rainfall, which is sporadic throughout the year (See Section II.A.5, Rainfall). Between downpours, and during the dry summer months, these ponds completely dry-up, leaving the inhabitants to perish.

The elimination of stream-bed pools, if present at the outset of construction, would of course result in destruction of the inhabitants. Any impact on the fauna is expected to be negligible, in view of the fact that extensive urbanization has already occurred in the area.

At this time, to our knowledge, no local studies have been conducted on the effects of water temperature change caused by concrete channelization, upon the stream biota.

4. Comment

Since the railroad crossing makai of Farrington Highway will be affected by this project, the nature and extent of its effect must be adequately documented and coordinated with the State Historic Preservation Officer.

Mr. Elroy Chinn

- 3 -

January 30, 1976

Response

Refer to Section III.C.1.j., Historical and Archaeological Impacts, in the Final EIS.

Thank you for reviewing our Environmental Impact Statement for Nanakuli Residence Lots, 4th and 5th Series and Flood Control Channel.

Owau no meka haahaa,  
(I am, humbly yours)



(MRS.) BILLIE BEAMER, CHAIRMAN

WB:mkn

bcc: Nanakuli Residence Lots, 4th & 5th Series & Flood Control Channel  
Reading file  
Chrono file  
/Wilson Okamoto & Associates

UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

440 Alexander Young Building, Honolulu, Hawaii 96813

July 11, 1975

Dr. Richard E. Marland  
Office of Environmental Quality Control  
550 Halekauwila St., Rm. 301  
Honolulu, Hawaii 96813

Dear Dr. Marland:

Re: Draft Environmental Impact Statement - Nanakuli Residence Lots  
4th and 5th Series and Flood Control Channel

Our staff has reviewed the above-mentioned draft EIS. Our primary concerns are the properties of the soil and the inadequate attention given to the channel's ocean outlet.

The soils contained within the proposed project sites have physical properties--slow permeability and a high shrink-swell potential--which must be considered in the design and installation of the works of improvement to preclude future problems. Therefore, we recommend a thorough onsite investigation of soils contained within the project site to determine the limitations of the soils for construction purposes.

Sand accumulation blocks stream mouths at Nanakuli to the East and Ulehawa on the West throughout the year. The stagnant water that accumulates in the channel as a result of this blockage may be a problem to this project. Also, failure of the sand plug to breach during flood flows will cause overtopping and subsequent flooding of adjacent land.

We offer further comments for your consideration:

1. Page 4, par. 3. - The soil survey of the island of Oahu, published by the Soil Conservation Service, identifies the soils contained within project site 1 and the lower half of site 2 as belonging to the Lualualei series. These soils are extremely stony clays, having a high shrink-swell potential, slow permeability rate, and a slope range from 3 percent to 35 percent.

With this slow permeability rate, cesspools will not function properly and may require frequent pumping. The high shrink-swell characteristics of the soil may damage the cesspools.



2. Page 5, par. 2. - The "flood channel" should be referred to as the "Nanaikapono Stream."
3. Page 5, par. 2. - The figure "890" should be "1890 cfs."
4. Page 7, par. 2. - In addition to the problems associated with a slow permeability rate, the potential for shrink-swell should be thoroughly evaluated. Unless special measures are taken during construction to control the effects of the shrink-swell characteristic of the soil, extensive damage could result to cesspools, underground utilities, sidewalks and building foundations. There is also a hazard of slip-page on the steeper slopes where the soil is shallower.
5. Page 7, par. 5. - Where is the Nanakuli Stream located? It is not shown on a map. The sandbar at the mouth of the stream may cause flooding if it does not breach during storm runoff. Are there any improvements planned for the stream?
6. Page 8, par. 2. - Is the Nanaikapono Stream blocked by a sandbar at its mouth? If it is, the same problems mentioned for the Nanakuli Stream would apply.
7. Page 9, par. 1. - What will prevent the proposed lined channel from being used as a dump?
8. Page 26, par. 3. - What specific measures will be used to reduce and prevent erosion from construction sites?
9. Page 28, par. 2. - The grading of 61 acres and the simultaneous construction of a flood control channel can be expected to extensively increase the erosion and sedimentation hazard, unless appropriate preventive measures are taken. What effect will the increase in sediment load have on the ocean waters surrounding the outlet? How large would this sediment load be?

We thank you for the opportunity to comment on this environmental impact statement.

Sincerely,



Francis C. H. Lum  
State Conservationist

February 2, 1976

Mr. Francis C. H. Lum, State Conservationist  
U. S. Department of Agriculture  
Soil Conservation Service  
440 Alexander Young Building  
Honolulu, Hawaii 96813

Dear Mr. Lum:

Subject: Wanakuli Residence Lots, 4th and 5th Series and  
Flood Control Channel

Reference is made to your letter dated July 11, 1975, commenting on the subject draft Environmental Impact Statement. Your concerns are addressed in the order in which they were presented.

1. Comment

The soils contained within the proposed project sites have physical properties--slow permeability and a high shrink-swell potential--which must be considered in the design and installation of the works of improvement to preclude future problems. Therefore, we recommend a thorough onsite investigation of soils contained within the project site to determine the limitations of the soils for construction purposes.

Response

A thorough onsite investigation of soils contained within the project site has been conducted. A copy of the lengthy soils exploration report is available for review at the Department of Hawaiian Home Lands Office.

2. Comment

Sand accumulation blocks stream mouths at Wanakuli to the East and Ulehawa on the West throughout the year. The stagnant water that accumulates in the channel as a result of this blockage may be a problem to this project. Also, failure of the sand plug to breach during flood flows will cause overtopping and subsequent flooding of adjacent land.

Response

Sand accumulation blocking stream mouths at Nanakuli to the East, and Ulehawa on the West, and resulting problems associated with stagnant water, are not anticipated for this particular project.

The Nanaikapono outlet differs from both Nanakuli and Ulehawa, in that it is elevated higher above mean sea level, and therefore less susceptible to sand deposition.

3. Comment

Page 4, par. 3. - .....With this slow permeability rate, cesspools will not function properly and may require frequent pumping. The high shrink-swell characteristics of the soil may damage the cesspools.

Response

Refer to Section I.D.1 of the Final Environmental Impact Statement.

4. Comment

Page 5, par. 2. - The "flood channel" should be referred to as the "Nanaikapono Stream."

Response

This statement has been clarified.

5. Comment

Page 5, par. 2. - The figure "390" should be "1890 cfs."

Response

The figure "390" has been corrected to read "1850 cfs."

6. Comment

Page 7, par. 2. - In addition to the problems associated with a slow permeability rate, the potential for shrink-swell should be thoroughly evaluated. Unless special measures are taken during construction to control the effects of the shrink-swell characteristic of the soil, extensive damage could result to cesspools, underground utilities, sidewalks and building foundations. There is also a hazard of slippage on the steeper slopes where the soil is shallower.

Response

Refer to Response for Comment #1.

February 2, 1976

7. Comment

Page 7, par. 5.- Where is the Manakuli Stream located? It is not shown on a map. The sandbar at the mouth of the stream may cause flooding if it does not breach during storm runoff. Are there any improvements planned for the stream?

Response

The location of Manakuli Stream is shown in Figure 8 of the Final EIS.

According to the City and County Drainage Department, there are no improvements planned at this time for Manakuli Stream.

8. Comment

Is the Manaikapono Stream blocked by a sandbar at its mouth? If it is, the same problems mentioned for the Manakuli Stream would apply.

Response

From site visitations, it was noted that the periodic sand build-up at the mouth of the existing outlet varies in height with the maximum observed being 3+ feet. (Refer to response for Comment #2)

9. Comment

What will prevent the proposed lined channel from being used as a dump?

Response

A chain-link fence (4' minimum) will be erected along both sides of the completed flood control channel as a deterrent.

10. Comment

What specific measures will be used to reduce and prevent erosion from construction sites?

Response

During the site preparation phase, temporary silting basins will be utilized. The exact number and locations of these basins will be delineated on the project construction plans. Similar silting basins have been satisfactorily employed in the Manakuli Residence Lots, 3rd Series development.

11. Comment

What effect will the increase in sediment load have on the ocean waters surrounding the outlet? How large would this sediment load be?

Mr. Francis C. H. Lum

- 4 -

February 2, 1976

Response

Possible increased flow and sediment transport in Wanaikapono Stream, resulting from the conversion of undeveloped land into residential komasitas and the conversion of the stream to a flood control channel for the residential development probably will not have a measurable detrimental effect on the marine environment. This opinion is based on three observations. The first is that the environment is already naturally stressed by sand movement, secondly, wave action and nearshore currents should rapidly mix and disperse the stream discharge, and thirdly, rainfall is sparse on the leeward coast of Oahu.

The sediment load is computed to be 5.2 tons per acre per year.

Thank you for reviewing our Environmental Impact Statement for Nanakuli Residence Lots, 4th and 5th Series and Flood Control Channel.

Owau no meka haahaa,  
(I am, humbly yours)

  
(MRS.) BILLIE BEAMER, CHAIRMAN

WB:mkn

bcc: Nanakuli Residence Lots, 4th & 5th Series & Flood Control Channel  
Reading file  
Chrono file  
✓ Wilson Okamoto & Associates

C2130-04



United States Department of the Interior

FISH AND WILDLIFE SERVICE

BUREAU OF SPORTS, FISHERIES AND WILDLIFE

Division of River Basin Studies

321 Millilani Street

Honolulu, Hawaii 96813

Reference: RB

July 1, 1975

RECEIVED  
JUL 2 1975

Wilson, Okamoto & Associates, Inc.  
Suite 800  
1150 So. King Street  
Honolulu, Hawaii 96814

WILSON, OKAMOTO & ASSOCIATES

Gentlemen:

We have reviewed the draft environmental impact statement "Nanakuli Residence Lots 4th and 5th Series and Flood Control Channel" and provide the following comments for your consideration.

We suggest that the description of the marine fauna of the nearshore waters off Nanikapono Stream (Part II-A, Biological Factors, section c: Offshore, pp. 15 - 17) be expanded to include a description of the infauna of the coral bench and adjacent coral heads. In addition, an accurate analysis of the nearshore community structure is impossible without the inclusion of both generic and specific names of all marine fauna observed. Therefore, we recommend that Table 1 (appendix) be expanded to include these names.

We appreciate the opportunity to comment on this proposed action.

Sincerely yours,

*Maurice H. Taylor*

Maurice H. Taylor  
Area Supervisor

cc: RD, RB, Portland

*0 - H.O. / [unclear]  
1 - [unclear] / [unclear]*

February 2, 1976

Mr. Maurice H. Taylor, Area Supervisor  
U. S. Department of the Interior  
Fish and Wildlife Service  
Division of River Basin Studies  
321 Mililani Street  
Honolulu, Hawaii 96813

Dear Mr. Taylor:

Subject: Nanakuli Subdivision, 4th and 5th Series and Flood  
Control Channel

Reference is made to your letter dated July 1, 1975, commenting on the subject draft Environmental Impact Statement. Your concerns are addressed in the order in which they were presented.

1. Comment

We suggest that the description of marine fauna of the nearshore waters off Manaikapono Stream (Part II - A, Biological Factors, Section C: Offshore, pp. 13-17) be expanded to include a description of the infauna of the coral bench and adjacent coral heads. In addition, an accurate analysis of the nearshore community structure is impossible without the inclusion of both generic and specific names of all marine fauna observed. Therefore, we recommend that Table I (appendix) be expanded to include these names.

Response

Refer to Section II.A4.c and Tables 1, 2 and 3 in the Final Environmental Impact Statement.

Thank you for reviewing our Environmental Impact Statement for Nanakuli Residence Lots, 4th and 5th Series and Flood Control Channel.

