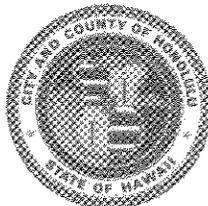


DEPARTMENT OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU

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FRANK F. FASI
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JOHN P. WHALEN
DIRECTOR

BENJAMIN B. LEE
DEPUTY DIRECTOR

87/EIS-11 (BWM)

April 27, 1988

Marvin T. Miura, Ph. D
Interim Director
Office of Environmental Quality Control
State of Hawaii
Kekuanāoa Building, Room 104
465 South King Street
Honolulu, Hawaii 96813

Dear Dr. Miura:

Final Environmental Impact Statement (EIS)
Kapaa Refuse Transfer Station (March 1988)
City and County of Honolulu
Department of Public Works, Refuse Division
Tax Map Key: 4-2-15: 05

We are notifying you that the above is an acceptable EIS document, pursuant to Chapter 343, HRS, and Title 11, Administrative Rules, Department of Health, Chapter 200, Environmental Impact Statement Rules.

The Acceptance Report identifies Visual Impacts as an unresolved issue.

A copy of our Acceptance Report is attached. If you have any questions, please contact Bennett Mark of our staff at 527-5038.

Very truly yours,

A handwritten signature in dark ink, appearing to read "John P. Whalen".

JOHN P. WHALEN
Director of Land Utilization

JPW:sl
1782B
attach.

cc: Alfred J. Thiede, DPW

DEPARTMENT OF LAND UTILIZATION (DLU)
87/EIS-11(BWM)
April 27, 1988

ACCEPTANCE REPORT: KAPAA REFUSE TRANSFER STATION
CHAPTER 343, HRS
FINAL ENVIRONMENTAL IMPACT STATEMENT (EIS)
KAPAA, KAILUA, OAHU
CITY AND COUNTY OF HONOLULU
DEPARTMENT OF PUBLIC WORKS
TAX MAP KEY: 4-2-15: 05

A. BACKGROUND

The City and County of Honolulu, Department of Public Works (DPW) is proposing a Refuse Transfer Station in Kapaa in Kailua, Oahu, in order to improve its island-wide solid waste management program.

The proposed project covers approximately seven (7) acres and is located at the base of the Kapaa Sanitary Landfill on a site formerly mined as a rock quarry by HC&D. It is situated mauka of Kawainui Marsh, and adjacent to the Kapaa Quarry Road which connects to Kalaniana'ole Highway on the south terminus and to Mokapu Saddle Road on the north terminus. The site, which is part of the larger 76-acre parcel Maintenance Yard Facility owned by the City and County of Honolulu, will involve mainly the construction of a single 33,000-square-foot free-standing structure which will house the refuse transfer operations, a separate scale house, external parking areas, roadways, and a drainage system.

Based on preliminary design, the main structure will be approximately 200 feet long, 165 feet wide and 45 feet high. All transfer operations will be conducted within the enclosed structure. The structure will consist of a concrete pad supporting the concrete and metal frame building which will also contain administrative, locker and lunch, maintenance and storage areas. The structure will be designed to be aesthetically compatible with the existing area.

External parking areas will serve employee and official vehicle parking, while trailer parking will be provided near the quarry road.

Surface on-site runoff will be collected by a storm drain system and conveyed to the existing 48-inch culvert at the Kapaa Quarry Access Road for discharge into the Marsh. The

area around the Transfer Station will be landscaped and grassed. The resulting on-site runoff should therefore be relatively free of silt or debris. The drainage from the site will be directed into an existing settling basin off-site prior to discharge into the existing 48-inch drain pipe to the Marsh.

Trailer trucks will be washed only on the outside at the washracks provided and the washwater will be directed to an oil separator structure before being discharged into the storm drainage system. The oil separator will keep the oil and other floatable pollutants from being discharged into the storm drainage system. The exterior washing of the transfer trucks will be no different than what occurs at a commercial car wash or fleet maintenance facility.

An on-site evaporation/holding pond will not be employed since there will be no washing of the refuse transfer facility or the inside of the transfer trailer compartments.

The State Department of Business and Economic Development [DBED; formerly Department of Planning and Economic Development (DPED)] locates the project site within the Secondary Area of its Kawainui Marsh Resource Management Plan. The Plan cites runoff and marsh water quality as the chief concerns in the Secondary Area. Drainage and leachate impacts to the marsh are expected to be minimal as supported by various technical studies conducted in the area.

Mauka of the site, the Kapaa Landfill has been designated for future park use on the Development Plan Public Facilities Map. The area immediately above the proposed transfer station is too steep for active park activities and will serve as a buffer zone to the more usable area on top of the landfill. Because of the topography of the finish grade of the landfill, the transfer station will not be visible unless standing at the edge of the top of the landfill. The entire property has been extensively altered by the former quarrying operation and the present landfill activity. Differences from the lowest to the higher elevations within the existing Maintenance Yard Facility vary from about 25 to 30 feet; the elevation is about 10 feet along Kapaa Quarry Road and about 50 feet along the service road leading to the landfill disposal area.

The transfer station will be one of three major structures in the Maintenance Yard Facility. The other two are the new

Automotive Equipment Service building presently under construction and the existing Refuse Collection building.

It is anticipated that the hours of operation at the refuse transfer facility will be the same as the landfill; 7 AM to 4 PM, seven days a week. Vehicles will first check in at the scale house, which is a separate structure below the transfer station. After weigh-in, vehicles will be directed to go either to the transfer station or to the landfill depending on the type of refuse. Vehicles with mostly noncombustible refuse will be directed to the landfill.

City refuse vehicles, commercial hauler vehicles and other large vehicles will drive onto the receiving area where they will unload into the dumping pit 15 feet below the receiving area. Smaller vehicles will be directed to an upper level to deposit their refuse into bins. Future use of this area may be for a drop-off point for recyclable items. It is projected that the station will require 26 employees, including supervisors, heavy truck drivers, equipment operators, laborers, and scale attendants.

The estimated construction cost for the project is \$6,500,000, and will require about 12 months to complete.

B. PROCEDURE

1. An EIS Preparation Notice (EISPN) was published in the "Office of Environmental Quality Control (OEQC) Bulletin" of October 8, 1987, under the Register of Chapter 343, HRS Documents. This bulletin was distributed to Federal, State, and City and County agencies, as well as interested community groups. Simultaneously, the DPW requested comments from forty (40) Federal, State, City and County and private agencies.
2. The deadline for comments from consulted parties and requests to be a consulted party was set for November 9, 1987. Twenty-six (26) parties made replies to the EISPN. The DPW made responses to all substantive comments, and included these in the Final EIS.

The Kailua Neighborhood Board No. 31 submitted comments after the deadline. Although not required to, the DPW responded to these comments, but did not include its response in the EIS. DPW's response letter is appended to this report.

3. On December 22, 1987, the DPW submitted the Draft EIS to the OEQC and subsequently to the DLU pursuant to the requirements of Chapter 343, HRS.
4. The announcement of the availability of the Draft EIS was published in the December 23, 1987 "OEQC Bulletin." The deadline for public review was set for February 8, 1988.
5. Twenty-six (26) parties commented on the Draft EIS before the deadline. The DPW made point-by-point responses to all substantive comments submitted before the deadline, and included these in the Final EIS. The State Office of Environmental Quality Control (OEQC) and the State Department of Transportation (DOT) submitted comments after the deadline. There were no substantive remarks made by the DOT. The concerns stated by the OEQC appear to have been addressed in the Final EIS or noted as an unresolved issue. The DOT and OEQC comment letters are appended to this report; together with the DPW's response to OEQC.
6. The Final EIS was submitted to the DLU on March 31, 1988.

In conclusion, the DLU finds that the applicant has complied with the EIS procedures in accordance with Chapter 200, Title 11, Environmental Impact Statement Rules, Sub-Chapter 7, Section 11-200-20, 21, and 22.

C. EIS CONTENT

The Final EIS consists of a single volume, containing the EIS, the comments, and four appendixes. The latter include: (1) "Traffic Impact Assessment;" (2) "Air Quality Study;" (3) "Noise Impact Study;" and (4) "Environmental Aspects of Potential Surface Water Runoff and Leachate Migration."

The Final EIS includes additions, revisions, and clarifications. These principally include the following items:

1. Summary

The Summary section was revised to include the estimated construction cost and time required for completing the project.

2. Section III, Project Description and Statement of Objectives

Part B, Project Location was revised so that a new section describing the future park use of the Kapaa Landfill was added.

3. Section IV, Alternatives Considered

a. Part B.1, "Hydrology" was corrected so that the incorrect reference that runoff would contain some treated process water was deleted.

b. Part C, "Biological Characteristics" was revised by adding a new section on "Aquatic Fauna."

4. Section VI, Relationships to Plans, Policies, and Controls

a. Part C.2, "Development Plan" was revised with the addition of a new section describing the Development Plan Public Facilities Map (DPPFM) Park designation, the apparent conflict with the DPPFM Solid Waste Management designation, and the City Council's rationale for resolving these apparently conflicting DPPFM policies.

b. Figure 5, "Development Plan Public Facilities Map" was corrected.

c. Part C.4, "Special Management Area" was corrected to delete the incorrect notation that the Kapaa Quarry site was in the Special Management Area (SMA).

d. Figure 6, "SMA Boundary" was corrected.

e. Part C.5, "Resource Management Plan for Kawainui Marsh" was added.

5. Section VII., "Anticipated Impacts and Mitigative Measures"

a. Part B, "Impact on Hydrological Characteristics" was revised to include:

- (1) a discussion of the site's negligible percentage of runoff as compared to the

runoff of the drainage basin in which the project is located.

- (2) a revision of the notation of existing and projected runoff volume.
 - (3) a description of the on-site and off-site drainage system, washracks for vehicle exterior washdowns, and oil separators to be utilized.
 - (4) a notation that an evaporation/holding pond would not be used.
- b. Figure 7, "Drainage Plan" and Figure 8, "Wash Rack Plan" were added.
 - c. Part E, Impact on Social and Economic Characteristics, was revised to indicate that, should facilities need to be increased in capacity, the transfer station will be designed to accommodate future expansion.
 - d. Figure 9, "Traffic Circulation Plan" was added.
 - e. Part I, "Impact on View Plane" was revised to include a description of the Public Service Area.
 - f. A new figure was added to show the view of the site from Kaiemi and Kihapai Streets.

The Final EIS responded to other substantive comments by letter, but did not reflect these changes in the text. These included:

1. Information that (a) the site cannot be seen from Pahukini Heiau; (b) the landscaping of Monkeypod, Formosan Koa and Swamp Mahogany trees will obscure the structure; and (c) the grading will also shield the structures from Kapaa Quarry Road since the buildings will be on a lower level than the entry road to the site.
2. Statements that (a) the type of future park to be developed on the adjacent landfill has yet to be determined, and (b) the Department of Parks and Recreation (DPR) did not believe that the park was feasible and had recommended that the Park designation be deleted from the Development Plan in the 1987 annual review.

3. A description that vehicular access to the Heiau and the proposed park would be through the same road system proposed for the transfer station.
4. A detailed explanation stating that (a) since the transfer operations will be within an enclosed building, contaminants will not be present in stormwater runoff; (b) in the unlikely event of a spill within the enclosed building, that sand or clay material would be used to absorb the spill, and the contaminants properly disposed of; and (c) although no toxic or hazardous materials will be accepted at the transfer station, the facility will be designed to contain accidental spills of hazardous wastes.
5. A statement indicating that although the last testing of Kawainui Marsh waters done by the University of Hawaii Water Resource Research Center was completed in 1983, a program is in place to continually test marsh waters. Since 1982, the City has continued testing on a monthly basis with the results sent to the State Department of Health.

The EIS fulfills the content requirements for a Final EIS in accordance with Chapter 200 of Title 11, Environmental Impact Statement Rules, Sub-Chapter 7, at Section 11-200-18. An Unresolved Issue is noted in Section E.