Owau no meka haahaa,  
(I am, humbly yours)

(MRS.) BILLIE BEAMER, CHAIRMAN

WB:mkn

cc: Nanakuli Residence Lots, 4th & 5th Series & Flood Control Channel  
Wilson Okamoto & Associates

GEORGE R. ARIYOSHI  
GOVERNOR OF HAWAII



CHRISTOPHER COBB, CHAIRMAN  
BOARD OF LAND & NATURAL RESOURCES

EDGAR A. HAMASU  
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. BOX 921  
HONOLULU, HAWAII 96808

DIVISIONS:  
CONVEYANCES  
FISH AND GAME  
FORESTRY  
LAND MANAGEMENT  
STATE PARKS  
WATER AND LAND DEVELOPMENT

June 23, 1975

Environmental Quality Commission  
550 Halekauwila Street  
Room 301  
Honolulu, Hawaii 96813

Gentlemen:

We have reviewed the EIS for the fourth and fifth series of the Nanakuli Residential Lots project.

We note that plans do not provide for a playground in Area I.

We recommend that the Department of Health review the interim sewage disposal system.

The scientific name for the mynah is misspelled on page 14. It should be Aeridotheres tristis.

Very truly yours,

  
CHRISTOPHER COBB  
Chairman of the Board

January 30, 1976

Mr. Christopher Cobb, Chairman of the Board  
State of Hawaii  
Department of Land and Natural Resources  
P. O. Box 621  
Honolulu, Hawaii 96809

Dear Mr. Cobb:

Subject: Nanakuli Residence Lots,  
4th and 5th Series and Flood Control Channel

Reference is made to your letter dated, June 23, 1975, commenting on the subject draft Environmental Impact Statement. Your concerns are addressed in the order in which they were presented.

1. Comment

We note that plans do not provide for a playground in Area 1.

Response

Refer to Section 11.B4.f of the Final Environmental Impact Statement.

2. Comment

We recommend that the Department of Health review the interim sewage system.

Response

Refer to Section I.D.1 of the final Environmental Impact Statement. The Department of Health will have the opportunity to review the interim sewage disposal system during the design and construction phase of this project.

3. Comment

The scientific name for the mynah is misspelled on page 14. It should be Aeridotheres tristis.

Mr. Christopher Cobb

-2-

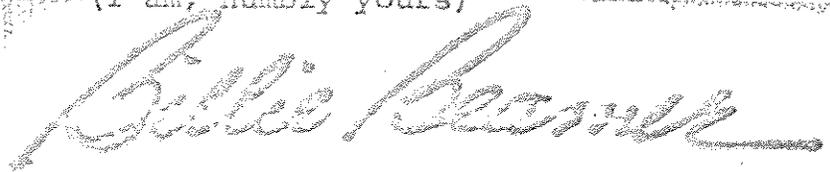
January 30, 1976

Response

The correction has been made.

Thank you for reviewing our Environmental Impact Statement for Nanakuli Residence Lots, 4th and 5th Series and Flood Control Channel.

Owau no meka haahaa,  
(I am, humbly yours)



(MRS.) BILLIE BEAMER, CHAIRMAN

BB:kt

bcc; ✓ Nanakuli Residence Lots, 4th & 5th Series & Flood Control Channel  
Reading file  
Chrono file  
✓ Wilson Okamoto & Associates ; OLMR.

GEORGE R. ARIYOSHI  
GOVERNOR



E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS  
DOUGLAS S. SAKAMOTO  
WALLACE AOKI

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813

IN REPLY REFER TO:

June 24, 1975

ATP 8.3163

Dr. Richard E. Marland  
Interim Director  
Office of Environmental  
Quality Control  
550 Halekauwila St., Rm. 301  
Honolulu, Hawaii 96813

Dear Dr. Marland:

Subject: Draft EIS, Nanakuli Residence Lots and  
Flood Control Channel, Nanakuli, Oahu

In reference to the subject environmental impact statement, please be advised that:

1. Page 22, last paragraph. We suggest this paragraph be reworded to say that coordination with the Department of Transportation indicates that the existing 4-lane undivided highway has sufficient capacity to accommodate the traffic generated by the proposed development.
2. Page 28-29. The vehicle/residence ratio of 0.61 (peak hour) appears reasonable and the 127 vehicles generated, therefore, appears reasonable.

Sincerely,

  
E. ALVEY WRIGHT  
Director



MAIL ROOM  
P. O. BOX 32  
HONOLULU, HAWAII 96812  
  
MAIL ROOM OFFICE  
P. O. BOX 135  
HONOLULU, HAWAII 96812

STATE OF HAWAII  
DEPARTMENT OF HAWAIIAN HOME LANDS  
P. O. BOX 1079  
HONOLULU, HAWAII 96813

MAIL ROOM  
P. O. BOX 332  
HONOLULU, HAWAII 96813

February 3, 1976

Mr. E. Alvey Wright, Director  
State of Hawaii, Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813

143  
6 1976

Dear Mr. Wright:

Subject: Nanakuli Residence Lots, 4th and 5th Series and  
Flood Control Channel AIP 8.3163

Reference is made to your letter dated June 24, 1975, commenting on the subject draft Environmental Impact Statement. Your concerns are addressed in the order in which they were presented.

1. Comment  
Page 22, last paragraph. We suggest this paragraph be reworded to say that coordination with the Department of Transportation indicates that the existing 4-lane undivided highway has sufficient capacity to accommodate the traffic generated by the proposed development.

Response  
The paragraph has been reworded to read as suggested.

2. Comment  
Page 28-29. The vehicle/residence ratio of 0.61 (peak hour) appears reasonable and the 127 vehicles generated, therefore, appear reasonable.

Response  
None required.

Thank you for reviewing our Environmental Impact statement for Nanakuli Residence Lots, 4th and 5th Series and Flood Control Channel.

Owau no neka haahaa,  
(I am, humbly yours)

Waku

cc: Nanakuli Res. Lots, 4th & 5th Series & Flood Control Channel  
Riding, Chrono, Wilson Chamoto & Associates, Dept. of Trans.

GEORGE R. ARIYOSHI  
GOVERNOR



HIDEO MURAKAMI  
COMPTROLLER  
  
MIKE N. TOKUNAGA  
DEPUTY COMPTROLLER

STATE OF HAWAII  
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES  
P. O. BOX 119, HONOLULU, HAWAII 96810

LETTER NO. (P)1801.5

JUN 24 1975

Dr. Richard Marland  
Interim Director  
Office of Environmental  
Quality Control  
550 Halekauwila Street, Room 301  
Honolulu, Hawaii 96813

Dear Dr. Marland:

Subject: Draft EIS for Nanakuli Residence  
Lots Fourth and Fifth Series and  
Flood Control Channel

We have reviewed the subject EIS and have the following  
comments to offer:

1. Page 5, third paragraph: It should be indicated that the school being referred to is Nanaikapono Elementary School and the quonset building will be relocated at no cost to the Department of Education.
2. Page 21, Section c. Drainage: According to the attached drainage master plan for the multi-school complex, some of the surface water runoff from the school will discharge into Area 1 through three proposed culverts under Haleakala Avenue as shown in Figure 3 of the subject EIS. At the time the drainage master plan for the school was completed, there were no development plans for Area 1. The subject EIS should indicate how the drainage through the proposed culverts will be handled.
3. Page 21, Section e. Schools: In the third sentence, change "is" to "as". In the second paragraph of this section, it should be noted that Nanaikapono Elementary School is located in the tsunami inundation zone and that this is one of the main reasons for planning a new elementary school. The Board of Education's policy on school sites states: "In selecting a new school site or relocating an existing school, the school site shall be outside the 'tsunami zone' as established by the Tsunami Research Center, State of Hawaii". The new elementary school will be located on the multi-school complex site rather than across the street as previously planned.

Dr. Richard Marland  
Page 2

Ltr. No. (P)1801.5

4. Figure 3: Our comments are shown in red on the attached copy of Figure 3.

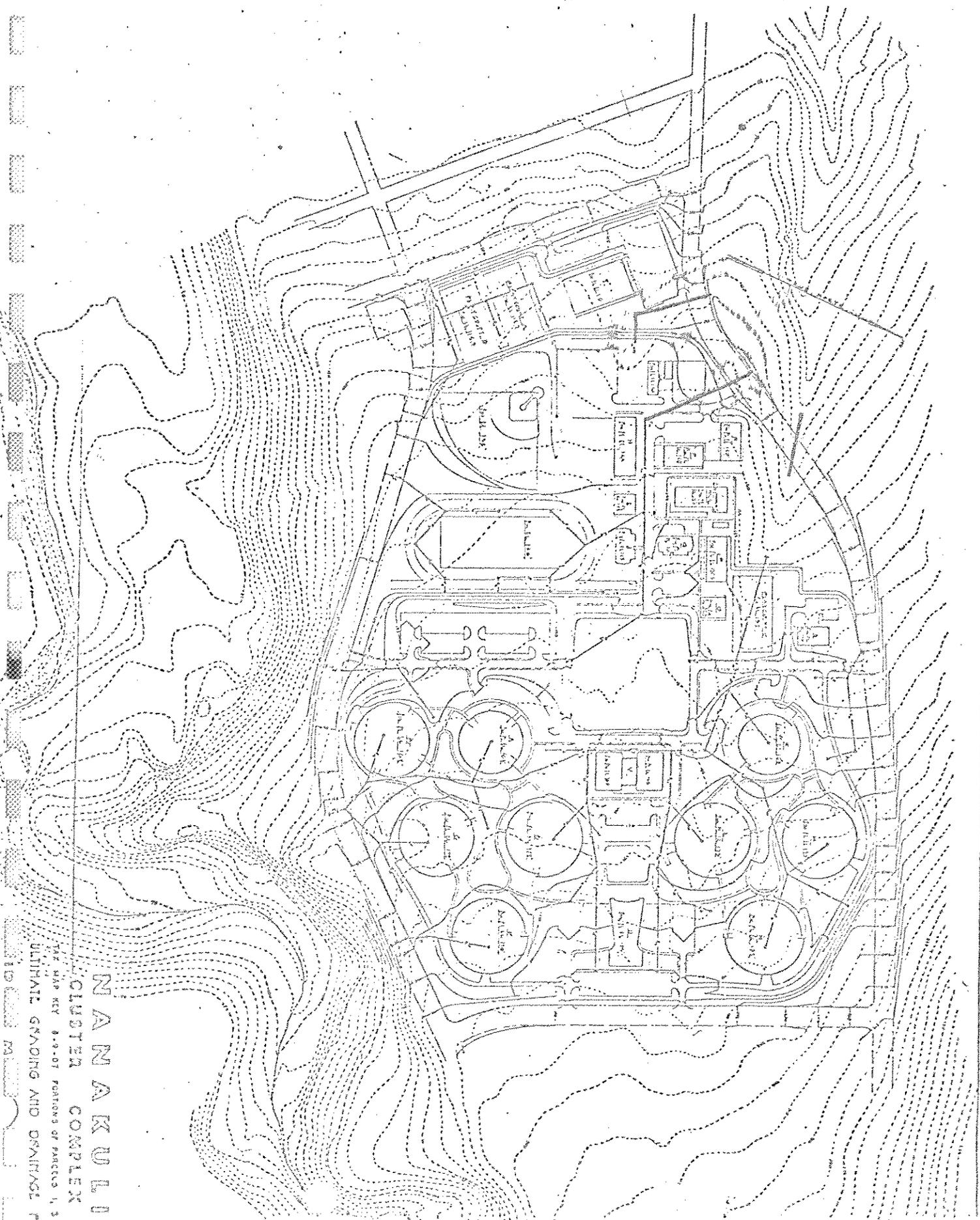
Thank you for allowing us to comment on the subject EIS. If there are any questions, please call us.