D. RESPONSES TO COMMENTS

The DPW made point-by-point responses to all significant environmental points raised before the deadline. These are reproduced in Section 12 of the Final EIS. The EIS therefore fulfills the public review requirements in accordance with Chapter 200 of Title 11, Environmental Impact Statement Rules, Sub-Chapter 7, at Section 11-200-22.

E. UNRESOLVED ISSUES

There were no Unresolved Issues cited in Section 10 of the EIS.

The DLU notes Visual Impacts as an unresolved issue that, although discussed in greater detail in the Final EIS, still requires further analysis of the visual impacts of the proposed buildings and further discussion of mitigative measures. A Visual Impact Analysis and a landscaping plan will be required with the Special Management Area Use Permit application.

87/EIS-11(BWM)

F. DETERMINATION

The Final EIS is determined to be ACCEPTABLE under the procedure established in Chapter 343, HRS.

APPROVED John P. Whalen
JOHN P. WHALEN
Director of Land Utilization

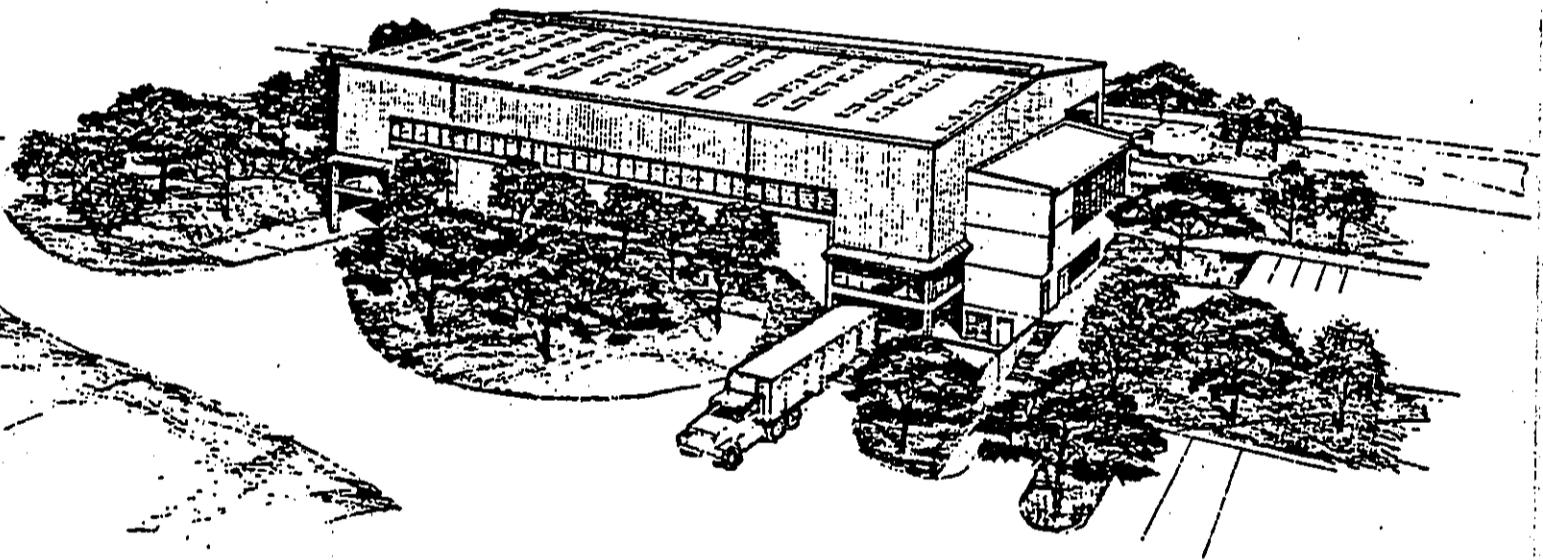
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KAPAA REFUSE TRANSFER STATION

Kailua Oahu Hawaii

Department of Public Works
City and County of Honolulu
Division of Refuse Collection and Disposal



Final Environmental Impact Statement
April 1988

DEPARTMENT OF PUBLIC WORKS
REFUSE DIVISION
CITY AND COUNTY OF HONOLULU

FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE
KAPAA REFUSE TRANSFER STATION

Koolaupoko District, Oahu, Hawaii

This document is prepared pursuant to Chapter 343, HRS

PROPOSING AGENCY: Department of Public Works
Refuse Division
City and County of Honolulu

RESPONSIBLE OFFICIAL:

Sam Callejo
Alfred J. Thiede, Chief Engineer

3-21-88
Date

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- B Air Quality Study for the Proposed Kapaa Refuse Transfer Station
- C Noise Impact Study for the Proposed Kapaa Refuse and Transfer Station Project
- D Environmental Aspects of Potential Surface Water Runoff and Leachate Migration from the Proposed Kapaa Refuse Processing and Transfer Station, Windward Oahu, Hawaii

I. SUMMARY

CHAPTER 343, HRS
FINAL ENVIRONMENTAL IMPACT STATEMENT

Action: Agency
Department of Public Works
Refuse Division
City and County of Honolulu

Project Name: Kapaa Refuse Transfer Station

Project Description: The proposed project will involve the construction of a refuse transfer station for improved solid waste management. Transfer operations will be handled within an enclosed concrete and metal frame structure of approximately 33,000 square feet which will also provide related services including administration, locker and lunchrooms, maintenance and storage areas. The structure will be designed to be aesthetically compatible with the existing area.

Project Location: The proposed project is located at the base of the Kapaa Sanitary Landfill on a site formerly mined as a rock quarry by HC&D. It is situated mauka of Kawainui Marsh and adjacent to the Kapaa Quarry Road in the Koolaupoko District, Oahu, Hawaii.

Proposed Action: Commitment of City funds for the design and construction of Kapaa Refuse Transfer Station. The estimated construction cost for the project

is \$6,500,000. It is estimated that the project will require 12 months to complete in one phase.

Determination: EIS Required

Tax Map Key: 4-2-15:5

Development Plan Designation: Public Facility, Solid Waste Management

Zoning: R-5

State Land Use

District: Urban

Existing Use: The site is part of the Kapaa Quarry Maintenance Yard Master Plan which was formerly part of the HC&D rock quarry. The site is currently unused.

Accepting Authority: Department of Land Utilization
City and County of Honolulu
650 S. King Street
Honolulu, Hawaii 96813

Prepared By: Environmental Communications, Inc.
P.O. Box 536
Honolulu, Hawaii 96809

Summary: The proposed project will involve the construction of a refuse transfer station for improved solid waste management. Transfer operations will be handled within an enclosed concrete and metal frame structure of approximately 33,000 square feet which will also provide related

services including administration, locker and lunchrooms, maintenance and storage areas. The structure will be designed to be aesthetically compatible with the existing area. The site is part of the Master Planned Kapaa Maintenance Yard.

Significant environmental impacts are not expected from the proposed project. Vehicular traffic, air, and noise in the area should be improved with the implementation of the transfer station and decreased usage of the Kapaa/Kalaheo Sanitary Landfill. Drainage and leachate impacts are expected to be minimal as supported by various technical studies conducted in the area. Flora, fauna, and archaeological impacts are also expected to be minimal. The site is generally in conformance with existing land use regulation, however, the project will require a Special Management Area permit.

No major mitigation measures are expected to be necessary for the operation of the transfer station. Standard measures will be implemented to mitigate construction related impacts.

Alternatives considered for the proposed project, other than minor structural and operational changes, include a no-action alternative and a Keehi Refuse Transfer Station alternative. The no-action alternative was rejected because it would not meet the present and future needs for a safe, efficient public services facility. The Keehi Refuse Transfer Station alternative was rejected because it would require extensive trans-Koolau crossings by collection vehicles which would adversely impact traffic.

II. PURPOSE

This Environmental Impact Statement is prepared pursuant to Chapter 343, Hawaii Revised Statutes, since the proposed action will involve the commitment of City Funds for the design and construction of the Kapaa Refuse Transfer Station.

III. PROJECT DESCRIPTION AND STATEMENT OF OBJECTIVES

A. Introduction

Currently on Oahu over 730,000 tons of solid waste are disposed of in City (Waipahu Incinerator and the Kapaa/Kalaheo and Waianae Sanitary Landfills), private (Palailai Sanitary Landfill), and military (Kaneohe MCAS Landfill) facilities. Over 80% of the refuse is disposed of in landfills.

For years, disposal in sanitary landfills was used because it was cost-effective and environmentally acceptable. However, with increased urbanization and an increase in the amount of solid waste generated, landfills are fast approaching their capacity, and new sites are becoming more difficult to acquire. On Oahu, the problem of solid waste disposal is more critical than in many other American communities because of the scarcity of usable land. In addition to the small amount of land that is actually available, a major limitation is the restriction of landfills from areas located over potential supplies of municipal water, which rules out most of the accessible land on Oahu. To further compound the problem, the federal government prohibits landfilling in wetland areas, and potential sites in remaining areas are limited because most are either too close to residential communities, or owned by the State or Federal governments and used for other purposes.

To preserve the limited landfill life, the City and County of Honolulu pursued a solid waste disposal program which would reduce the volume of refuse going into the landfills. On July 1985, the City entered into a contract with Honolulu Resource Recovery Venture to design, construct, and operate for 20 years the City's resource recovery facility, H-POWER. H-POWER will be located in Campbell Industrial Park and is expected to be completed in the later part of 1990. To minimize landfill usage, the City plan to

incinerate all of the combustible refuse at H-POWER or the Waipahu Incinerator which will include the refuse generated on the windward side of Oahu. To increase cost-effective transporting of refuse to H-POWER, the City proposes to construct the Kapaa Refuse Transfer Station.

B. Project Location

The proposed project is located at the base of the Kapaa Sanitary Landfill on a site formerly mined as a rock quarry by HC&D (Figure 1, 2). It is situated mauka of Kawainui Marsh, and adjacent to the Kapaa Quarry Road which connects to Kalaniana'ole Highway on the south terminus and to Mokapu Saddle Road on the north terminus. The site is part of a large 76-acre parcel owned by the City and County of Honolulu. The entire property has been extensively altered by the former quarrying operation and the present landfill activity. Ground elevation within the existing Maintenance Yard Facility varies from about 25 to 30 feet, with the elevation dropping to about 10 feet along Kapaa Quarry Road and rising to 50 feet along the service road leading to the landfill disposal area. The Kapaa Landfill has been designated for future park use on the Public Facilities Development Plan and will be in view of the proposed transfer station. The area immediately above the proposed transfer station would be too steep for active park activities and would serve as a buffer zone to the more usable area on top of the landfill. Because of the topography of the finish grade of the landfill; the transfer station would not be visible unless standing at the edge of the top of the landfill. The proposed transfer station is included in the Maintenance Yard Facility Environmental Assessment which resulted in a Negative Declaration completed in April 1985 as a planned expansion within the Maintenance Yard Facility.