Very truly yours,



HIDEO MURAKAMI  
State Comptroller

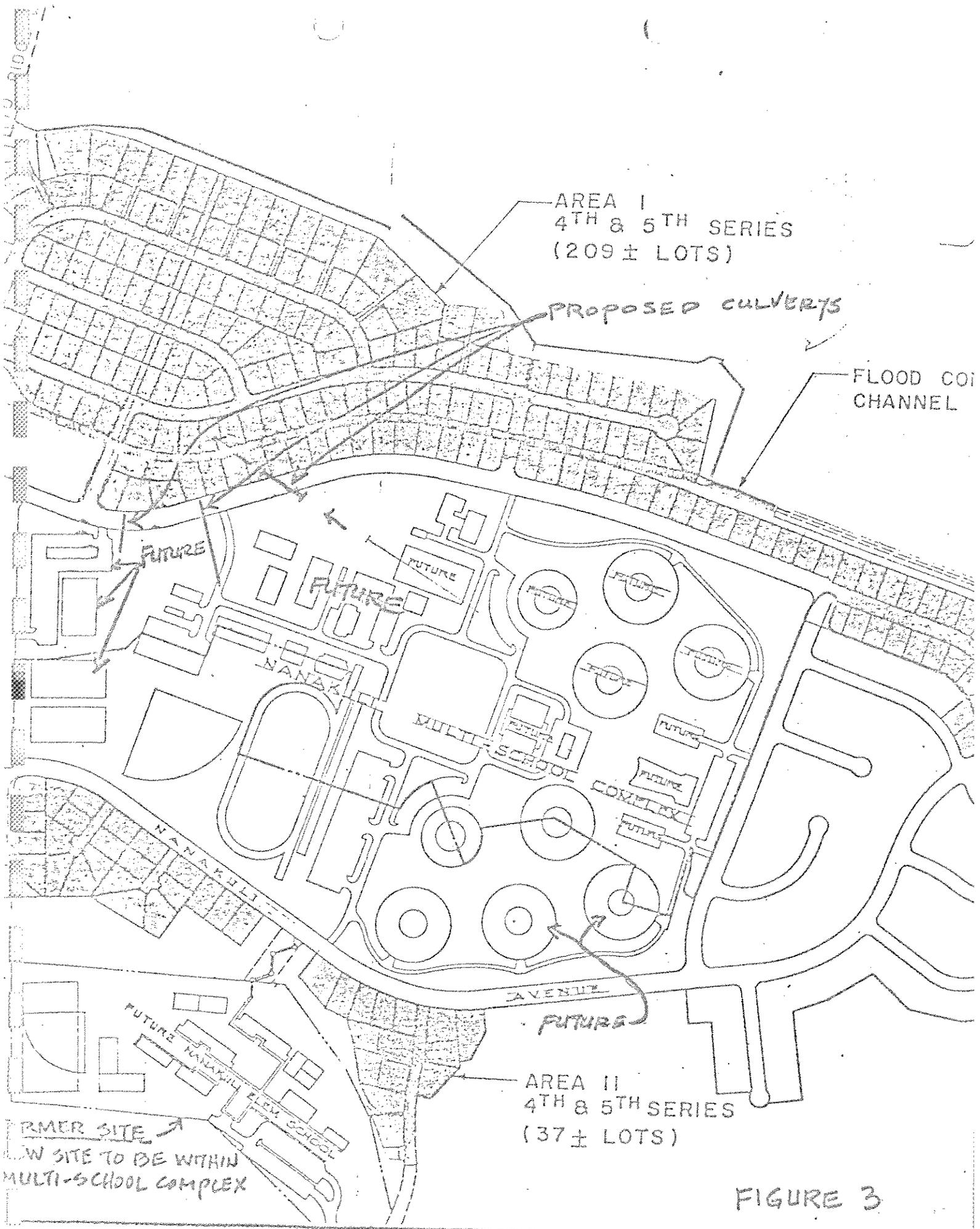
Attachment



NANKULI  
CLUSTER COMPLEX

THE MAP REV. 8-9-07 PORTIONS OF PARCELS 1, 3  
ULTIMATE GRADING AND DRAINAGE PLAN

10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



AREA I  
4TH & 5TH SERIES  
(209 ± LOTS)

PROPOSED CULVERTS

FLOOD CONTROL CHANNEL

FUTURE

FUTURE

MULTI-SCHOOL COMPLEX

FUTURE

FUTURE

AREA II  
4TH & 5TH SERIES  
(37 ± LOTS)

FORMER SITE  
NEW SITE TO BE WITHIN  
MULTI-SCHOOL COMPLEX

FIGURE 3

February 2, 1976

Mr. Hideo Murakami, State Comptroller  
State of Hawaii, Department of Accounting & General Services  
P. O. Box 119  
Honolulu, Hawaii 96810

Dear Mr. Murakami:

Subject: Nanakuli Residence Lots, 4th and 5th Series  
and Flood Control Channel

Reference is made to your letter dated June 24, 1975 (Letter No. (P) 1301.5), commenting on the subject draft Environmental Impact Statement. Your concerns are addressed in the order in which they were presented.

1. Comment

Page 5, third paragraph: It should be indicated that the school being referred to is Nanaikapono Elementary School and the quonset building will be relocated at no cost to the Department of Education.

Response

These points have been clarified.

2. Comment

Page 21, Section c. Drainage: According to the attached drainage master plan for the multi-school complex, some of the surface water runoff from the school will discharge into Area 1 through three proposed culverts under Haleakala Avenue as shown in Figure 3 of the subject EIS.

At the time the drainage master plan for the school was completed there were no development plans for Area 1. The subject EIS should indicate how the drainage through the proposed culverts will be handled.

Response

Provisions will be made to accommodate the surface water runoff from the multi-school complex. The school storm drains will be incorporated in the subdivision drainage system.

3. Comment

Page 21, Section e: In the third sentence, change "is" to "as". In the second paragraph of this section, it should be noted that Manaikapono Elementary School is located in the tsunami inundation zone and that this is one of the main reasons for planning a new elementary school....The new elementary school will be located on the multi-school complex site rather than across the street as previously planned.

Response

Corrections have been made in the Final EIS.

4. Comment

Figure 3: Our comments are shown in red on the attached copy of Figure 3.

Response

Corrections have been made for Figure 3 in the Final Environmental Impact Statement.

Thank you for your reviewing our Environmental Impact Statement for Manakuli Residence Lots, 4th and 5th Series and Flood Control Channel.

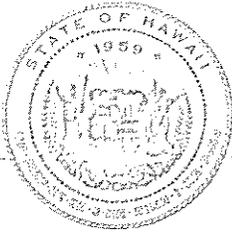
Owau no meka haahaa,  
-(I am, humbly yours)

(MRS.) BILLIE BEAMER, OAHUANA

ES/AMJ

cc: DA&GS file; Manakuli file; Chrono file  
Wilson Okamoto & Associates

Reading copy



DEPARTMENT OF PLANNING  
AND ECONOMIC DEVELOPMENT

GEORGE R. ARIYOSHI  
Governor

HIDETO KONO  
Director

FRANK SKRIVANEK  
Deputy Director

Kamamalu Building, 250 South King St., Honolulu, Hawaii • Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

July 8, 1975

Ref. No. 4644

MEMORANDUM

TO: Dr. Richard E. Marland, Director  
Office of Environmental Quality Control

FROM: Hideto Kono, Director *[Signature]*

SUBJECT: Draft EIS for the Nanakuli Residence Lots 4th and 5th Series and  
Flood Control Program of the Department of Hawaiian Home Lands

This draft EIS generally addresses the probable environmental impacts that can be anticipated from the subject project. However, the impact of project-generated vehicular traffic on public safety and existing capacities of the circulation system in the surrounding community might be further clarified by including a circulation plan which addresses these concerns in the final EIS. It is also suggested that coordination with appropriate State and City and public works agencies during its preparation would ensure that this plan complies with existing standards and future plans for the subject community.

We concur with the development of this project and have no further comments to offer at this time.



STATE OF HAWAII  
DEPARTMENT OF HAWAIIAN HOME LANDS  
P. O. BOX 1879  
HONOLULU, HAWAII 96805

January 30, 1976

Mr. Hideto Kono, Director  
Department of Planning and Economic Development  
Kamamalu Building  
250 South King Street  
Honolulu, Hawaii 96813

Dear Mr. Kono:

Subject: Nanakuli Residence Lots, 4th and 5th Series and  
Flood Control Channel Ref. No. 4644

Reference is made to your letter dated July 8, 1975, commenting on the subject draft Environmental Impact Statement. Your concerns are addressed in the order in which they were presented.

1. Comment

However, the impact of project-generated vehicular traffic on public safety and existing capacities of the circulation system in the surrounding community might be further clarified by including a circulation plan which addresses these concerns in the final EIS.

Response

Refer to Figure 3 in the Final EIS.

2. Comment

It is also suggested that coordination with appropriate State and City and public works agencies during its preparation would insure that this plan complies with existing standards and future plans for the subject community.

Response

Coordination with the appropriate State, City, and public works agencies have and will continue to be effected in order to ensure that this project complies with existing standards and future plans for the subject community.

Thank you for reviewing our Environmental Impact Statement for Nanakuli Residence Lots, 4th and 5th Series and Flood Control Channel.

Owau no meka haahaa,  
(I am, humbly yours)

(MRS.) BILLIE BEAMER, CHAIRMAN

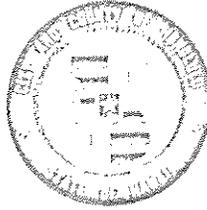
WB:kg

Nanakuli Res. Lots, 4th & 5th Series & Flood Control Channel  
Reading file, Chrono file  
Wilson Okamoto & Associates, JPEO

DEPARTMENT OF GENERAL PLANNING  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET  
HONOLULU, HAWAII 96813

FRANK F. FASI  
MAYOR



ROBERT R. WAY  
CHIEF PLANNING OFFICER

DGP6/75-1511(JB)

June 10, 1975

Dr. Albert Tom, Chairman  
Environmental Quality Commission  
State of Hawaii  
550 Halekauwila Street, Room 301  
Honolulu, Hawaii 96813

Dear Dr. Tom:

Nanakuli Residence Lots 4th and 5th Series  
and Flood Control Channel  
Draft Environmental Impact Statement

We have examined the above-mentioned draft and offer the following comments for your consideration.

Certain lands earmarked for agricultural purposes under the General Plan Detailed Land Use Map for the Nanakuli district will be affected by the proposed development.

Although real properties under the jurisdiction of the Department of Hawaiian Home Lands are exempt from State and County land use and zoning designations, we nonetheless wish to note that this development is not consistent with the land use policy for the City and County of Honolulu and the State Land Use District Regulations for agricultural districts. The planning of public facilities is done on the basis of land use policy, so nonconforming uses will have impact upon existing master plans for sewers, water supply, and other services. Comments on system capacities should be solicited from the agencies providing these services.

It is unclear whether a traffic impact study for this project was made. The traffic impact study or report, if available, should be appended to the environmental impact statement.

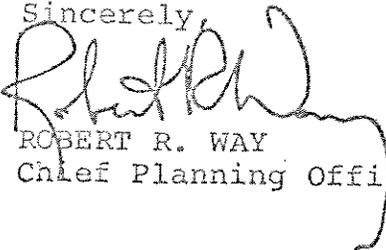
Discussion on grading and drainage (pp. 26-27) might be expanded to include additional information disclosing the full extent of grading and excavation programmed, and of soil erosion problems that could be anticipated by implementing this proposal.

Dr. Albert Tom  
Page 2

Possible adverse noise effects to classroom activities at Nanaikapono Elementary School, resulting from channel improvement operations, are not mentioned.

We hope our comments are helpful.