C. Project Description

The proposed refuse transfer station will consist of the construction

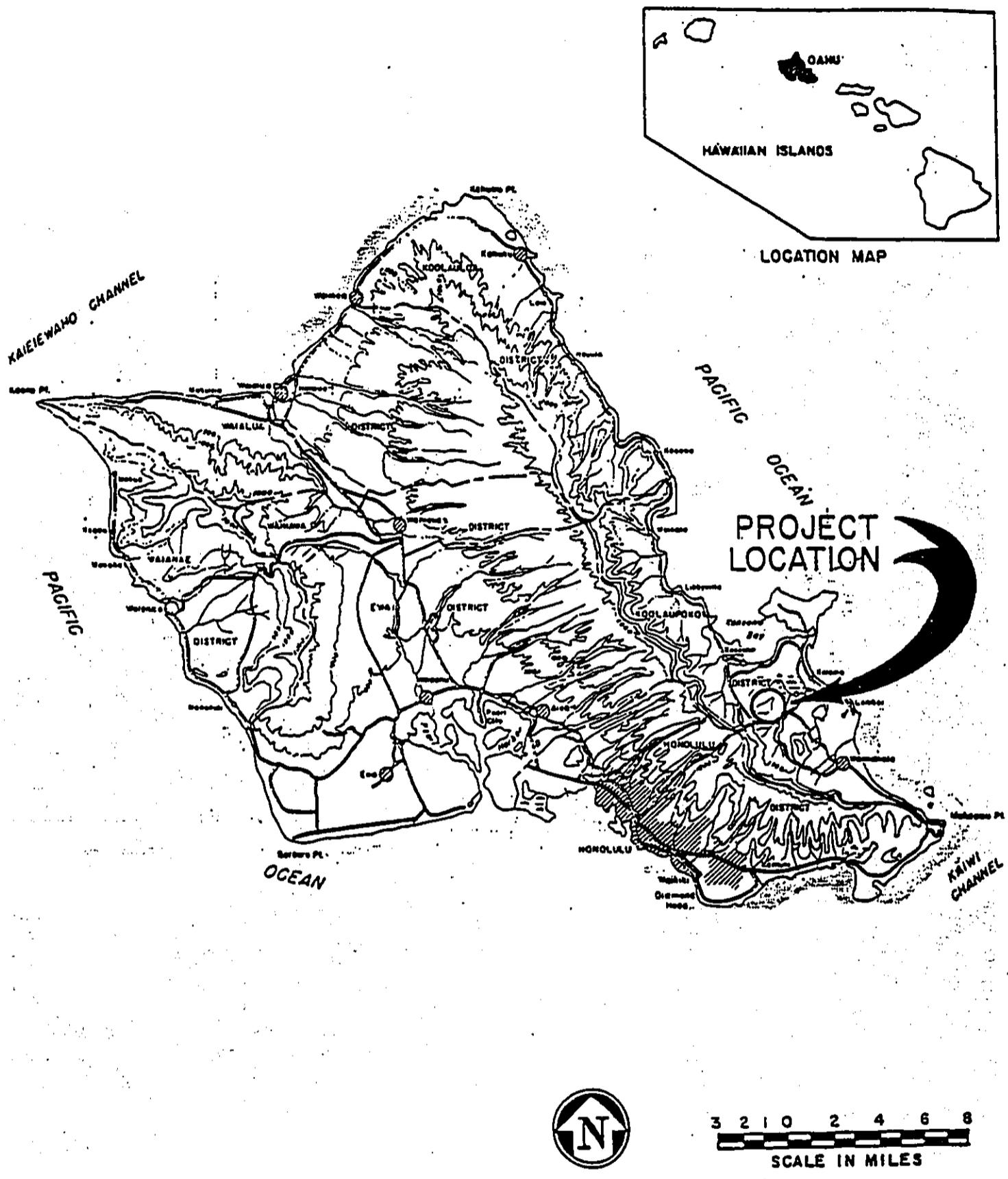


Figure 1
Project Location Map

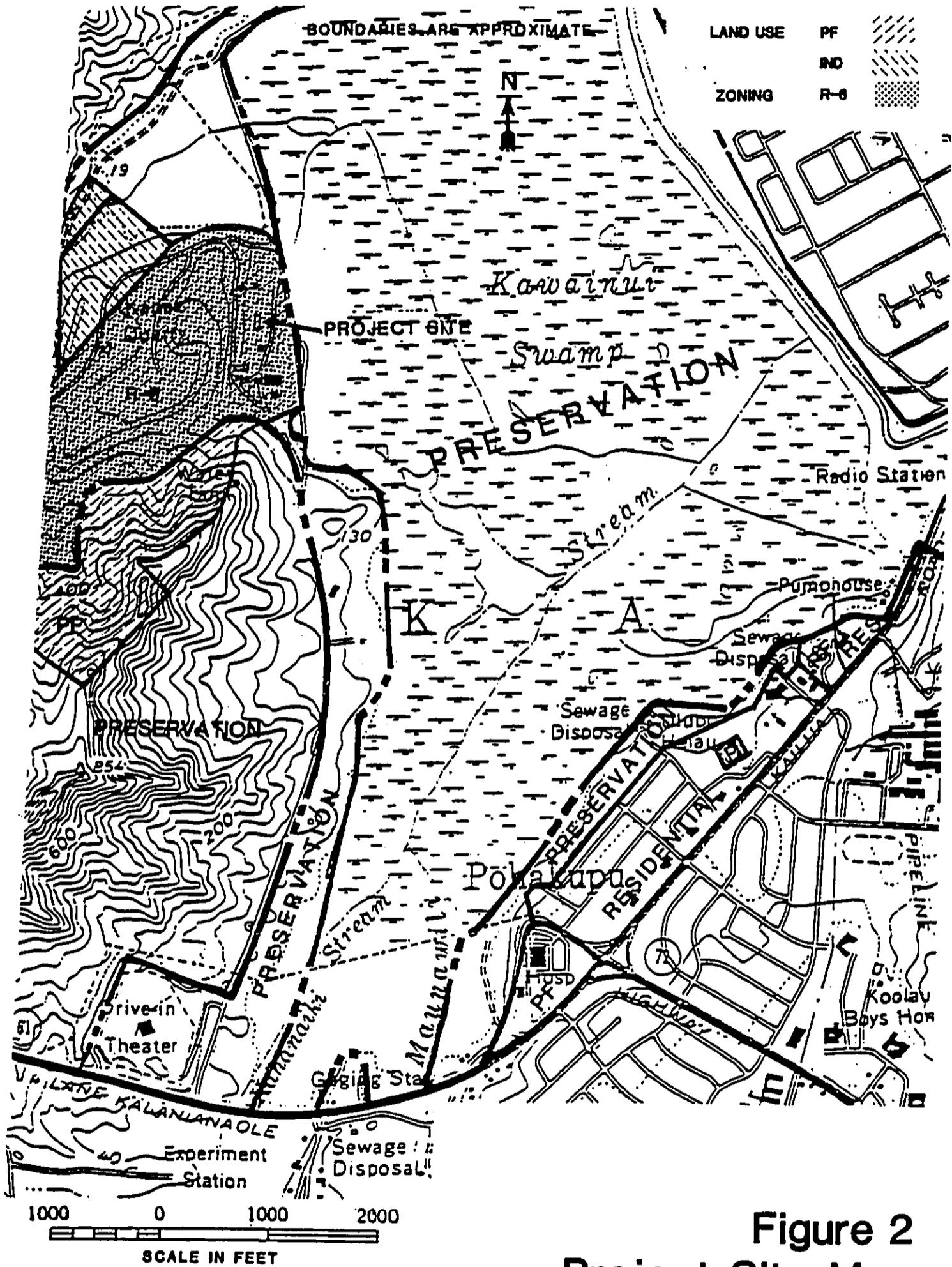


Figure 2
Project Site Map

of a single freestanding structure which will house the refuse transfer operations (Figure 3). The transfer station will be one of three major structures in the Maintenance Yard Facility. The other two are the new Automotive Equipment Service building presently under construction and the existing Refuse Collection building. Based on preliminary design, the structure will be approximately 200 feet long, 165 feet wide and 45 feet high. The transfer process will also include a weighing station. All operations will be conducted in the enclosed structure. The structure will consist of a concrete pad supporting the concrete and metal frame building which will also contain administrative, locker and lunch, maintenance and storage areas. The structure will be designed to be aesthetically compatible with the existing area. The entire operation will be conducted in a similar manner as Keehi Refuse Transfer Station.

External parking areas will serve employee and official vehicle parking, while trailer parking will be provided near the quarry road.

The basis for the proposed design consists of: A 200-foot x 165-foot building; eight dump spots; two loadout slots; with built-in public service area on the west face of the building. However, due to budget constraints the public service area may be deleted and the building dimension changed to 250-foot x 150-foot to accommodate more dump spots.

1. Base Condition at 500 Tons per day (TPD)
 - a. Eight dump spots serving municipal and privately-operated collection vehicles (packers or bins) can accommodate $8 \times 6 = 48$ vehicles per hour, based on a conservative turnaround time allowance of 10 minutes per vehicle. This number of dump spots can accommodate the expected peak vehicle arrival of about 35 vehicles per hour.

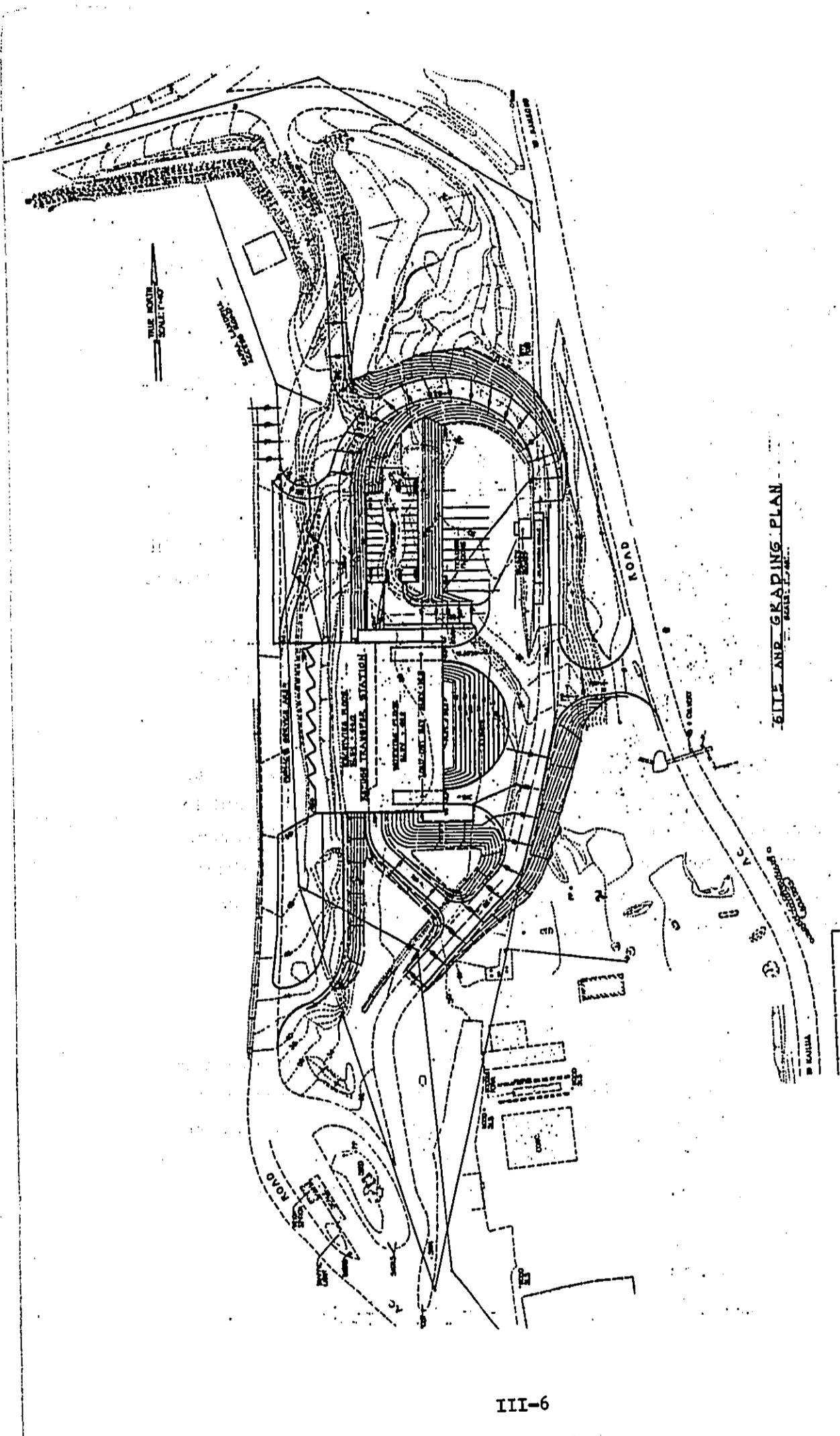


Figure 3
Site Plan

b. Projected average daily collection vehicle traffic at 500 TPD is 89 trucks (42 Refuse Division, plus 47 private haulers). The eight dump spots provide sufficient capacity to readily accommodate the average traffic, as well as a peak traffic condition of 14 vehicles per day (calculated at 1.5 times average traffic). Nominal vehicular capacity, assuming levelized arrival at the hourly service rate of 48 collection vehicles per hour, is 384 vehicles per eight-hour day.

c. The built-in public service area will accommodate approximately 60 vehicles per hour based on seven bins, two vehicles per bin, and a turnaround time allowance of 14 minutes per vehicle. Nominal public service area vehicular capacity, assuming levelized arrival at the hourly service rate, is 480 vehicles per eight-hour day. Projected general public traffic at 327 vehicles per day is within this capacity.

2. Expansion Condition at 750 TPD:

a. The eight dump spots for collection vehicle unloading continue to provide adequate capacity for peak hourly collection vehicle traffic up to the conservatively calculated service rate of 48 vehicles per hour. With service inside the building limited to collection vehicles, peaking traffic is unlikely to involve waits of longer than 5 to 10 minutes. Larger peaks can also be accommodated by encouraging drivers to achieve turnarounds of less than 10 minutes per vehicle (turnaround times as low as 5 to 6 minutes per vehicle can be achieved). For example, achieving an average turnaround time of 8 minutes per vehicle would allow the eight dump spots to accommodate 60 vehicles per hour during peak periods, which is well in excess of expected peak traffic volumes.

- b. Projected average daily collection vehicle traffic at 750 TPD is 134 trucks (63 Refuse Division, plus 71 private haulers). This average traffic condition and a peak day traffic condition of 201 trucks (calculated as 1.5 times the average) remain well within the rated daily capacity of 384 vehicles per 8-hour day. Spare capacity during slack periods can be used, if desired, to accommodate selected private vehicles (probably those with larger loads, such as pickups or other small trucks).

- c. The calculated public service area capacity of 480 vehicles per 8-hour day is virtually equivalent to the projected general public traffic of 490 vehicles per day. Staff supplementation in this area during busy periods, selective use of spare transfer station capacity, extension of service hours, or other operational accommodations may be required during peak usage hours.

D. Facility Operations

It is anticipated that the hours of operation at the facility will be the same as the landfill; 7 AM, to 4 PM, seven days a week.

Vehicles will check in at the scale house which will be a separate structure below the transfer station. After weigh-in, vehicles will be directed to go either to the transfer station or to the landfill depending on the type of refuse. Vehicles with mostly noncombustible refuse will be directed to the landfill.

Vehicles entering the transfer station will be segregated with the drivers of smaller vehicles going to an upper level to deposit their refuse into bins. Future use of this area may be for a drop off point for recyclable items. City refuse vehicles, commercial hauler vehicles and other large vehicles will drive onto the receiving area where they will unload into the dumping pit 15 feet below the receiving area.

Unlike the Keehi Refuse Transfer Station, the Kapaa Refuse Transfer Station will utilize open-top trailers. These will be similar to the ones utilized at Kawaihoa Refuse Transfer Station. One open-top transfer trailer will be stationed on each end of the facility. Front-end loaders will be used to push the refuse from the dumping pit directly into the trailers. A knuckleboom loader will be used to level the load. Once full, the load will be hauled to H-POWER at Campbell Industrial Park and an empty trailer will be brought in to be loaded.

Several different unloading systems are used with the open-top trailer, including the live-bottom or "walking" floor, chain drag, hydraulic ram, and stationary tipper located at the unloading point. Three 103.5 c.y. capacity open-top trailers equipped with chain drag unloaders are presently being used at the Kawaihoa Refuse Transfer Station.

It is projected the station will require 26 employees which includes supervisors, heavy truck drivers, equipment operators, laborers, and scale attendants.

IV. ALTERNATIVES CONSIDERED

A. No-Action

This alternative does not meet the present and future needs for a safe, efficient work place to provide the designated public services. The transfer station will extend landfill life. With the limited landfill sites available, alternative actions are necessary for future refuse disposal. Therefore, "no-action" is not considered a viable alternative.

B. Keehi Refuse Transfer Station

Another alternative is the utilization of the Keehi Refuse Transfer Station. This alternative would require extensive trans-Koolau crossings by collection vehicles which would adversely impact traffic. When the H-Power facility opens, commercial refuse haulers from Honolulu presently using Kapaa/Kalaheo Sanitary Landfill are expected to use the Keehi Refuse Transfer Station. Additional loads from windward Oahu would tax the existing Keehi facility.

C. Proposed Project Alternative

This alternative provides the most efficient and economical way of maintaining services to the public by the Division of Refuse Collection and Disposal presently located at the Kapaa facility. The proposed improvements provide for safer and more efficient facilities and will mitigate potential adverse impacts which might occur at alternative sites outside of the existing sanitary landfill compound. The proposed alternative does not represent the final, working drawing design. The project may be modified and scaled down to accommodate future budget constraints.

V. AFFECTED ENVIRONMENT

A. Geographical Characteristics

1. Topography

The entire project area has been extensively altered by the former quarrying operation and the present landfill activity. Ground elevation within the existing Maintenance Yard Facility varies from 25 to 30 feet, with the elevation dropping to about 10 feet along Kapaa Quarry Road and rising to 50 feet along the service road leading to the landfill disposal area.

2. Geology/Soils

The Maintenance Yard lies within the caldera of the Koolau volcano, which was about eight miles long and four miles wide extending from near Waimanalo to beyond Kaneohe. Within the caldera, the rocks have been much affected by rising volcanic gases and hot water. The original pyroxene of the rocks has commonly been changed to chlorite and clay minerals, giving the rock a greenish to greenish gray hue. Silica released during the alteration has been redeposited as one or another of the silica minerals (opal, chalcedony and quartz), in the form of amygdules filling former vesicles or as irregular masses and veinlets filling other openings in the lavas. The mass is centered approximately beneath Kawainui Marsh. Within the Koolau caldera is the castle vent, an eroded cinder cone from which a dense lava flow more than 100 feet thick has been largely quarried away. The old Kapaa Quarry site is in this lava flow.

Although the Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, indicates the site as a

quarry, some adjacent soils classified as Alaeloa silty clay may be found on the project site.

3. Climate

The climate is moderated with predominant northeasterly tradewinds with a mean speed of 10 knots. Average temperature ranges from 73 to 79 degrees F. The average annual rainfall at KMCAS is 44 inches, with slightly higher rainfall of approximately 50 inches at the site. An average of five winter storms affect this area each year. The maximum recorded 24-hour rainfall has been less than 12 inches. The U.S. Weather Service 100-year storm for the Kapaa area is 15 inches in 24 hours.

B. Hydrological Characteristics

1. Hydrology

The site is part of Kapaa Valley which drains into Kawainui Marsh. The marsh provides 3,000 acre feet of flood storage as part of the Oneawa Channel (Kawainui Channel) design which conveys the runoff to Kailua Bay. Two perennial streams enter Kawainui Marsh from Maunawili Valley, with average total discharge of about 7 mgd. Kapaa Valley is drained by the intermittent Kapaa Stream. Its flow consists of storm runoff. Sizeable continuous aquifers do not occur in the area; in general, the groundwater saturates flow basalts compartmentalized by dikes and other intrusives. The surface of Kawainui Marsh represents the general groundwater table in the region.

2. Drainage

Storm runoff from the site sheet flows toward Kapaa Quarry Road and drains into the marsh through two existing 36-inch culverts. An existing pipe and ditch intercepts runoff from the landfill areas mauka of the Maintenance Yard and alleviates previous flooding problems at the site.

3. Flood Plain Management

The site is located in Zones C and D of the Flood Insurance Rate Map of Oahu. Zone C is designated as an area of minimal flooding while Zone D is comprised of areas of undetermined flooding.

C. Biological Characteristics

1. Flora

The project site is practically devoid of flora, with the exception of three monkey pod trees, a few coconut trees, two avocado trees, one plumeria tree, and one brassia tree fringing the Maintenance Yard and caretaker's cottage at the eastern property line. The natural vegetation consists of bermuda grass and guava.

An earlier survey of the flora did not locate any endangered species of flora, however, the following species were identified near Kapaa Quarry Road to the ridgeline.

Common Name

Scientific Name

Guinea grass	<u>Panicum maximum</u>
California grass	<u>Brachiaria mutica</u>
Napier grass	<u>Pennisetum purpureum</u>
Blue-Morning Glory	<u>Ipomoea congesta</u>
Slender mimosa	<u>Desmanthus virgatus</u>
Maile pilau	<u>Paederia foetida</u>
Vervain	<u>Stachytarpheta sp.</u>
Lilikoi	<u>Passiflora sp.</u>
Guava	<u>Psidium guajava</u>
Pili	<u>Heteropogon contortus</u>
Japanese tea	<u>Cassia leschenaultiana</u>
Broomsedge	<u>Andropogon virginicus</u>
'Ulei	<u>Osteomeles anthyllidifolia</u>
'Akoko	<u>Euphorbia celastroides</u> <u>var. amplexans</u>
Hi'aloa	<u>Waltheria americana</u>
Spanish clover	<u>Desmodium uncinatum</u>
Flora paintbrush	<u>Emilia sonchifolia</u>
Buffelgrass	<u>Cenchrus ciliaris</u>

2. Fauna

Birds and mammals sighted or observed around and within the project site include:

Birds:

<u>Common Name</u>	<u>Scientific Name</u>
Cardinal	<u>Cardinalis cardinalis</u>
Cattle egret	<u>Bubulcus ibis</u>
Barred dove	<u>Geopelia striata</u>
Mynah	<u>Acridothera tristis</u>
Lace-necked dove	<u>Streptopelia chinensis</u>
Sparrow	<u>Passer domesticus</u>
Japanese white-eye	<u>Zosterops japonica</u>
Shama thrush	<u>Copsychus malalaricus</u>

Mammals:

<u>Common Name</u>	<u>Scientific Name</u>
Mongoose	<u>Herpestes auropunctatus</u>
Mice	<u>Mus musculus</u>
Rat	<u>Rattus rattus</u>
	<u>R. norvegicus</u>
	<u>R. exulans</u>

The adjoining Kawainui Marsh is a habitat for birds and other wildlife. When it was an open lake, a large number of endemic birds made their habitat there. Up to World War II, Kawainui was a valuable breeding ground for the Hawaiian Ducks. For a while it was rarely seen until the State reintroduced a colony of ducks into the open water areas near Quarry Road. With the reduction of the size of the lake due to sediment loading from drainage areas flowing into the marsh, endemic and migratory birds are rarely seen because of their reduced number. Plans to re-establish the existing waterbird habitat by removing excess vegetation are being recommended by the State. The following birds have been sighted by various investigators in and around the marsh.

Common Name

Scientific Name

Cardinal	<u>Cardinalis cardinalis</u>
Pintail	<u>Anas acuta</u>
Mynah	<u>Acridotheres tristis</u>
Pacific Golden Plover	<u>Pluvialis dominica fulva</u>
Japanese White-eye	<u>Zosterops japonicus</u>
Black-crowned Night Heron	<u>Nycticorax nycticorax hoactli</u>
Hawaiian Duck*	<u>Ana wyvillienu</u>
Hawaiian Coot*	<u>Fulica americana alai</u>
Hawaiian Stilt*	<u>Himantopus himantopus knudseni</u>
Hawaiian Gallinule*	<u>Gallinula chloropus sandvicensis</u>
Shoveler	<u>Anas clypeata</u>
Frigate Bird	<u>Fregata minor</u>

*Endangered species

3. Aquatic Fauna

Common Name

Scientific Name

Pelagic milkfish or awa	<u>Chanos chanos</u>
Aholehole	<u>Kuhlia sandvicensis</u>
Mullet	<u>Migul cephalus & Neomyxis chaptalii</u>
Papio	<u>Caranx sp.</u>
Barracuda	<u>Sphyraena sp.</u>
Juvenile nehu	<u>Stolephorus purpureus</u>
O'opu okuhe	<u>Eleotris sandwicensis</u>
Juvenile gobiids	<u>Awaous stamineum and A. genivittatus</u>
Rice eels	<u>Monopterus sp.</u>
Endemic Shrimp	<u>Macrobrachium grandimanus</u>
Hapa crab	<u>Thalamita crenata</u>
Worm	<u>Tendipes sp.</u>

D. Cultural Resources

Several historic sites border Kawainui Marsh. Ulupo Heiau, located off Kailua Road, and Pahukini Heiau, located mauka of the project site, were placed on the National Register of Historic Places in 1972 (Figure 4). In March 1980, Kawainui Marsh was determined to be eligible for listing in the National Register, and the State is planning to propose formal nomination as soon as specific boundaries can be defined. The project site has been extensively altered by previous quarry activity, and nothing of historic significance is known to exist in the immediate area of the Maintenance Yard Facility.