Sincerely,



ROBERT R. WAY  
Chief Planning Officer

RRW:fmt

cc: Department of Hawaiian  
Home Lands



WAIMEA OFFICE

P. O. BOX 125

KAMUELA, HAWAII 96743

KEAUKAHA OFFICE

P. O. BOX 803

HILO, HAWAII 96720

MAUI OFFICE

P. O. BOX 22

KAHULUI, MAUI 96732

MOLOKAI OFFICE

P. O. BOX 198

HOOLEHUA, MOLOKAI 96729

KAUAI OFFICE

P. O. BOX 332

LIHUE, KAUAI 96766

STATE OF HAWAII  
DEPARTMENT OF HAWAIIAN HOME LANDS  
P. O. BOX 1679  
HONOLULU, HAWAII 96805

January 30, 1976

Mr. Robert R. Way, Chief Planning Officer  
Department of General Planning  
City and County of Honolulu  
650 So. King Street  
Honolulu, Hawaii 96813

Dear Mr. Way:

Subject: Nanakuli Residence Lots, 4th and 5th Series and  
Flood Control Channel DGP6/75-1511 (JB)

Reference is made to your letter dated June 16, 1975, commenting on the subject draft Environmental Impact Statement. Your concerns are addressed in the order in which they were presented.

1. Comment

Certain lands earmarked for agricultural purposes under the General Plan Detailed Land Use Map for the Nanakuli district will be affected by the proposed development.

Response

The power and duties of the Governor and the Department of Land and Natural Resources do not extend to land having the status of Hawaiian Home Lands except as provided in the Act (ss. 205 and 206, HHCA, 1920).

Refer to p. 1, Introduction, Final EIS.

2. Comment

Comments on system capacities should be solicited from the agencies providing these services.

Response

Coordination with appropriate State, City and public works agencies concerning system capacities have, and will continue to be effected.

3. Comment

The traffic impact study or report, if available, should be appended to the environmental impact statement.

Response

A summary of the traffic impact analysis is included in Section III.c.l.f. of the Final Environmental Impact Statement.

4. Comment

Discussion on grading and drainage (pp. 26-27) might be expanded to include additional information disclosing the full extent of grading and excavation programmed, and of soil erosion problems that could be anticipated by implementing this proposal.

Response

Earth work is expected to result in approximately 200,000 cu. yd. of excavation, over an area of approximately 62 acres.

Any existing land surface, which is disturbed or altered (clearing, grubbing, grading, excavation, cut and fill, etc.), becomes susceptible to the natural elements and subsequent soil erosion. During construction, temporary settling basins will be utilized to mitigate the anticipated erosion problem. This method of control has been satisfactorily employed during site preparation work for the Nanakuli Residence 3rd Series development.

New residents are expected to grass and landscape their individual lots as soon as possible, to minimize soil loss.

5. Comment

Possible adverse noise effects to classroom activities at Nanaikapono Elementary School, resulting from channel improvement operations, are not mentioned.

Response

Channel improvement operations are unavoidably a noisy undertaking. All possible mitigative action and care will be exercised to minimize noise levels during school hours.

Thank you for reviewing our Environmental Impact Statement for Nanakuli Residence Lots, 4th and 5th Series and Flood Control Channel.

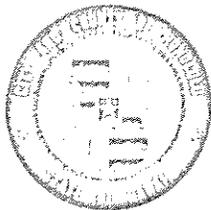
Owau no meka haahaa,  
(I am, humbly yours)

(MRS.) BILLIE BEAMER, CHAIRMAN

wa...  
C 12 of Honolulu  
bcc: Nanakuli Res. Lots, 4th & 5th Series & Flood Control Channel  
Reading file, Chrono file

DEPARTMENT OF PUBLIC WORKS  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET  
HONOLULU, HAWAII 96813



FRANK F. FASI  
MAYOR

KAZU HAYASHIDA  
DIRECTOR AND CHIEF ENGINEER

ENV 75-213

June 12, 1975

Office of Environmental Quality Control  
Office of the Governor  
State of Hawaii  
550 Halekauwila Street, Room 301  
Honolulu, Hawaii 96813

Gentlemen:

Subject: Draft Environmental Impact Statement  
for Nanakuli Residence Lots 4th and  
5th Series and Flood Control Channel

We have reviewed the draft statement and have the following comments.

1. Wastewater Disposal. The statement does not discuss how the proposed sewer collection system serving Hawaiian Homes' Nanakuli subdivision will be financed and built. The applicability of the City's sewer improvement district program for Hawaiian Home Lands (HHL) subdivision is questionable because assessment liens cannot be placed on the benefited lessee's lot.

Individual household cesspools are being utilized for wastewater disposal in the existing HHL subdivision as stated in the EIS. The most recent record indicates that there are approximately 123 defective cesspools within the subdivision which require City's pumping or chemical treatment services. The addition of 244 new lots will not improve the situation.

2. Flood Control. Planning and design of the Nanaikapona Stream flood control project should be coordinated with the department's Drainage Section of the Division of Engineering.

Adequate easements for stream maintenance should be provided.

Very truly yours,

*Wallace Mujelma*  
KAZU HAYASHIDA  
Director and Chief Engineer

cc: Division of Sewers  
Division of Engineering

January 30, 1976

Mr. Kazu Hayashida, Director and Chief Engineer  
Department of Public Works  
City and County of Honolulu  
650 So. King Street  
Honolulu, Hawaii 96813

Dear Mr. Hayashida:

Subject: Nanakuli Residence Lots,  
4th and 5th Series and Flood Control Channel ENV 75-213

Reference is made to your letter dated June 12, 1975, commenting on the subject draft Environmental Impact Statement. Your concerns are addressed in the order in which they were presented.

1. Comment

Wastewater Disposal. The statement does not discuss how the proposed sewer collection system serving Hawaiian Homes' Nanakuli subdivision will be financed and built. The applicability of the City's sewer improvement district program for Hawaiian Home Lands (HHL) subdivision is questionable because assessment liens cannot be placed on the benefited lessee's lot.

Response

The proposed sewer collection system will be financed by the Department of Hawaiian Home Lands. After completion, maintenance of the facility will be dedicated to the City and County of Honolulu.

2. Comment

Individual household cesspools are being utilized for wastewater disposal in the existing Hawaiian Home Lands subdivision as stated in the EIS. The most recent record indicates that there are approximately 123 defective cesspools within the subdivision which require City's pumping or chemical treatment services. The addition of 244 new lots will not improve the situation.

Mr. Kazu Hayshida

-2-

January 30, 1976

Response

Refer to Section I.D.1. of the Final Environmental Impact Statement.

3. Comment

Flood Control. Planning and design of the Nanaikapono Stream flood control project should be coordinated with the department's Drainage Section of the Division of Engineering.

Adequate easements for stream maintenance should be provided.

Response

Coordination with the department's Drainage Section of the Division of Engineering has, and will continue to be effected.

Thank you for reviewing our Environmental Impact Statement for Nanakuli Residence Lots, 4th and 5th Series and Flood Control Channel.

Owau no meka haahaa,  
(I am, humbly yours)

(MRS.) BILLIE BEAMER, CHAIRMAN

BB:kt

bcc: ✓ Nanakuli Residence Lots, 4th and 5th Series & Flood Control  
Channel  
Reading file  
Chrono file  
✓ Wilson Okamoto & Associates

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU

630 SOUTH BERETANIA

POST OFFICE BOX 3410

HONOLULU, HAWAII 96843



JOHN HENRY FELIX, Chairman  
STANLEY S. TAKAHASHI, Vice Chairman  
GEORGE APDUHAN  
YOSHIE H. FUJINAKA  
KAZU HAYASHIDA  
WALTER D. HOWARD  
E. ALVEY WRIGHT

EDWARD Y. HIRATA  
Manager and Chief Engineer

June 18, 1975

Dr. Richard E. Marland  
Interim Director  
Office of Environmental Quality Control  
550 Halekauwila Street, Room 301  
Honolulu, Hawaii 96813

Dear Dr. Marland:

SUBJECT: Draft Environmental Impact Statement for  
Nanakuli Residence Lots, 4th and 5th  
Series, and Flood Control Channel

We have reviewed the draft environmental impact statement and do not anticipate any adverse effects on potable groundwater resources in the area from the use of cesspools. However, precautions should be taken during construction to protect our 8-inch main lying along the proposed channel and our mains on Farrington Highway.

Should further information be needed, contact Mr. Lawrence Whang at 548-5221.

Very truly yours,

Edward Y. Hirata  
Manager and Chief Engineer

January 30, 1976

FEB 5 1976

Mr. Edward Y. Hirata, Manager and Chief Engineer  
Board of Water Supply  
City and County of Honolulu  
630 South Beretania Street  
Post Office Box 3410  
Honolulu, Hawaii 96743

Dear Mr. Hirata:

Subject: Nanakuli Residence Lots,  
4th and 5th Series and Flood Control Channel

Reference is made to your letter dated June 18, 1975, commenting on the subject draft Environmental Impact Statement. Your concerns are addressed in the order in which they were presented.

1. Comment

.....However, precautions should be taken during construction to protect our 8-inch main lying along the proposed channel and our mains of Farrington Highway.

Response

Measures will be outlined in the construction specification on precautions taken during construction to protect the 8-inch main lying along the proposed channel and your mains on Farrington Highway.

Thank you for reviewing our Environmental Impact Statement for Nanakuli Residence Lots, 4th and 5th Series, and Flood Control Channel.

Owau no meka haahaa,  
(I am, humbly yours)

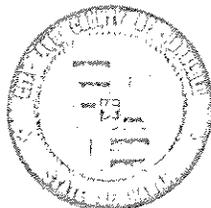
  
(MRS.) BILLIE BEAMER, CHAIRMAN

WB:kt

bcc: /Nanakuli Res. Lots, 4th & 5th Series & Flood Control Channel  
Reading file  
Chrono file  
/Wilson Okamoto & Associates, C + E of Honolulu

DEPARTMENT OF LAND UTILIZATION  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET  
HONOLULU, HAWAII 96813



FRANK F. FASI  
MAYOR

GEORGE S. MORIGUCHI  
DIRECTOR

LU6/75-1592 (BAM)

June 25, 1975

MEMORANDUM

TO : DR. RICHARD E. MARLAND, DIRECTOR  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

FROM : GEORGE S. MORIGUCHI, DIRECTOR OF LAND UTILIZATION

SUBJECT : DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR NANAKULI  
RESIDENCE LOTS 4TH AND 5TH SERIES AND FLOOD CONTROL

We have reviewed the above, and offer the following comments for your consideration:

(1) General: It would benefit reviewers if, as a matter of general practice, statements prepared for the Department of Hawaiian Home Lands included more specifics on the Hawaiian Homes Commission Act, with particular regard to how the Department is empowered to meet its objectives. Many of the comments or questions which follow reflect this lack of specificity.

(2) Reference: Page 1, Section I, A, "Introduction"

Comments: What costs, if any, will be incurred by the "potential homeowner"? Is the houselot given outright in fee to an eligible applicant? Will applicants be obliged to construct a dwelling in compliance with any predetermined requirements? Will any form of public assistance be available for meeting construction costs?

(3) Reference: Page 2, Section I, C, "Location and Size"

Comments: The project site should be fully identified including tax map key parcel numbers. (Note: Figure 1 was missing in our copy.) Acreage of each of the two separate development sites should be noted.

Dr. Richard E. Marland  
June 25, 1975  
Page 2

- (4) Reference: Page 3, Section I, D, "Description"

Comments: The proposed houselot sites are designated for agricultural use on the Oahu General Plan Detailed Land Use Map and zoned AG-1 Restricted Agricultural District. The statement that "the subdivisions will be developed in accordance with the City and County of Honolulu's Subdivision Rules and Regulations" is erroneous, since lots of 7,500 square feet would not be permitted (a minimum lot area of 2 acres is required). (Please refer to item (1), our general comments on the role, purpose, duties and powers of the Department of Hawaiian Home Lands.)