E. Social and Economic Characteristics

1. Population

The 1980 population within the Koolaupoko District served by the Kapaa Maintenance Yard was 81,186. Between 1970 and 1980, the population increased by an average annual rate of 11.5%. The total household count for 1980 was 22,727.

Population projections for future growth of Oahu through the year 2005 were taken from the City and County "General Plan Objective and Policies," dated December 8, 1982, State DBED 1984 Series "M-F" Population Projections. This series projected a population of 954,500 for Oahu in Year 2005. The rural district of Koolaupoko, which includes Kailua and Kaneohe, is projected to have a population increase of 12.4% to 13.6% or 118,358 to 124,225 over the next 17 years.

2. Employment

The urban fringe areas of Kailua and Kaneohe are classified primarily as "bedroom" communities. The bulk of the population commutes to employment centers on the leeward side of the island. Of the total work force over age 16 on the

island of Oahu, only 5.6% (20,705) work within the Koolaupoko district, while 14.3% of the total population resides in the district. The largest employer in this area is the Kaneohe Marine Corps Air Station.

F. Existing Traffic

A traffic impact assessment for the proposed Kapaa Refuse Transfer Station conducted by Austin, Tsutsumi & Associates, Inc. (Appendix A) stated that access to the existing facility at Kapaa is primarily from Kapaa Quarry Access Road which runs from Kalaniana'ole Highway, near Kailua Drive-In, to Mokapu Saddle Road, near Kalaheo High School. All refuse vehicles must check in at the weigh station at Kapaa before proceeding either to the Kapaa or Kalaheo sites.

A potential hazard exists at a skewed intersection between the Quarry Access Road leading to Mokapu Saddle Road, and the access road leading to Ameron HC&D Kapaa Quarry. Vehicles from Mokapu Saddle Road, bound for the weigh station at Kapaa, conflict with vehicles from Kalaniana'ole Highway, bound for Kapaa Quarry.

The peak hours of traffic on the Kapaa Quarry Access Road occur between 6:15 AM and 7:15 AM and between 3:00 PM and 4:00 PM; with traffic volumes of 652 vehicles per hour (vph) and 416 vph, total for both directions. The 24-hour traffic volume on the Kapaa Quarry Access Road totals 5,843 vehicles for both directions.

The vehicular traffic mix consists of private vehicles, using Kapaa Quarry Access Road as a cutoff between Mokapu Saddle Road and Kalaniana'ole Highway, as well as employee and truck traffic bound for the landfill or the quarry.

The length of the Quarry Access Road between the Kapaa Site and Mokapu Saddle Road is subject to flooding. The roadway becomes inaccessible and is prone to deterioration from heavy truck traffic.

G. Ambient Air Quality

The "Air Quality Study for the Proposed Kapaa Refuse Transfer Station" (Appendix B) conducted by Barry D. Root has indicated that there are no available long-term air pollutant measurements for the project site or its immediate vicinity. Particulates have been measured for several years in Waimanalo, on the windward coast of Oahu, but this station was selected primarily to sample background concentrations upwind of Oahu and readings are consequently quite low. Particulate levels at Waimanalo typically range from 20 to 40 with an average of 30 micrograms per cubic meter, a level well below all existing air quality limits. Particulate levels in the vicinity of the present Kapaa Landfill can, at times, be much higher than background levels; however, because dirt moving activities and heavy vehicles moving over unimproved roadways create a significant amount of fugitive dust.

Carbon monoxide levels at the intersection of Kapaa Quarry Road and Kalaniana'ole Highway are presently estimated under worst case atmospheric dispersion conditions, to be above State of Hawaii one and eight hour limits, and Federal eight hour limits.

Present concentrations of other regulated pollutants within the project area are probably quite low. Refuse collection trucks used on the windward side of Oahu are primarily diesel-powered. Diesel emissions contain significant amounts of nitrogen dioxide, but the percentage of refuse trucks within the daily traffic volume at the primary intersection of concern is small and nitrogen dioxide emissions from gasoline-powered vehicles are very low. On the

other hand, carbon monoxide emissions from diesel trucks consequently make a small contribution to vehicle-related carbon monoxide levels.

In summary, existing levels of particulates within the project site, and carbon monoxide levels near the primary intersection serving the project site are estimated to be quite high, but levels of other regulated pollutants are most likely well within allowable limits.

H. Existing Noise Environment

Background ambient noise measurements were obtained in the environs of the project site, as well as at the Keehi Refuse Transfer Station by Y. Ebisu & Associates and documented in "Noise Impact Study for the Proposed Kapaa Refuse and Transfer Station Project" (Appendix C). Background ambient noise levels in the project area were obtained during the quiet time of the day (6:00 PM to 7:00 PM), with resulting average noise levels of 47 to 52 dBA. Minimum background ambient noise levels ranged from 39 to 40 dBA, which are considered to be very quiet. From these measurements, background ambient noise levels in the residential areas to the east of the project site are estimated to be in the range of 45 to 55 Ldn (Day-Night Average Sound Level.)

VI. RELATIONSHIP TO PLANS, POLICIES, AND CONTROLS

A. Federal

No Federal plans or programs directly affect the proposed project site, therefore, no special Federal permits will be required.

B. State

1. Hawaii State Plan

The Hawaii State Plan consists of a series of broad goals, objectives, and policies which act as guidelines for the growth and development of the State. In general, the proposed project is consistent with the overall intent of the State Plan. The overall theme of the Hawaii State Plan is:

- Individual and family self-sufficiency
- Social and economic mobility
- Community or social well-being

Specifically, the Hawaii State Plan details objectives and policies in the various areas such as population, the economy, physical environment, facility systems, socio-cultural advancement and fiscal management. The Kapaa Refuse Transfer Station project is generally consistent with the goals and policies of the Hawaii State Plan and has been designed to facilitate its objectives.

2. State Functional Plan

The Hawaii State Functional Plan has been prepared for use as the primary planning tool in directing the planning process for Hawaii's long and short-term goals. By setting the overall

theme and directive, functional plans were created as extensions, policies, and implementing actions to address these concerns. These plans were reviewed to determine their relationship to the proposed project and are generally considered consistent and mutually in conformance with the objectives and policies of the functional plans.

3. State Land Use

The proposed transfer station will be located within the existing Urban State Land Use District boundaries in Kapaa.

4. H.R.S. Chapter 205-A Coastal Zone Management

This project will not require a State CZM federal consistency determination, since no federal funds or federal permits are involved.

C. City

1. City and County of Honolulu General Plan

The General Plan sets forth the long-range social, economic, environmental, and design objectives for enhancing the general welfare and prosperity of Oahu residents. The proposed project is generally considered to be in conformance with the objectives of the General Plan and is particularly applicable to Transportation and Utilities Objective B, Policy 5.

Objective B states "To meet the needs of the people of Oahu for an adequate supply of water and for environmentally sound systems of waste disposal." Policy 5 states "Provide safe, efficient, and environmentally sensitive waste-collection and waste disposal services."

2. Development Plan

The proposed project is in conformance with the Development Plan Map which designates the site as a Public Facility. The project is, in general, consistent with the relevant portions of Development Plan Common Provisions, Sections 1 through 14. More specifically, the site is designated "SW/M," solid waste management on the Development Plan Public Facilities Map (Figure 5).

The Development Plan Public Facilities Map (DPPFM) park designation on the subject parcel is for the expansion of Kawainui Regional Park. The rationale for this designation is that it would continue the string of planned parks around the marsh perimeter to help preserve and protect Kawainui Marsh.

The refuse transfer station designation (SW/M) is also on the DPPFM at this site which is part of the existing City maintenance yard. Council has previously indicated that the site is suitable for both uses. They feel that alternative uses and alternative sites should be indicated on the DPPFM to provide option and greater flexibility in determining the final placement of the various public facilities. Council feels that the final resolution of issues of priority when conflicting policies are involved rests with them.

3. City and County Zoning District

The parcel is currently zoned R-5 residential.

4. Special Management Area

The proposed project is within the Special Management Area (Figure 6) and therefore an SMA permit will be required.

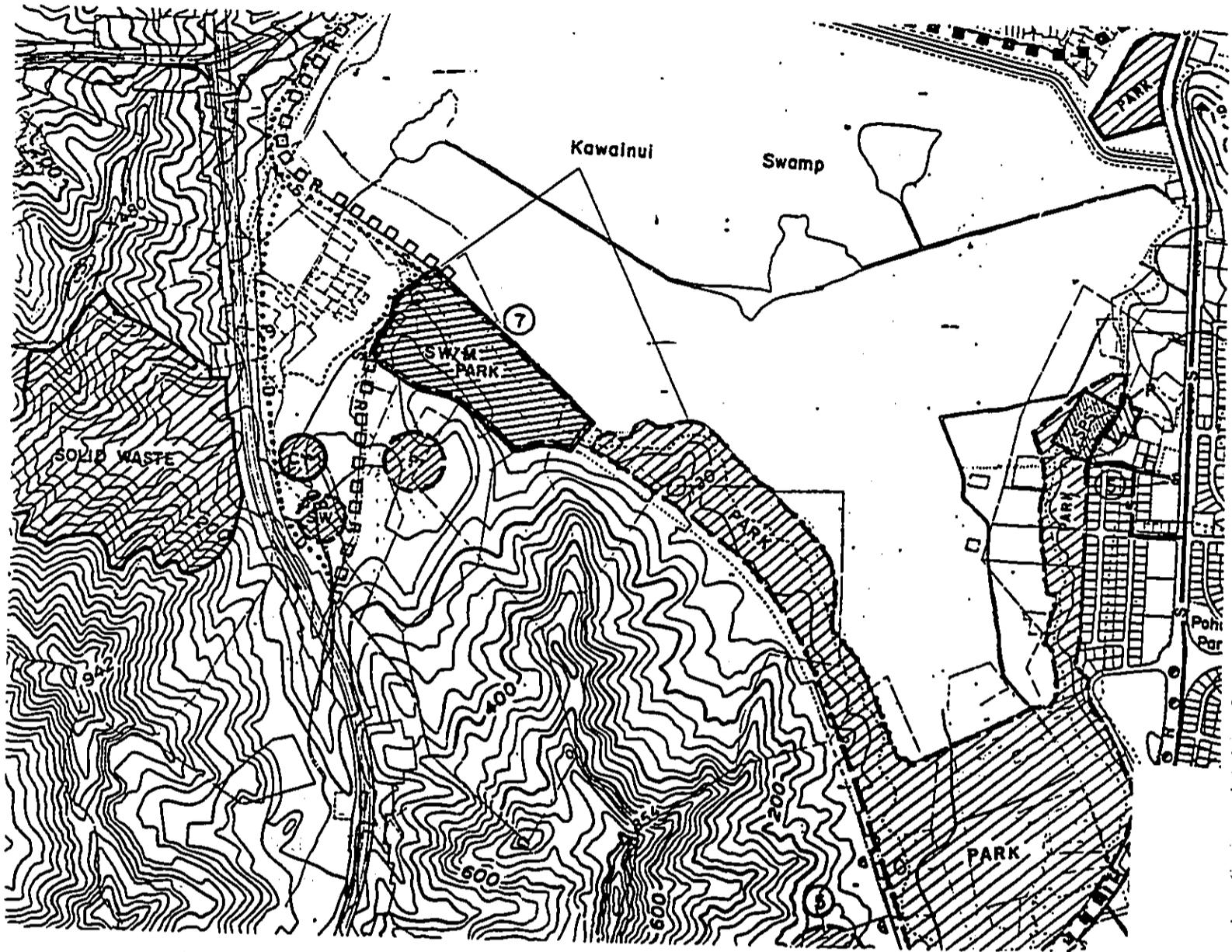


Figure 5
Development Plan
Public Facilities Map

5. Resource Management Plan for Kawainui Marsh

The State of Hawaii Department of Planning and Economic Development (DPED) locates the project site in the Secondary Area of its Kawainui Marsh Resource Management Plan. The Plan cites runoff and marsh water quality as the chief concerns in the Secondary Area.

Recommended actions of the management plan which potentially relate to the proposed project are:

a. Economic:

A-1 Remove the auto dump from the primary area (Kailua Auto Wreckers).

A-2 Relocate existing industrial uses situated on the marsh side of the Quarry Road.

B-B Acquire those lands in the secondary area that will fulfill the other policies and implementing actions of this plan, including an access trail to Pohukini Heiau and lands related to other historic sites.

b. Ecological:

B-1 Develop an ethno botanical garden within the old landfill area occupied in part by the model airplane field.

E-1 Develop criteria for monitoring discharge of sediments in the marsh.

E-2 Discontinue direct discharges of treated sewage effluent into the Marsh and into streams subsequently discharging into the Marsh.

E-3 Develop and maintain a system to monitor the quality and quantity of influent streams and overland flows to the Marsh.

c. Cultural:

B-1 Acquire lands necessary to provide visual corridors and trail linkages between Ulupo and Pohukini Heiaus.

D-2 The existing sanitary landfill site, following closure should be graded and landscaped.

D-2 The auto junkyard should be cleared and the area restored to an appropriate natural area setting.

The proposed improvements to the Kapaa Quarry Maintenance Yard do not conflict with the above recommendations of the State plan.

Additionally, although the plan is very specific in its recommended actions, e.g., remove auto junkyard and relocate existing industrial uses on the marsh side of Kapaa Quarry Road, it does not call for the removal of the existing maintenance yard.

VII. ANTICIPATED IMPACTS AND MITIGATIVE MEASURES

A. Impacts on Geographical Characteristics

No major impacts are expected to result from the development of the proposed project. All earthwork grading will be mitigated to prevent siltation and unnecessary runoff.

B. Impact on Hydrological Characteristics

The proposed transfer station is not expected to have any significant impact on existing water quality. Vehicular washdowns will take place on site but any structural washdown runoff is expected to be minimal. Similar to Keehi Refuse Transfer Station, the dumping pit will not be washed down but will be swept daily.

The net impact of any increase in storm runoff as a result of this project is expected to be negligible. The entire drainage basin covers approximately 7100 acres. In comparison, the project area covers about 7 acres, or approximately 0.1 percent of the entire drainage basin.

Total onsite runoff from the project site will be increased from approximately 24 cfs to 37 cfs. Although there will be more runoff, less silt is expected because of the covered area. Onsite drainage will be discharged through an existing 48" RCP.

A study of surface water runoff and leachate migration conducted by Gordon L. Dugan, Ph.D (Appendix D) states that previous surface water and leachate quality studies have indicated that identifiable water quality problems in Kawainui Marsh due to the implementation of the proposed project are extremely unlikely. For example, accidental spillage of refuse to and from the station (from which leached constituents could be extracted by storm water for potential

transportation by surface and/or subsurface flow to the marsh); or washdown water that may be produced at the station during the washdown of station facilities and trucks.

Surface on-site runoff will be collected by a storm drain system and conveyed to the existing 48" culvert at the Kapaa Quarry Access Road for discharge into the Marsh (Figure 7). Once the Transfer Station is constructed, and the area landscaped and grassed, on-site runoff will be relatively free of silt or debris. There will be no washdown of the refuse transfer facility. Trailer trucks will be washed on the outside only at the washracks provided and the washwater will be directed to an oil separator structure before being discharged into the storm drainage system (Figure 8). The oil separator will keep the oil and other floatable pollutants from being discharged into the storm drainage system.

An evaporation/holding pond will not be employed in that there will be no washing of the refuse transfer facility or the inside of the transfer trailer compartments. The exterior washing of the transfer trucks is no different than what occurs at a commercial car wash or fleet maintenance facility.

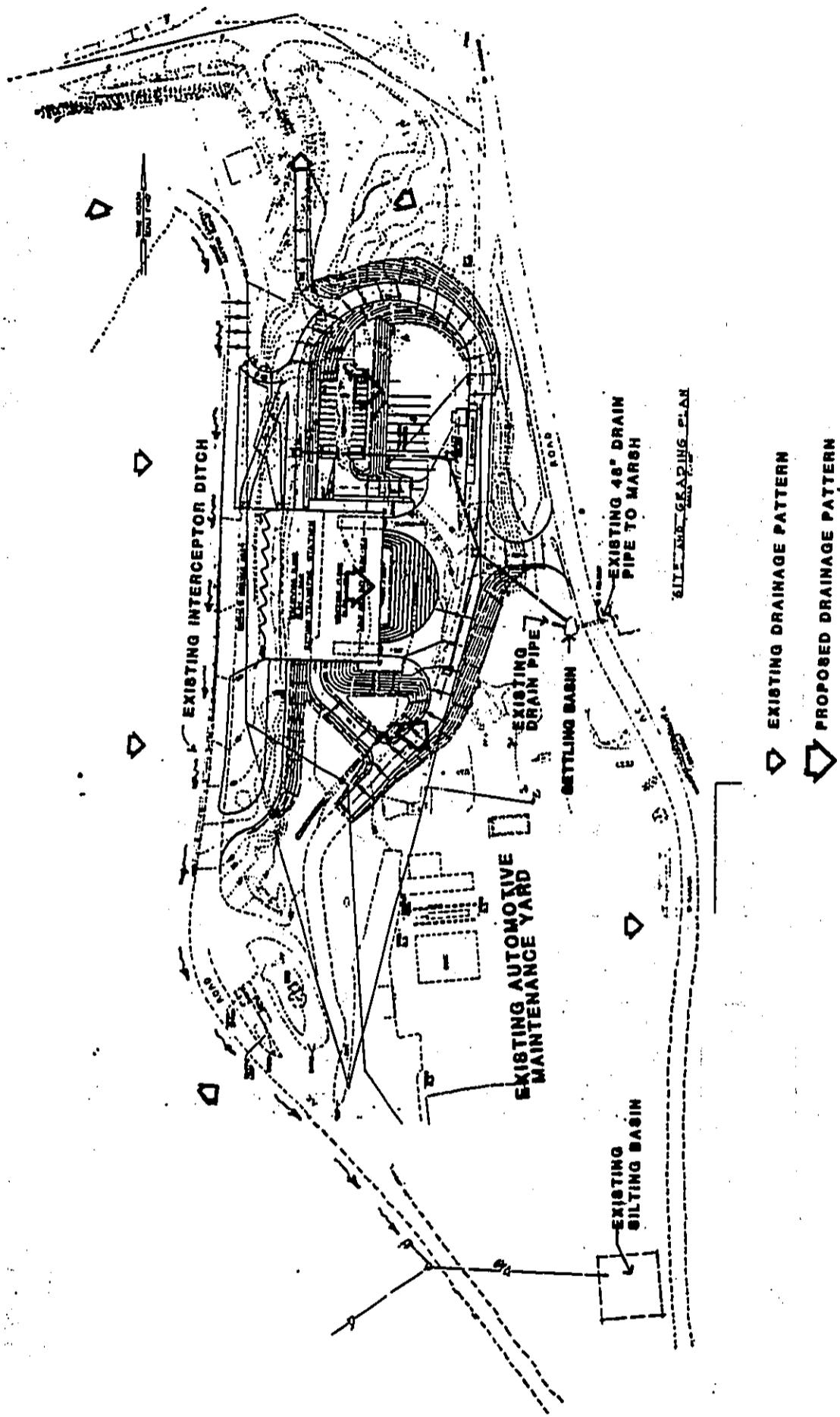
C. Impact on Biological Resources

No impact to existing flora or fauna within the project site is expected. For the most part, the site is clear of vegetation and wildlife. Existing trees fringing the eastern property boundary will be preserved to minimize views of the facility from the Kapaa Quarry Road. The proposed improvements will have no significant impacts on Kawainui Marsh.

D. Impact on Cultural Resources

There are no identified historic sites within the immediate vicinity.

Figure 7 Drainage Plan



The closest historic site, Pahukini Heiau, is located approximately 1,000 feet from the project site and is fenced separately for protection to the Heiau. Nevertheless, if anything of potential historic significance is discovered during construction, the work will be halted and the State Historic Preservation Officer will be consulted.

E. Impact on Social and Economic Characteristics

The proposed action is not expected to have any significant socio-economic impacts. The proposed improvements will improve the social well-being of employees by providing safer, more efficient facilities. Should the facilities need to be increased in capacity, the transfer station will be designed to accommodate future expansion. With the construction of the refuse transfer station, approximately 26 additional jobs will be provided for operation of the facility. The net gain of jobs will be offset by a reduction in force at the landfill site of approximately 10 positions.

F. Impact on Traffic

As stated earlier a traffic impact assessment was conducted by Austin, Tsutsumi & Associates, Inc. (Appendix A). They concluded that when the proposed transfer station becomes operational, it is expected that the refuse load and the resulting traffic will be significantly reduced. The load reduction of 70% by tonnage will be a result of Honolulu's private collectors' refuse being disposed of at the H-POWER Plant. The City refuse load and general public refuse load are expected to remain relatively constant. The resulting average daily traffic is expected to be reduced by one-third. The solid waste loading and traffic generation for the existing condition and the projected conditions for the proposed transfer station are shown in Table 1.

Table 1. DAILY TRAFFIC COMPARISON (Monday - Saturday)

	<u>Average Daily Tonnage</u>	<u>Peak Daily Tonnage</u>	<u>Average Daily Vehicular Traffic</u>	<u>Peak Daily Vehicular Traffic</u>
<u>Kalaheo Landfill</u>				
Refuse Division Collection Trucks	174	211	31	38
Private Collection Trucks	1,027	1,246	221	268
General Public Total	<u>35</u> 1,236	<u>43</u> 1,500	<u>241</u> 493	<u>292</u> 598
<u>Kapaa Transfer Station</u>				
Refuse Division Collection Trucks	174	211	31	42
Private Collection Trucks	160	246	35	47
General Public Subtotal	<u>35</u> 369	<u>43</u> 500	<u>241</u> 307	<u>327</u> 416
Transfer Trailer Trucks Total			<u>18</u> 325	<u>30</u> 446

The number of refuse personnel needed for a full-scale landfill operation is about the same as the number of personnel required for the transfer station operation.

The transfer station traffic would actually be less than the existing landfill traffic. Therefore, the proposed transfer station is expected to have a negligible impact on traffic operations on Kapaa Quarry Access Road (Figure 9).