- (5) Reference: Page 5, Same Section

Comments: It is noted that a natural channel now 160 feet away from an elementary school will be realigned to within 75 feet. (Safety measures are discussed on page 34, Section IV.) While alternatives to the concrete-lined flood control channel itself are discussed briefly on page 37, Section V, we find no discussion of alternative alignments. Have alternatives been explored?

- (6) Reference: Page 7, Section II, A, "Project Sites"

Comments: Since houselot sites appear to be on a hillside, and soils are clays and decomposed rock, there may exist a potential slide problem. A soils engineering report and recommendations are needed.

- (7) Reference: Page 18, Same Section

Comments: The statement under "7. Land Use" should be corrected as reflected in our comment above, item (4).

- (8) Reference: Page 37, Section V, A, "Subdivision"

Comments: "3. Use of Land for Other Purposes" should be corrected to reflect the fact that the houselot sites are not "appropriately zoned and designated for residential purposes" by the county.

Thank you for the opportunity to review and comment on this statement.

  
GEORGE S. MORIGUCHI  
Director

GSM:rh

PROJECT OFFICES

WAIKĀEʻĀ OFFICE

P. O. BOX 125

KAMŪĒLA, HAWAII 96743

KEAUKAHA OFFICE

P. O. BOX 433

HILO, HAWAII 96726



STATE OF HAWAII  
DEPARTMENT OF HAWAIIAN HOME LANDS  
P. O. BOX 1279  
HONOLULU, HAWAII 96805

PROJECT OFFICES

MAUI OFFICE

P. O. BOX 22

KAHULUI, MAUI 96732

MOLOKAI OFFICE

P. O. BOX 198

HOOLEHUA, MOLOKAI 96729

KAUAI OFFICE

P. O. BOX 332

LIHUE, KAUAI 96766

February 4, 1976

Mr. George S. Moriguchi, Director  
Department of Land Utilization  
City and County of Honolulu  
650 So. King Street  
Honolulu, Hawaii 96813

Dear Mr. Moriguchi:

Subject: Nanakuli Residence Lots, 4th and 5th Series  
and Flood Control Channel

Reference is made to your letter dated June 25, 1975, commenting on the subject draft Environmental Impact Statement. Your concerns are addressed in the order in which they were presented.

1. Comment

It would benefit reviewers if, as a matter of general practice, statements prepared for the Department of Hawaiian Home Lands included more specifics on the Hawaiian Homes Commission Act, with particular regard to how the Department is empowered to meet its objectives. Many of the comments or questions which follow reflect this lack of specificity.

Response

Refer to Section I.A., Introduction, in the Final Environmental Impact Statement.

2. Comment

Page 1, Section I.A., "Introduction". What costs, if any, will be incurred by the "potential homeowner"? Is the houselot given outright in fee to an eligible applicant? Will applicants be obliged to construct a dwelling in compliance with any predetermined requirements? Will any form of public assistance be available for meeting construction costs?

February 4, 1976

Response

Costs incurred by the "potential homeowner":

- a. Rental of one dollar per year.
- b. All taxes assessed upon the tract and improvements thereon, after 7 years of occupancy. (An original lessee shall be exempt from all taxes for the first 7 years from the date of lease).
- c. Construction of dwelling units and other permanent improvements. The house lot is leased to an eligible applicant for a term of 99 years.

The Department of Hawaiian Homes will construct dwellings for the potential homeowner to maintain a visually compatible neighborhood, as in the 2nd Series development.

The Department is authorized to make loans to: a) lessees of any tract; b) the successor in interest of the lessee; and c) any agricultural cooperative association, if all members of such association are lessees. (s.214, HHCA, 1920).

The amount of loans at any one time to any lessee or any successor or successors in interest, of a residence lot shall not exceed \$20,000.

3. Comment

Page 2, Section I, C, "Location and Size". The project site should be fully identified including tax map key parcel numbers. Acreage of each of the two separate development sites should be noted.

Response

The tax map key parcel numbers are not available at this time. The State of Hawaii Department of Taxation will assign numbers to the individual parcels at a later date, which is in accordance with their normal procedure.

Area #1 (Figure 3) = 51 $\frac{1}{2}$  acres  
Area #2 (Figure 3) = 11 $\frac{1}{2}$  acres

4. Comment

Page 3, Section I, D, "Description". The statement that "the subdivisions will be developed in accordance with

February 4, 1976

the City and County of Honolulu's Subdivision Rules and Regulations" is erroneous, since lots of 7,500 square feet would not be permitted (a minimum lot area of 2 acres is required). (Please refer to item (1), our general comments on the role, purpose and duties and powers of the Department of Hawaiian Home Lands).

Response

The statement has been deleted from the Final Environmental Impact Statement (Refer to the Response for Comment 1).

5. Comment

Page 5, Section I, D, "Description". While alternatives to the concrete-lined flood control channel itself are discussed briefly on page 37, Section V, we find no discussion of alternative alignments. Have alternatives been explored?

Response

Slight deviations of alignment were considered during the initial planning phases only in regards to topography and natural setting. The existing natural alignment was deemed the most practical.

6. Comment

Page 7, Section II, A, "Project Sites". Since the house-lot sites appear to be on a hillside, and soils are clays and decomposed rock, there may exist a potential slide problem. A soils engineering report and recommendations are needed.

Response

A copy of the lengthy soils exploration report is available for review at the Department of Hawaiian Home Lands Office.

7. Comment

Page 18, Section II, A, "Project Sites". The statement under "7. Land Use" should be corrected as reflected in our comment above, item (4).

February 4, 1976

Response

Corrections have been made in the Final Environmental Impact Statement.

8. Comment

Page 37, Section V, A, "Subdivision". "3. Use of Land for-Other Purposes" should be corrected to reflect the fact that the houselot sites are not "appropriately zoned and designated for residential purposes" by the County.

Response

This section has been corrected as suggested in the Final Environmental Impact Statement.

Thank you for reviewing our Environmental Impact Statement for Nanakuli Residence Lots, 4th and 5th Series and Flood Control Channel.

Owau no meka haahaa,  
(I am, humbly yours)

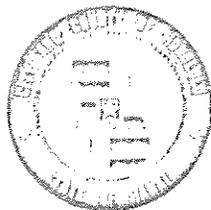
(MRS.) BILLIE BEAMER, CHAIRMAN

BB/emj

Bcc: Nanakuli Residence Lots, 4th & 5th Series  
and Flood Control Channel  
Wilson, Okamoto & Associates  
Chrono file  
Reading file

DEPARTMENT OF PARKS AND RECREATION  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET  
HONOLULU, HAWAII 96813



FRANK F. FASI  
MAYOR

YOUNG SUK KO  
DIRECTOR

July 9, 1975

Office of Environmental  
Quality Control  
550 Halekauwila Street, Room 301  
Honolulu, Hawaii 96813

Attention Mr. Allan Suematsu

Gentlemen:

We have reviewed the EIS for the Nanakuli Residence Lots 4th and 5th Series and Flood Control Channel projects and make the following comments and recommendations.

There are inadequate public park facilities in Nanakuli Valley to serve the project. Nanakuli Beach Park, located over 3/4 mile away could not effectively serve the project. It should primarily be a beach park used for picnicking, camping, and other aquatic purposes.

To provide needed parks for the Nanakuli residents, we propose the expansion of Nanakuli Beach Park when Nanaikapono Elementary School is relocated to the new school complex in the Valley. We also propose the development of a major "active" recreation park on the Camp Andrew's site along Farrington Highway if this land becomes available for park purposes.

We are concerned about the flood control channel that is being proposed through Nanakuli Beach Park. We recommend that construction

Office of Environmental  
Quality Control

Page 2

July 9, 1975

plans of the flood control channel be submitted to the Department of Parks and Recreation for review and approval.

Should you have any questions, please contact Mr. Jason Yuen, telephone 523-4884.

Sincerely,

  
YOUNG SUK KO, Director

cc: Department of Hawaiian Home Lands

PROJECT OFFICES

WAIMEA OFFICE

P. O. BOX 126

WAILUA, HAWAII 96743

KEAUKAHA OFFICE

P. O. BOX 833

HILO, HAWAII 96720



STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

P. O. BOX 1879

HONOLULU, HAWAII 96805

January 30, 1976

PROJECT OFFICES

MAUI OFFICE

P. O. BOX 22

KAHULUI, MAUI 06702

MOLOKAI OFFICE

P. O. BOX 198

MOOLEHUA, MOLOKAI 06729

KAUAI OFFICE

P. O. BOX 332

LIHUE, KAUAI 96766

Mr. Young Suk Ko, Director  
Department of Parks and Recreation  
City and County of Honolulu  
650 South King Street  
Honolulu, Hawaii 96813

Dear Mr. Ko:

Subject: Nanakuli Residence Lots, 4th and 5th Series and Flood Control Channel

Reference is made to your letter dated July 9, 1975, commenting on the subject draft Environmental Impact Statement. Your concerns are addressed in the order in which they were presented.

1. Comment

There are inadequate public park facilities in Nanakuli Valley to serve the project. Nanakuli Beach Park, located over 3/4 mile away could not effectively serve the project. It should primarily be a beach park used for picnicking, camping, and other aquatic purposes.

Response

Refer to Section 11.B4,f. of the Final Environmental Impact Statement.

2. Comment

To provide needed parks for the Nanakuli residents, we propose the expansion of Nanakuli Beach Park when Nanaikapono Elementary School is relocated to the new school complex in the Valley. We also propose the development of a major "active" recreation park on the Camp Andrew's site along Farrington Highway if this land becomes available for park purposes.

Response

None.

Mr. Young Suk Ko

-2-

January 30, 1976

3. Comment

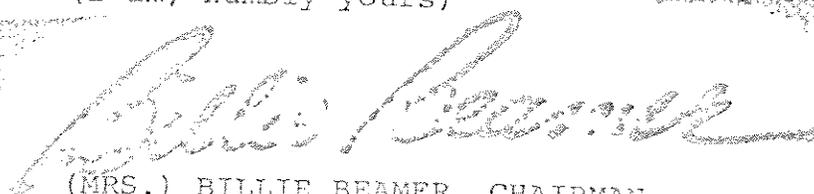
We are concerned about the flood control channel that is being proposed through Nanakuli Beach Park. We recommend that construction plans of the flood control channel be submitted to the Department of Parks and Recreation for review and approval.

Response

Construction plans of the flood channel will be submitted to the Department of Parks and Recreation for review during the design phase of this project.

Thank you for reviewing our Environmental Impact Statement for Nanakuli Residence Lots, 4th and 5th Series and Flood Control Channel.

Owau no meka haahaa,  
(I am, humbly yours)



(MRS.) BILLIE BEAMER, CHAIRMAN

WB:kt

bcc: ✓ Nanakuli Res. Lots, 4th and 5th Series & Flood Control Channel  
Reading file  
Chrono file  
✓ Wilson Okamoto & Associates, C. C. et al.

# UNIVERSITY OF HAWAII

LEEWARD COMMUNITY COLLEGE

30 June 1975

## MEMORANDUM

TO: Dr Richard E Marland, Director, OEQC

FROM: Bert Y Kimura, Division of Math and Science *BK*

SUBJECT: Draft EIS, Nanakuli Residence Lots 4th and 5th Series

Although brief, this statement contains too many undocumented statements and conclusions. Some statements appear to be conflicting and discussion of several important environmental impacts is lacking.

- I.B The "high demand for Hawaiian Homes houselots" (p 37) has not been clearly demonstrated. Recent press coverage has suggested that the number of applicants (p 2) may be a poor indicator of demand since many homes are currently standing vacant. How many applicants could be accommodated by homes presently available but not occupied? How many vacant homes currently exist in the Nanakuli area? Of those that express a geographical preference, how many are eventually located in some other area? What is the goal of DHHL with regard to the length of the applicant list? Would DHHL be on target if this list contained only 1000 rather than 3000 or say, only 50? The number of applicants should be placed in some meaningful relative context.
- I.D.2 More detailed information and data is needed to justify the flood-control channel, a major feature of this project. Specifically, what low lying areas are capable of flooding? How many acres? How many homes are endangered by flooding? What has been the extent and frequency of flooding and in what areas? How many residents have reported the "inadequacy of the stream" (p 8) and on how many different occasions? Were field investigators able to find only one resident (p 8) to discuss the flooding situation? Would widening of the stream (without the use of concrete) and subsequent clearing of grasses, shrubs, unwanted debris and clearing of Mano street culverts remedy the flooding hazards? Would this, in fact, be a reasonable alternative to the construction of a full scale flood-control channel?
- II.A.4 How was the survey of flora and fauna (P 12) accomplished? How often were field observations made and over what length of time?
- II.A Air and water quality--A discussion and supporting data should be included concerning water quality parameters of Nanaikapona Stream and ambient air levels of the project site.

- III.C.1.a How much grading is anticipated? What "adverse effects" (line 15) other than erosion is expected? What mitigative measures will be utilized to prevent or minimize erosion?
- III.C.1.b What "cumulative drainage effects" are being referred to? Of what magnitude will this be in comparison to the existing drainage situation?
- III.C.1.c, d. Discussions involving air and water quality is without substance and treated incidentally. These are two major problems resulting from extensive urbanization or residential development and thus must be given serious consideration. What quantity of emissions is expected? Are prevailing wind conditions such that emissions will be diluted and dispersed adequately?
- III.C.1.d This section is inconsistent with IV.A.2 which states that increased surface run-off is anticipated. What are "existing values" of sediment run-off? I don't understand how a housing development can be designed which would diminish sediment run-off below existing values unless the area had been without a vegetation cover prior to development. Is this the case? Further, expected grassing and landscaping by individual residents is unreasonable. This practice is culturally more characteristic of middle-class suburban practices rather than one of "Hawaiian style" (p 19).
- III.C.1.f What magnitude of congestion could possibly occur at the Farrington Highway-Haleakala intersection. This could create discomfort for nearby residents.
- IV.B.2 How much cut and fill is expected?
- IV.C.1 There will be some adverse emissions from vehicular traffic when the subdivisions are completed. Fugitive dust could continue to be a problem if landscaping and grassing is not extensively and immediately accomplished by the residents.
- IV.C Nearshore water quality degradation due to cesspool seepage has occurred in the Ewa Beach area. Potentially, this could occur at this project site also unless cesspool technology has eliminated this problem.
- V.A What about the possibility of project implementation simultaneous with a sewer connection to the Waianae Sewage Treatment Plant? This would obviate expenditures and environmental hazards associated with cesspool construction and maintenance.
- V.B Discussion should include the alternative of clearing overgrown grasses and shrubs, domestic debris and culverts without the construction of a concrete-lined flood control channel.

RECEIVED  
HAWAIIAN HOME LANDS  
DEPARTMENT  
FEBRUARY 6 1976

February 2, 1976

FEB 6 1976

Dr. Bert Y. Kimura  
Division of Math and Science  
University of Hawaii  
Leeward Community College  
96-045 Alaike  
Pearl City 96782

Dear Dr. Kimura:

Subject: Nanakuli Residence Lots 4th and 5th Series  
and Flood Control Channel

Reference is made to your letter dated June 30, 1975, commenting on the subject draft Environmental Impact Statement. Your concerns are addressed in the order in which they were presented.

1. Comment

The "high demand for Hawaiian Homes houseslots" (p. 37) has not been clearly demonstrated. Recent press coverage has suggested that the number of applicants (p. 2) may be a poor indicator of demand since many homes are currently standing vacant. How many applicants could be accommodated by homes presently available but not occupied? How many vacant homes currently exist; in the Nanakuli area? Of those that express a geographical preference, how many are eventually located in some other area? What is the goal of Department of Hawaiian Home Lands with regard to the length of the applicant list? Would Department of Hawaiian Home Lands be on target if this list contained only 1000 rather than 3000 or say, only 50? The number of applicants should be placed in some meaningful relative context.

Response

The Hawaii Housing Authority (HHA) rather than the Department of Hawaiian Home Lands (DHHL) has received recent press coverage concerning vacant homes. These are separately funded agencies with specific purposes and goals.

February 2, 1975

To our knowledge, there are at this time no homes constructed on Department of Hawaiian Home Lands in Nanakuli, standing vacant. The waiting list of approximately 733 applicants expressing preference to be located in the Nanakuli project area is evidence of the obvious housing shortage.

Statistics on applicants expressing a geographical preference, eventually being located to some other area are meaningless, as the move is strictly voluntary.

The goal of Department of Hawaiian Home Lands with regard to the applicant list is, of course, to accommodate as many applicants as possible. It stands to reason; the smaller the waiting list, the greater the percentage of accommodated applicants.

The figure 3,088 is the number of qualified applicants on the waiting list to obtain a Hawaiian home land lease.

2. Comment

I.D.2. More detailed information and data is needed to justify the flood-control channel, a major feature of this project. Specifically, what low lying areas are capable of flooding? How many acres? How many homes are endangered by flooding? What has been the extent and frequency of flooding and in what areas? How many residents have reported the "inadequacy of the stream" (p. 8) and on how many different occasions? Were field investigators able to find only one resident (p. 8) to discuss the flooding situation?

Response

Refer to Figure 9 in the Final EIS for an illustration of flood prone areas.

Flood prone areas encompass an area of approximately 22 acres. Under the present condition, approximately 20 homes are directly endangered by floodings. Nanaikapono Elementary School also lies in a flood prone area.

Since no detailed data is maintained on the extent and frequency of flooding in this area, the following is a general description from the Preliminary Report on the

Ground-water Resources of the Waianae Area, Oahu, Hawaii,  
by C. F. Zones.

"Rain storms associated with cold fronts or with low pressure systems are less frequent than trade-wind showers but are of greater intensity. Characteristically, several such storms occur each winter. The low pressure systems commonly move in from a southerly or westerly direction and bring rain that is evenly distributed over a large area. Rain associated with a cold front is sporadic and local.

During the periods of most intense rainfall, several inches of rain may fall in a few hours, rapidly filling stream channels that normally are dry. A large part of the runoff from such storms quickly discharges to the sea. A high ratio of runoff to precipitation is common when a storm follows closely after a heavy rain that has saturated the ground, but runoff may be very low if the storm has been preceded by a prolonged period of little or no rain."

Records of residents reporting "inadequacy of stream" are not normally maintained.

Contacting and interviewing residents was not an objective of the field investigation.

3. Comment

I.D.2. Would widening of the stream (without the use of concrete) and subsequent clearing of grasses, shrubs, unwanted debris and clearing of Mano Street culverts remedy the flooding hazards? Would this, in fact, be a reasonable alternative to the construction of a full scale flood control channel?

Response

Refer to Section V. B. 6. in the Final EIS.

4. Comment

II.A.4. How was the survey of flora and fauna (p. 12) accomplished? How often were field observations made and over what length of time?

Response

A biologist spent 2 days observing and identifying the various fauna and flora of the project area. Any impact on the flora and fauna is expected to be negligible, in view of the fact that extensive urbanization has already occurred in this area.

5. Comment

II.A. Air and water quality---A discussion and supporting data should be included concerning water quality parameters of Nanaikapono Stream and ambient air levels of the project site.

Response

Water Quality--Refer to letter from the City and County Board of Water Supply, Appendix IX, and Section III. C. 1. d. in the Final Environmental Impact Statement.

Air Quality--Refer to Section III. C. 1. c. in the Final Environmental Impact Statement.

6. Comment

III. C. 1. a. How much grading is anticipated? What "adverse "effects" (line 15) other than erosion is expected? What mitigative measures will be utilized to prevent or minimize erosion?

Response

Earthwork is expected to result in approximately 200,000 cu. yd. of excavations, and 252,000 cu. yd. of embankment over an area of 62 acres.

Other "adverse effects" anticipated during construction are noise, traffic and fugitive dust.

Refer to Section III. C. 1. a. of the Final Environmental Impact Statement for erosion control measures.

7. Comment

III. C. 1. b. What "cumulative drainage effects" are being referred to? Of what magnitude will this be in comparison to the existing drainage situation?

Response

"Cumulative drainage effects" refers to the total run-off resulting from all urbanization within the subject drainage basin. This would result in a total discharge of 1950 cfs as opposed to 1737 under the existing condition.

8. Comment

III. C. 1. c, d. What quantity of emissions is expected? Are prevailing wind conditions such that emissions will be diluted and dispersed adequately?

Response

Refer to Section III. C. 1. c, in the final EIS. Prevailing wind conditions are such that emissions will be diluted and dispersed adequately (Fig. 2).

9. Comment

III. C. 1. d. This section is inconsistent with IV. A. 2 which states that increased surface run-off is anticipated. What are "existing values" of sediment run-off? I don't understand how a housing development can be designed which would diminish sediment run-off below existing values unless the area had been without a vegetation cover prior to development. Is this the case? Further, expected grassing and landscaping by individual residents is unreasonable. This practice is culturally more characteristic of middle-class suburban practices rather than one of "Hawaiian style" (P. 19)..

Response

Existing values of sediment run-off are approximately 5.2 tons/acre/yr. The area has been cleared and improved for pastoral purposes in the past. (See letter from Department of Hawaiian Home Lands dated June 30, 1975, Appendix IX.)

We do not believe that expected grassing and landscaping by individual Hawaiian homesteaders is unreasonable. There is no basis for stating that "this practice is culturally more characteristic of middle-class suburban practices rather than one of "Hawaiian style."

The residents occupying houselots in the recently completed Nanakuli Residence Lots 2nd Series, have shown a great deal of pride, as evidenced by their individual landscaping and yard care.

February 2, 1976

10. Comment

III. C. 1. f. What magnitude of congestion could possibly occur at the Farrington Highway-Haleakala intersection. This could create discomfort for nearby residents.

Response

See Section III. C. 1. f., in the final EIS.

11. Comment

IV. B. 2. How much cut and fill is expected?

Response

See Response to Comment #6.

12. IV. C. 1. There will be some adverse emissions from vehicular traffic when the subdivisions are completed. Fugitive dust could continue to be a problem if landscaping and grassing is not extensively and immediately accomplished by the residents.

Response

The adverse emissions from vehicular traffic when the subdivisions are completed is not expected to be a problem. The prevailing winds (See fig. 2) should rapidly disperse any emissions.

Residents will be encouraged to immediately landscape their houselots.

13. Comment

Nearshore water quality degradation due to cesspool seepage has occurred in the Ewa Beach area. Potentially, this could occur at this project site also unless cesspool technology has eliminated this problem.

Response

Refer to Section I. D. I. of the Final Environmental Impact Statement.

14. Comment

What about the possibility of project implementation simultaneous with a sewer connection to the Waianae Sewage Treatment Plant? This would obviate expenditures and environmental hazards associated with cesspool construction and maintenance.

Response

Project implementation simultaneous with a sewer connection to Waianae Sewage Treatment Plant, obviating expenditures and environmental hazards associated with cesspool construction and maintenance, is the most practical and logical plan. However, the governing factor is the availability of appropriations at present time to implement the proposed project. Refer to Section I. D. 1 of the Final Environmental Impact Statement.

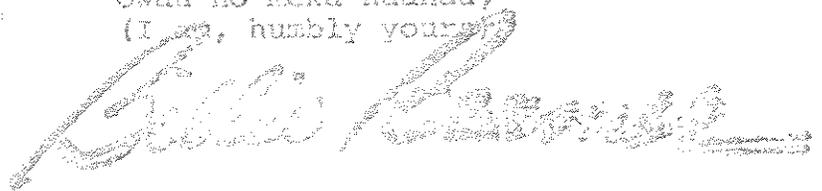
15. V. 5. Discussion should include the alternative of clearing overgrown grasses and shrubs, domestic debris and culverts without the construction of a concrete-lined flood control channel.