G. Impact on Air Quality

The proposed activities should not exceed standards set forth in Chapter 11-60 (Section 11-60-5 and 11-60-4). Dust from short

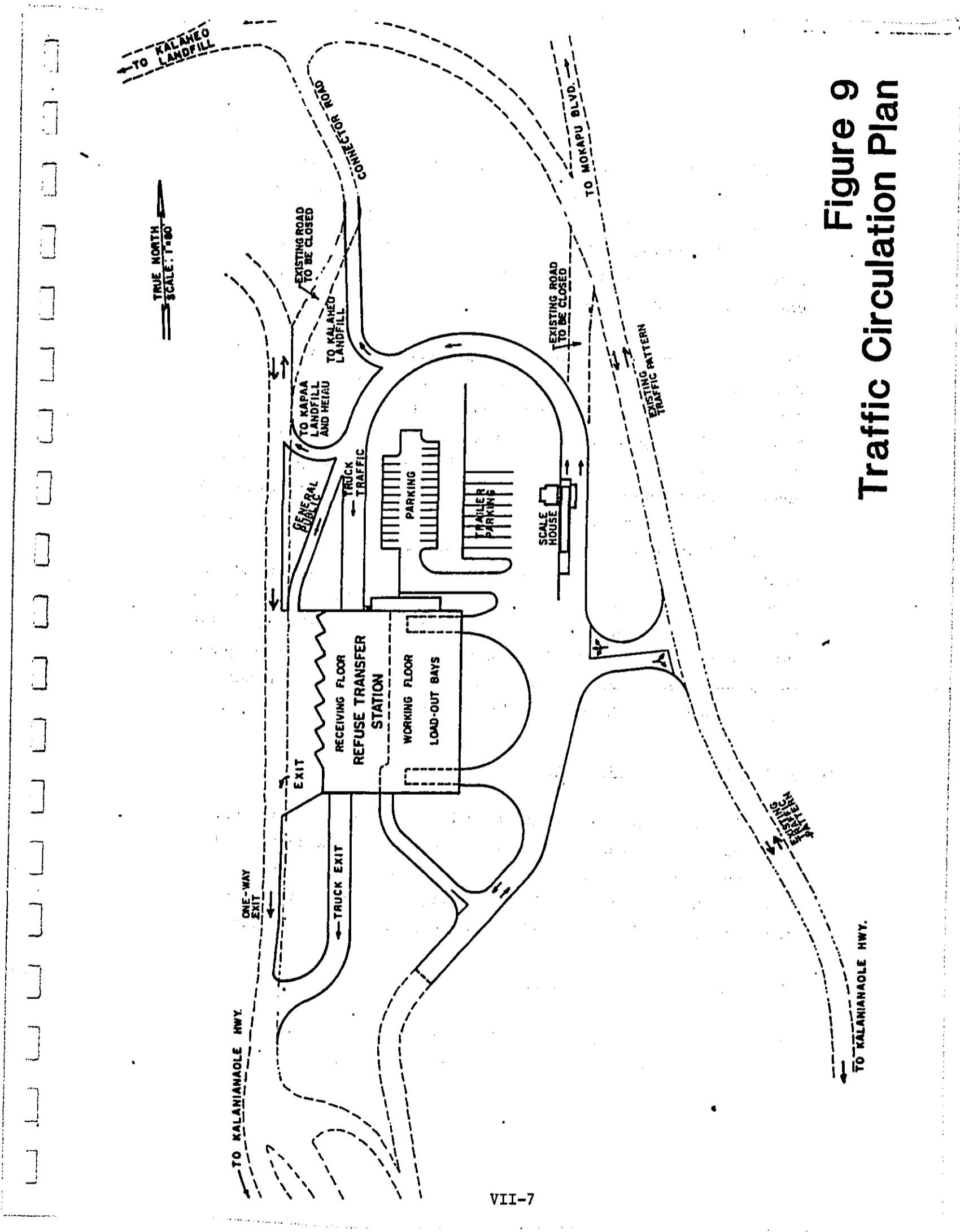


Figure 9
Traffic Circulation Plan

term construction activities will be controlled by sprinkling water. In addition, the prevailing northeast tradewinds will carry airborne particles towards the mauka landfill area. Paving improvements related to the Maintenance Yard, in addition to improvements planned for the Kapaa Refuse Transfer Station, will mitigate present dust generation at the site due to existing barren undeveloped lands and unpaved roadways.

Once construction is completed, the proposed project will not in itself constitute a major direct source of air pollutants. By serving as an attraction for motor vehicle traffic in the area, however, the project could be considered a potential indirect air pollution source, but in the case of this particular project future levels of traffic entering and leaving the project site are expected to be lower than present levels. Because of a significant reduction in the daily volume of private haulers using the transfer station as compared to present landfill operations, daily traffic volume at the site is expected to drop from 493 to 307 trips. This would reduce peak morning rush hour volume by an estimated 24 vehicles. While this decrease is not particularly significant, it is possible to quantify the ameliorative effect it would have on carbon monoxide levels at the intersection of Kalaniana'ole Highway and Kapaa Quarry Road.

H. Impact on Noise Environment

Noise levels will increase slightly during construction activities. Noise level of vehicles anticipated to be added to the permanent fleet will be offset by the departure of the landfill equipment when the Kapaa landfill is closed, although this may not occur simultaneously. Vehicular noise will not exceed standards set forth in Chapter 11-42 and 11-43, Section 11-43-3 of the Department of Health Administrative Rules.

During unloading operations at the proposed Refuse Transfer Station, noise from the refuse vehicles at the tipping stalls and

the front end loader in the refuse pit are expected to emanate from the wall openings of the transfer station. These wall openings include the entry and exit doorways (on the north and south faces of the building) to the tipping stalls, and ventilation openings along the west face of the buildings. Predicted worst case noise levels at 1,000, 2,000, 3,000, and 4,000 FT distances from the open sides of the proposed transfer station are 47, 39, 33, and 29 dBA, respectively. The noisiest (or open) sides of the facility were designed to face toward the north, south and west, and away from the noise sensitive residences toward the east. Because of the optimum orientation of the transfer station, the long distances (approximately 4,000 Ft) to noise sensitive properties across Kawainui marsh the beneficial shielding effects of the mountains to the north, west, and south, and the remote location of the proposed facility, the noise from the proposed facility should not present risks of adverse noise impacts. For this reason, special noise mitigation measures should not be required.

I. Impact on View Plane

The retained architectural consultant has reviewed public concerns expressed regarding the potential visual impacts this project could have on adjacent communities and viewing positions. Their review has resulted in the following design considerations that will be incorporated into the structural planning for the transfer station.

1. The function of the Refuse Transfer Station is to facilitate refuse collection vehicles' ability to unload refuse for transfer into high capacity transfer trailers. These transfer trailers would then move the refuse either to a sanitary landfill, or to the H-POWER plant at Campbell Industrial Park.

The station will also provide a "Public Service Area" to be used by homeowners. Homeowners will go to this area to unload refuse into bins. Separate bins may also be set aside for recyclable items.

The design of the project will require a long, low building profile, maintaining as much as possible, the restraints inherent in this facility, i.e., refuse unloading at a high level, and transfer loading out at a low level. This transfer function dictates a building that takes advantage of the existing terrain features and is stepped down the existing grade profile.

2. Benefits from this design requirement to comply with the transfer station function will place the proposed building in the existing grade and as low as possible, while maintaining adequate vehicle approach and circulation. All of these design criteria will reduce the building mass when viewed from across the Marsh or adjacent residential communities.
3. In addition to incorporating design constraints on the building's architecture, landscaping on the sloping surfaces immediately adjacent to the building and flowing out into the site will reduce the building mass and soften the impacts of the structure from a distance. The landscaping will also integrate the building with the surrounding area. It is planned to establish several canopy trees at varying heights so that a compatibility with the adjacent vegetation is achieved.
4. Building exterior materials will be selected to blend rather than contrast and clash with the adjacent natural vegetation. Design recommendations will include metal cladding, painting concrete surfaces, and factory finished metal siding selected in the basic green range (light lime green to medium forest green). Roofing materials will be in dark gray to dark beige with the building's concrete base and retaining walls in earthen tones. It is felt that selection of these more natural tones will help the building blend more effectively with the adjacent site.

View Plane Analyses from four positions are shown in Figure 10 on the USGS map indicating the four photos and their location of reference towards the proposed project site.

Figure 11 is towards the project site from the Ulu Po Heiau.

Figure 12 is towards the project site from Kailua Road and Kainehe Street.

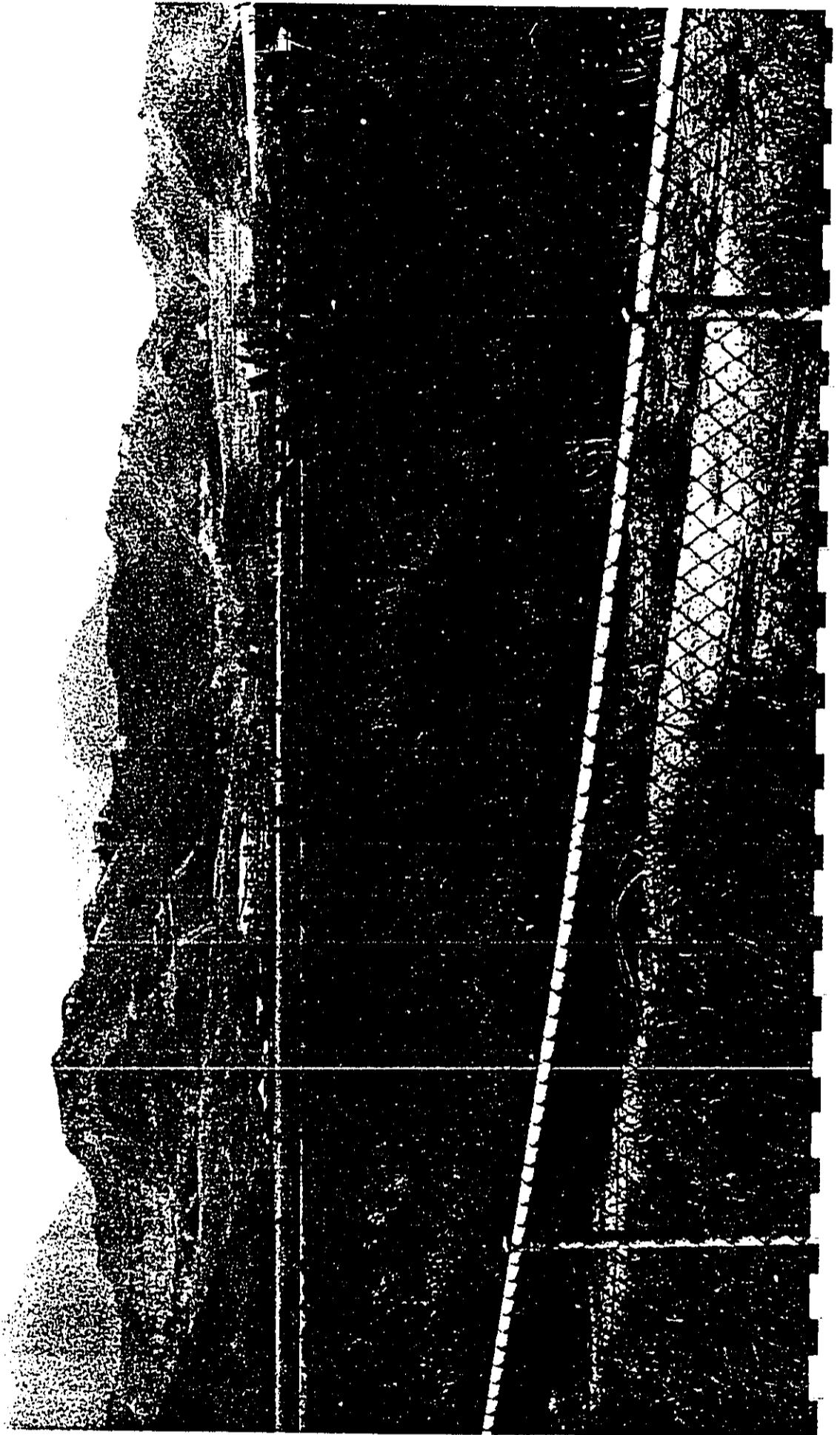
Figure 13 is towards the project site from Kaiemi and Kihapai Streets.

Figure 14 is towards the project site from Mokapu Saddle Road at the H-3 Overpass.