Response

See Response to Comment #3.

Thank you for reviewing our Environmental Impact Statement for Nanakuli Residence Lots, 4th and 5th Series and Flood Control Channel.

Owau no meka haahaa,  
(I am, humbly yours)



(MRS.) BILLIE BENNER, CHAIRMAN

BB/emj

Bcc: Nanakuli Res. Lots 4th, 5th Series  
& Flood Control Channel  
~~Wilson, Okamoto & Associates~~  
Chrono file  
Reading file



# University of Hawaii at Manoa

Environmental Center  
Maile Bldg. 10 • 2540 Maile Way  
Honolulu, Hawaii 96822  
Telephone (808) 948-7361

Office of the Director

July 7, 1975

## MEMORANDUM

TO: Richard E. Marland  
FROM: Doak C. Cox  
RE: Review of DEIS on Nanakuli Residence Lots  
4th & 5th Series and Flood Control Channel

Due to constraints in time and available personnel, the Environmental Center has not conducted their usual broad review of this project. The following comments have been prepared by Blaise Caldeira, Claire Shinsato and Jacquelin Miller of the Environmental Center.

Several areas of potential concern have been raised in our review of the above cited DEIS. We would appreciate your consideration of these points in the preparation of the final EIS. Our comments will follow according to the pagination of the text.

P. 3. What is the zoning for this area?

P. 4. Will the sewer feeder lines (linking the proposed interceptor sewer main), be installed as part of this project? If not, consideration should be given to installing these feeder lines during construction of this project, thereby eliminating or at least minimizing future cost, inconvenience and disturbance to the residents of this area.

P. 5. Where will construction of bridges and culverts occur? It should be indicated on a map and discussed further in the final EIS. Adequate drainage is essential.

P. 7. In Area #1, runoff and erosion problems will be much greater due to the sloping terrain. Planting of grass or other erosion controls should be implemented immediately following excavation of the land to decrease runoff and erosion problems. What is the anticipated time schedule between land preparation and actual construction and occupancy of the homes?

Provision for maintenance of the erosion control landscaping should be required of Hawaiian Homes Lands until the owners of the newly constructed houses can assume the responsibility.

Boulders and landslides could be a problem in Area #1. What measures will be taken to eliminate such an occurrence? What present or potential areas are susceptible to damage by boulders and landslides?

Since there are no storm drains or catch basins in Area #1 what provisions will be made to catch or confine runoff material during the excavation and grading phase?

P. 9. What measures are being implemented to inhibit the use of Nanaikapono Stream as "a general dump for old appliances, furniture . . .", etc. and alleviate the clogging problem in the streams? What provisions have been made for periodic maintenance of the stream and outlet areas?

It is essential that grading and clearing for this project be coordinated with all feasible erosion control measures. Sediment introduction to Nanaikapono Stream and eventually to the coastal waters at Nanakuli Beach Park would be a serious environmental impact on this area. The cited direction of nearshore currents moving parallel to the shoreline enhances the aerial damage to the near-shore environment by dispersing sediments over a wider nearshore area.

P. 19. In Paragraph 4, line 2, there is a typographical error. "Except" should read "excerpt."

P. 21, b. Sewage. Installation of cesspools as a means of sewage disposal may not be appropriate for this project area. Cesspools in nearby areas have been found to be inadequate, requiring frequent pumping and/or chemical treatments (Waianae Homes EIS - comments from Kazu Hayashida, Department of Public Works, City & County of Honolulu). Consideration should be given to implementing an alternative sewage system in this subdivision until the proposed interceptor sewer main is constructed.

P. 21, e. Schools. What modifications to the present school system will be necessary to accommodate the expected increase in enrollment due to the project development? Will the new elementary school be completed prior to the occupancy of the housing development? Presently, Nanaikapono Elementary School is already overcrowded and an increase in enrollment could cause severely overcrowded conditions which the present school facilities will not be able to handle. Data on the expected increase in school enrollment at the elementary, intermediate, and high schools should be included in the final EIS.

P. 22. The proposed project will increase traffic problems especially at the two Farrington Hwy. Junctions out of this project area. What is the design capacity of Nanakuli Avenue and Haleakala Avenue? Is it adequate to handle the increased traffic flow?

P. 26, a. Grading. Will the existing trees be destroyed in the grading process? Regardless of their common species status, it would be most unfortunate to destroy potential shade and esthetically desirable plant growth if it can be avoided.

P. 28. Will houses be constructed upon the lots as parts of the construction of this subdivision? If not, what is the time lapse between completion of land construction and housing development? In the interim period the land will be exposed and may pose severe erosion and runoff problems as well as air and dust pollution. Again we recommend immediate implementation of grass and/or other

erosion controls following excavation and grading of the project area.

P. 32, b. Parks and Recreation. Will temporary pedestrian crossings between Nanaikapono Elementary School and Nanakuli Beach Park be built when the existing bridges are removed for improvement of the flood channel?

Are Bikeways being constructed within the subdivision? If so, consideration should be given to connect these bikeways to the school areas and the proposed State Master Plan bikeway corridor (noted in the DEIS) thus linking together the beach parks and other recreational areas.

Will there be any recreational park areas constructed within the subdivision such as mini parks?

P. 33. What safety precautions are being undertaken to insure safe travel of children to and from Nanaikapono School? Bikeways to schools should be physically separated from automotive roadways.

We appreciate the opportunity to have reviewed this DEIS.

  
\_\_\_\_\_  
Doak C. Cox, Director

cc: WRRRC

January 30, 1976

Mr. Doak C. Cox, Director  
University of Hawaii at Manoa  
Environmental Center  
Maile Building 10 -  
2540 Maile Way  
Honolulu, Hawaii 96822

Dear Mr. Cox:

Subject: Nanakuli Residence Lots, 4th and 5th Series and  
Flood Control Channel

Reference is made to your letter dated July 11, 1975, commenting on the subject draft Environment Impact Statement. Your concerns are addressed in the order in which they were presented.

1. Comment

P. 3. What is the zoning for this area?

Response

Refer to Section II.A.7. in the Final Environmental Impact Statement.

2. Comment

P. 4. Will the sewer feeder lines (linking the proposed interceptor sewer main), be installed as part of this project?

Response

Yes, sewage feeder lines will be installed as a part of this project. (Refer to Section I.D.1).

3. Comment

P. 5. Where will construction of bridges and culverts occur? It should be indicated on a map and discussed further in the Final EIS.

Response

Refer to Figure 3 of the Final EIS.

4. Comment

P. 7. In Area #1, runoff and erosion problems will be much greater due to the sloping terrain. Planting of grass or other erosion controls should be implemented immediately following excavation of the land to decrease runoff and erosion problems. What is the anticipated time schedule between land preparation and actual construction and occupancy of the homes?

Response

Due to the incessant demands for the development of Hawaiian homesteads, it is anticipated that the interim period between land preparation and actual construction and occupancy will be minimal.

5. Comment

Provision for maintenance of the erosion control landscaping should be required of the Hawaiian Homes Lands until the owners of the newly constructed houses can assume the responsibility.

Response

Provisions for maintenance of the erosion control landscaping will be specified as required by the City and County grading ordinance.

6. Comment

Boulders and landslides could be a problem in Area #1. What measures will be taken to eliminate such an occurrence? What present or potential areas are susceptible to damage by boulders and landslides?

Response

A cut-off ditch with fence will be constructed along the base of the mountains, behind of Area #1 to prevent rocks from rolling into the subdivision.

The soils study has not disclosed any present or potential areas particularly susceptible to damage by boulders and landslides.

7. Comment

Since there are no storm drains or catch basins in Area #1, what provisions will be made to catch or confine runoff material during the excavation and grading phase?

Response

Refer to Section III.C.1.a., of the Final Environmental Impact Statement.

8. Comment

P. 9. What measures are being implemented to inhibit the use of Manaikapono Stream as "a general dump for old appliances, furniture...", etc. and alleviate the clogging problem in the streams? What provisions have been made for periodic maintenance of the stream and outlet areas?

Response

Fences will be erected along both sides of the flood channel as a deterrent.

After completion, the maintenance of the flood control channel easement will be dedicated to the City and County of Honolulu.

9. Comment

It is essential that grading and clearing for this project be coordinated with all feasible erosion control measures. Sediment introduction to Nanaikapono Stream and eventually to the coastal waters at Nanakuli Beach Park would be a serious environmental impact on this area. The cited direction of nearshore currents moving parallel to the shoreline enhances the aerial damage to the nearshore environment by dispersing sediments over a wider nearshore area.

Response

Refer to III.C.1a of the Final Environmental Impact Statement.

10. Comment

P. 19. In paragraph 4, line 2, there is a typographical error. "Except" should read "excerpt".

Response

The error has been corrected.

11. Comment

P. 21. Installation of cesspools as a means of sewage disposal may not be appropriate for this project area. Cesspools in nearby areas have been found to be inadequate, requiring frequent pumping and/or chemical treatments (Waianae Homes EIS - comments from Kazu Hayashida, Department of Public Works, City and County of Honolulu). Consideration should be given to implementing an alternative sewage system in this subdivision until the proposed interceptor sewer main is constructed.

Response

Refer to Section I.D.1. of the Final Environmental Impact Statement.

12. Comment

P. 21. What modifications to the present school system will be necessary to accommodate the expected increase in enrollment due to the project development? Will the new elementary school be completed prior to the occupancy of the housing development? Presently, Nanaikapono Elementary School is already overcrowded and an increase in enrollment could cause severely overcrowded conditions which the present school facilities will not be able to handle. Data on the expected increase in school enrollment at the elementary, intermediate, and high schools should be included in the Final Environmental Impact Statement.

Response

The expected increase in enrollment due to the project development has been planned for, eliminating the necessity for modifications to the present school system.

The new elementary school is scheduled to be completed and operational by September 1977. Occupancy of the housing development is anticipated by mid-1978.

School enrollment is not expected to increase significantly over the next 5 years. Refer to Section III.C.3.c. in the Final Environmental Impact Statement for enrollment projections at the Elementary, Intermediate, and High School levels.

13. Comment

P. 22. The proposed project will increase traffic problems especially at the two Farrington Hwy. Junctions out of this project area. What is the design capacity of Manakuli Avenue and Haleakala Avenue? Is it adequate to handle the increased traffic flow?

Response

Refer to Section III.C.1.f. of the Final Environmental Impact Statement.

14. Comment

P. 26. Will the existing trees be destroyed in the grading process? Regardless of their common species status, it would be most unfortunate to destroy potential shade and esthetically desirable plant growth if it can be avoided.

Response

The area within the Construction limits will be cleared, including existing kiawe (Prosopis pallida), in the grading process.

15. Comment

P. 28. Will houses be constructed upon the lots as parts of the construction of this subdivision? If not, what is the time lapse between completion of land construction and housing development? In the interim period the land will be exposed and may pose severe erosion and runoff problems as well as air and dust pollution. Again we recommend immediate implementation of grass and/or other erosion controls following excavation and grading of the project area.

Response

Refer to response for Comment #4.

The County grading ordinance will be complied with to minimize erosion and run-off problems, as well as air and dust pollution.

16. Comment

P. 32. Will temporary pedestrian crossings between Nanaikapono Elementary School and Nanakuli Beach Park be built when the existing bridges are removed for improvement of the flood channel?

Response

Some type of provision will be accorded to maintain access between the school and park.

17. Comment

Are bikeways being constructed within the subdivision? If so, consideration should be given to connect these bikeways to the school areas and the proposed State Master Plan bikeway corridor (noted in the DEIS) thus linking together the beach parks and other recreational areas.

Response

There are no plans for bikeways to be constructed within the subdivision.

18. Comment

Will there be any recreational park areas constructed within the subdivision such as mini parks?

Response

This project does not include the construction of any additional recreational park areas.

19. Comment

P. 33. What safety precautions are being undertaken to insure safe travel of children to and from Nanaikapono School? Bike-ways to schools should be physically separated from automotive roadways.

Mr. Doak C. Cox

- 6 -

January 30, 1976

Response

Nanaikapono Elementary School is expected to be relocated to the multi-school complex site by September 1977. This move will eliminate the present hazard of crossing busy Farrington Highway to attend classes.

Thank you for reviewing our Environmental Impact Statement for Nanakuli Residence Lots, 4th and 5th Series and Flood Control Channel.

Owau no meka haahaa,  
(I am, humbly yours)

(MRS.) BILLIE BEAMER, CHAIRMAN

WB:nkn

bcc: Nanakuli Residence Lots, 4th & 5th Series & Flood Control Channel  
Reading file  
Chrono file  
✓Wilson Okamoto & Associates

UNIVERSITY OF HAWAII

Water Resources Research Center  
Office of the Director

MEMORANDUM

July 3, 1975

TO: Richard E. Marland, PhD  
Director OEQC

FROM: Dr. Reginald H. F. Young <sup>2/2/75</sup>

SUBJECT: Draft EIS for Manakuli Residence Lots 4th & 5th Series & Flood Control Channel, prepared for Hawaiian Homes by Wilson, Okamoto & Associates, May 1975

The Draft EIS appears to be well prepared and comprehensive, however, we have the following brief comments:

Although a very minor point, the author states (p. 20 near bottom of page) "A great number of families supplement their diets by fishing or growing produce at home, despite poor soil and little rain." The soils are not very different from other areas on the Waianae coast where successful commercial farming occurs. Also, most farmers & home gardeners use commercial fertilizers and/or manure to supplement the inherent soil fertility. Therefore, it is questionable to state that the soil is poor.

Regarding "little rain", virtually all home gardeners use domestic water to irrigate; therefore, the "little rain" is moot. It is suggested that the phrase, "despite poor soil and little rain" be deleted & leave the rest of the sentence as is.

P. 25. A 4-foot high fence along the channel will hardly be a deterrent to children climbing over them or for people throwing trash over the fence into the channel. On p. 32, (top of page), how do they "anticipate that the development of the proposed channel will encourage adjacent residents from discarding solid waste material into the stream"?

RHFY:cg

cc: Y. Fok  
H. Gee  
E. Murabayashi

PROJECT OFFICES

WAIHEA OFFICE

P. O. BOX 125

WAIHEA, HAWAII 96743

KEAUKAHA OFFICE

P. O. BOX 833

KEAUKAHA, HAWAII 96720



STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

P. O. BOX 1879

HONOLULU, HAWAII 96805

PROJECT OFFICES

MAUI OFFICE

P. O. BOX 22

KAHULUI, MAUI 96737

MOLOKAI OFFICE

P. O. BOX 158

MOLOKAI, MOLOKAI 96729

KAUAI OFFICE

P. O. BOX 232

LIHUE, KAUAI 96756

January 30, 1976

Dr. Reginald H. F. Young, Director  
University of Hawaii  
Water Resources Research Center  
Honolulu, Hawaii 96822

Dear Doctor Young:

Subject: Nanakuli Residence Lots, 4th & 5th Series and Flood Control Channel

Reference is made to your letter dated July 3, 1975, commenting on the subject draft Environmental Impact Statement. Your concerns are addressed in the order in which they were presented.

1. Comment

Although a very minor point, the author states (p. 20 near bottom of page) "a great number of families supplement their diets by fishing or growing produce at home, despite poor soil and little rain." The soils are not very different from other areas on the Waianae coast where successful commercial farming occurs. Also, most farmers and home gardeners; use commercial fertilizers and/or manure to supplement the inherent soil fertility. Therefore, it is questionable to state that the soil is poor.

Regarding "little rain", virtually all home gardeners use domestic water to irrigate; therefore, the "little rain" is moot. It is suggested that the phrase, "despite poor soil and little rain" be deleted and leave the rest of the sentence as is.

Response

The phrase has been corrected as suggested in the Final Environmental Impact Statement.

Dr. Reginald H. F. Young

-2-

January 30, 1976

2. Comment

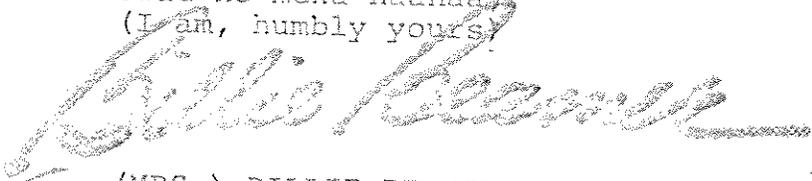
P. 25. A 4-foot high fence along the channel will hardly be a deterrent to children climbing over them or for people throwing trash over the fence into the channel. On p. 32, (top of page), how do they "anticipate that the development of the proposed channel will encourage adjacent residents from discarding solid waste material into the stream"?

Response

The anticipation that the development of the proposed channel will discourage adjacent residents from discarding solid waste material into the stream is an opinion based upon experiences gained in similar local situations where local residents have shown greater concern towards a particular area, after it has been improved.

Thank you for reviewing our Environmental Impact Statement for Nanakuli Residence Lots, 4th and 5th Series and Flood Control Channel.

Owau no meka haahaa  
(I am, humbly yours)



(MRS.) BILLIE BEAMER, CHAIRMAN

WB:kg

bcc: ~~Wanaku~~ Nanakuli Res. Lots, 4th & 5th Series & Flood Control Channel  
Reading file, Chrono file  
✓ Wilson Okamoto & Associates

2. LETTERS REQUIRING NO RESPONSE

a. Federal

Department of the Army

Department of the Air Force

b. State of Hawaii

Department of Health

c. City and County of Honolulu

Department of Housing and Community Development

Department of Transportation Services



DEPARTMENT OF THE ARMY  
HEADQUARTERS UNITED STATES ARMY SUPPORT COMMAND, HAWAII  
APO SAN FRANCISCO 96558

AFZV-SG-EC

10 June 1975

Richard E. Marland, PhD  
Director  
Office of Environmental Quality Control  
State of Hawaii  
Room 301, 550 Halekauwila Street  
Honolulu, Hawaii 96813

Dear Dr. Marland:

The Draft Environmental Impact Statements for Kuliouou Planned Housing Development, Kuliouou Valley, Honolulu, Oahu, State of Hawaii, and  
✓ Nanakuli Residence Lots 4th and 5th Series and Flood Control Channel were reviewed by this office.

We have no comments to offer at this time.

Thank you for the opportunity to review these statements.

Sincerely,

A handwritten signature in cursive script, reading "Lee C. Herwig, Jr.", is positioned above the typed name.

LEE C. HERWIG, JR.  
Colonel, MSC  
Environmental Consultant to Commander,  
U.S. Army Support Command, Hawaii

DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 15th AIR BASE WING (PACAF)  
APO SAN FRANCISCO 96353



17 JUL 1975

TO: DEEE (Mr. Kimura, 4492153)

SUBJECT: Draft Environmental Impact Statements

FROM: Office of Environmental Quality Control  
Office of the Governor  
550 Halekauwila Street  
Tani Office Building, Third Floor  
Honolulu, Hawaii 96813

We have no comment to render relative to the draft environmental impact statements for the following projects:

- Special Education Center of Oahu
- Kulaimano Sewage Disposal System
- Hauula Civic Center
- ✓ Nanakuli Residence Lots, 4th and 5th Series
- Kuliouou Planned Housing Development

ALLAN M. YAMADA  
Asst Dep Comdr for Civil Engrg



GEORGE R. ARIYOSHI  
GOVERNOR OF HAWAII



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

June 19, 1975

GEORGE A. L. YUEN  
DIRECTOR OF HEALTH  
Audrey W. Mertz, M.D., M.P.H.  
Deputy Director of Health  
Henry N. Thompson, M.A.  
Deputy Director of Health  
James S. Kumagai, Ph.D., P.E.  
Deputy Director of Health

In reply, please refer to:

File: EPHS - SS

MEMORANDUM

To: Dr. Richard E. Marland, Interim Director  
Office of Environmental Quality Control

From: Deputy Director for Environmental Health

Subject: Draft Environmental Impact Statement (EIS) for Nanakuli  
Residence Lots 4th and 5th Series and Flood Control Channel

Thank you for allowing us to review and comment on the subject  
EIS. Please be informed that we have no objections to this project.

We realize that the statements are general in nature due to  
preliminary plans being the sole source of discussion. We, therefore,  
reserve the right to impose future environmental restrictions on the  
project at the time final plans are submitted to this office for review.

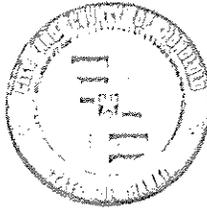
  
JAMES S. KUMAGAI, Ph.D.

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET  
HONOLULU, HAWAII 96813  
PHONE 523-4111

FRANK F. FASI  
MAYOR

RICHARD K. SHARPLESS  
MANAGING DIRECTOR



WILLIAM BLACKFIELD  
DIRECTOR

TYRONE Y. KUSAO  
DEPUTY DIRECTOR

June 6, 1975

Office of Environmental Quality Control  
550 Halekauwila Street, Room 301  
Honolulu, Hawaii 96813

Gentlemen:

Subject: Review of Draft Environmental  
Impact Statements

We have reviewed the following draft environmental impact  
statements:

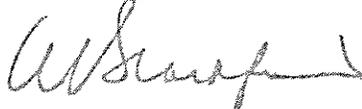
1. Hauula Civic Center  
Hauula, Oahu, Hawaii  
Tax Map Key: 5-4-01: 49  
For: Building Department  
City and County of Honolulu  
By: Clarence Fong, Architect  
Stanley Yim & Associates, Civil Engineer  
Henry Tuck Au, Traffic Engineer
- ✓ 2. Nanakuli Residence Lots 4th and 5th Series  
and Flood Control Channel  
Nanakuli, Oahu, Hawaii  
Tax Map Key: 8-9-07  
For: State of Hawaii  
Department of Hawaiian Homes Land  
By: Wilson, Okamoto & Associates, Ltd.
3. Kuliouou Planned Housing Development  
Kuliouou Valley, Honolulu, Oahu  
Tax Map Key: 3-8-10: 5, 6 and 7  
3-8-11: 1  
For: State of Hawaii  
Department of Hawaiian Homes Land  
By: Wilson, Okamoto & Associates, Ltd.

June 6, 1975

We have no comments. There are no items which relate to and affect this department's program.

We appreciate the opportunity to review the draft environmental impact statements.

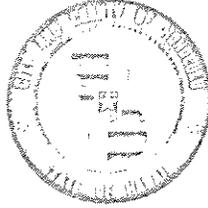
Sincerely,



WILLIAM BLACKFIELD  
Director

DEPARTMENT OF TRANSPORTATION SERVICES  
CITY AND COUNTY OF HONOLULU  
HONOLULU MUNICIPAL BUILDING  
650 SOUTH KING STREET  
HONOLULU, HAWAII 96813

FRANK F. FASI  
MAYOR



GEORGE C. VILLEGAS  
DIRECTOR

JUN 16 1975

PL-3016-75

Office of Environmental Quality Control  
550 Halekauwila St., Rm. 301  
Honolulu, Hawaii 96813

Gentlemen:

Subject: Draft EIS for Nanakuli Residence  
Lots 4th and 5th Series and Flood  
Control Channel

We have reviewed the subject draft and have no  
comments to offer.

Very truly yours,

A handwritten signature in cursive script that reads "Clifford Y. Nohara".

CLIFFORD Y. NOHARA  
Chief, Traffic Engineering