Figure 11



Figure 12



1 2 3 4 5 6 7 8 9 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

Figure 13

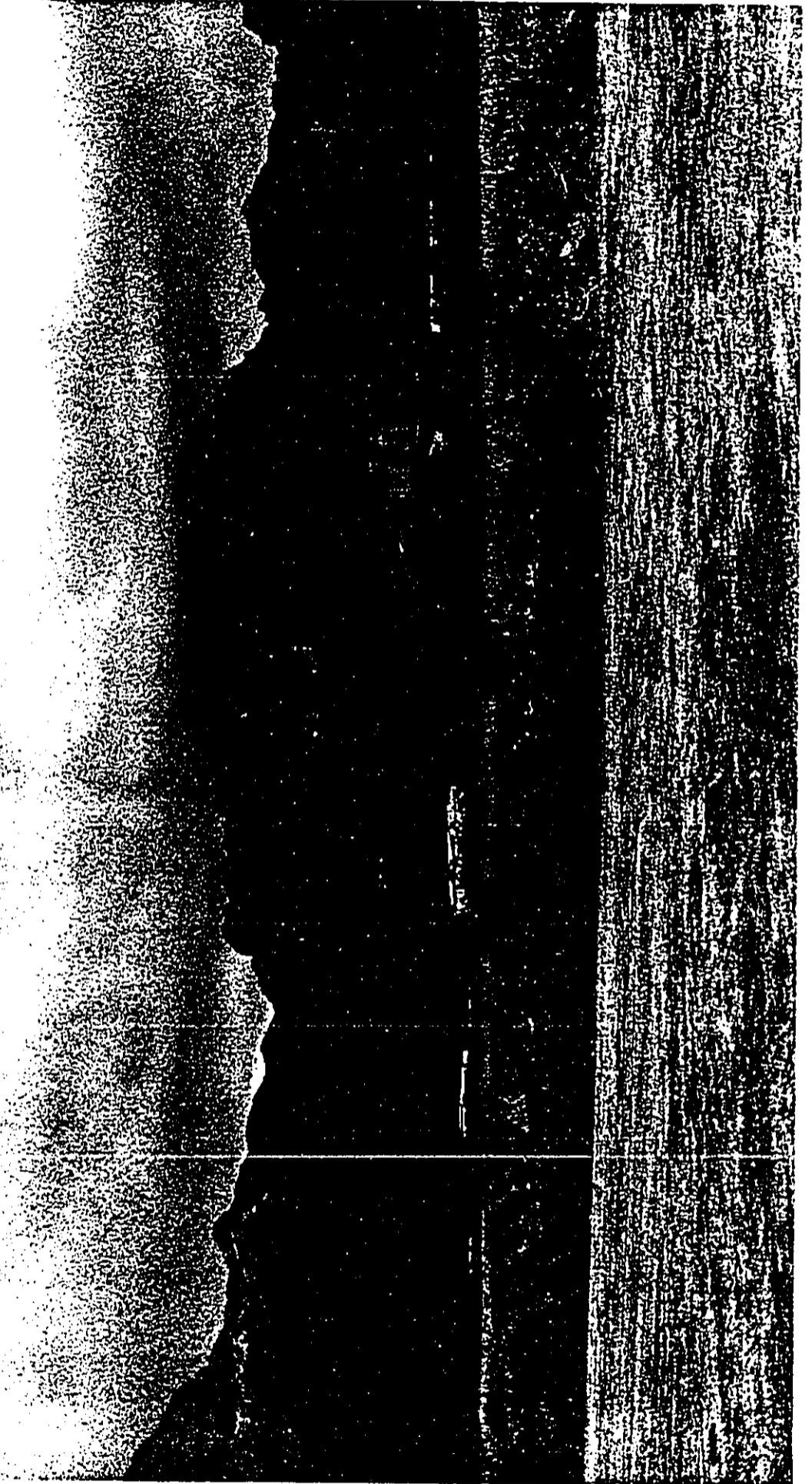
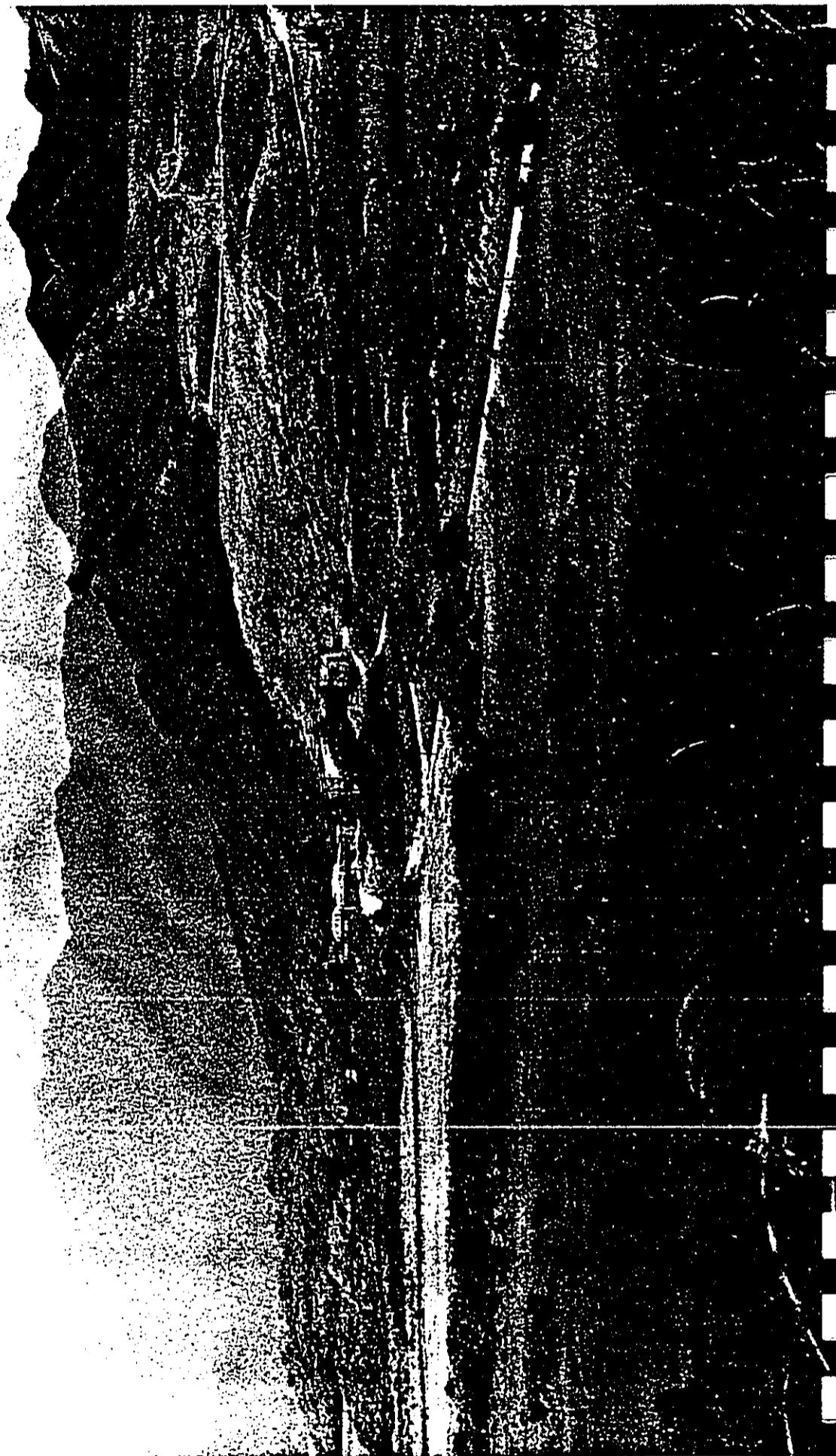


Figure 14



VIII. THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY AND IRREVERSIBLE/IRRETRIEVABLE COMMITMENTS OF RESOURCES

It is anticipated that the construction of the proposed project will commit the necessary construction materials and human resources (in the form of planning, designing, engineering, construction labor, landscaping, and personnel for the management, services offices, and maintenance functions). Some of the construction materials could be reused if and when the structures are demolished; however, at the present time and state of our economy, it is felt that the reuse of much of this material is not practical. Labor expended for this development is not retrievable.

The appearance of the project site will be altered from its present open, vacant appearance to that of a completed planned maintenance facility. The development will not be highly visible to surrounding residents but will be visually integrated with the surrounding areas.

The project development will result in a commitment of land for a long-term period. Once the transfer station use is established, it is unlikely that the land will revert to other uses in the long-term future. Commitment of land for this purpose will likely foreclose certain future use options of the land.

Ultimately, the use of the transfer station will be environmentally beneficial since alternate solid waste disposal systems used in conjunction with the transfer station will alleviate the adverse impacts of the existing Kapaa/Kalaheo Landfills.

IX. ANY PROBABLE ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

The following adverse environmental effects (both short- and long-term) cannot be avoided.

No significant adverse environmental impacts are expected from the proposed project. Short-term impacts from site-preparation and construction work will result in temporary, but minor, fugitive dust, traffic disruption, and noise. The project will permanently alter the appearance of the site but it is not felt that the project will have any significant view impacts.

X. SUMMARY OF UNRESOLVED ISSUES

At this time, there are no unresolved issues with respect to potential physical impacts. The project will require a Special Management Area permit since it is within an SMA area. Other approvals include normal building and construction permits and a solid waste management permit from the State Department of Health. Alternatives to the proposed action were developed, but were found to be less desirable than the subject project.

XI. ORGANIZATIONS AND PERSONS CONSULTED IN THE PREPARATION OF THE ENVIRONMENTAL IMPACT STATEMENT

<u>Agency</u>	<u>Date of Comment</u>	<u>Date Comment Received</u>	<u>Response to Comment</u>
<u>State</u>			
Dept. of Accounting and General Services	10/26/87	10/27/87	NRN
Dept. of Agriculture	10/15/87	10/21/87	NRN
Housing Finance and Development Corporation	-----	-----	-----
Dept. of Business and Economic Development	10/30/87	11/06/87	12/17/87
Dept. of Defense	10/23/87	10/27/87	NRN
Dept. of Education	10/21/87	10/28/87	NRN
Dept. of Health	11/10/87	11/17/87	12/17/87
Dept. of Land and Natural Resources	11/24/87	11/25/87	12/17/87
Dept. of Transportation	11/18/87	12/03/87	NRN
Land Use Commission	-----	-----	-----
OEQC	-----	-----	-----
<u>University of Hawaii</u>			
Environmental Center	-----	-----	-----
<u>City County</u>			
Board of Water Supply	10/20/87	10/21/87	12/17/87
Building Department	10/19/87	10/21/87	NRN
Dept. of General Planning	11/23/87	11/24/87	12/17/87
Dept. of Housing & Community Development	10/23/87	10/27/87	NRN
Dept. of Land Utilization	10/30/87	11/03/87	12/17/87
Dept. of Parks & Recreation	-----	-----	-----
Dept. of Transportation Services	11/03/87	11/05/87	12/17/87
Office of Human Resources	-----	-----	-----
Fire Department	11/02/87	11/03/87	12/17/87
Police Department	10/19/87	10/22/87	NRN

<u>Agency</u>	<u>Date of Comment</u>	<u>Date Comment Received</u>	<u>Response to Comment</u>
<u>Federal</u>			
Dept. of the Army Engineering District	10/29/87	11/03/87	12/17/87
Dept. of the Navy	-----	-----	-----
U.S. Dept. of Interior U.S. Fish and Wildlife Service	10/23/87	10/26/87	12/17/87
U.S. Dept. of Interior Geological Survey, Water Resources Div.	-----	-----	-----
U.S. Soil Conservation Service	11/04/87	11/09/87	NRN
<u>Private Agencies</u>			
Hawaiian Electric Company	10/27/87	10/29/87	NRN
Hawaii's Thousand Friends	-----	-----	-----
Bishop Museum	10/19/87	10/21/87	12/17/87
Ad Hoc Committee to Save Kawainui Marsh	-----	-----	-----
Ameron HC&D	10/21/87	10/23/87	12/17/87
Kawainui Heritage Foundation	11/17/87	11/23/87	12/17/87
Life of the Land	-----	-----	-----
Neighborhood Board No. 30	-----	-----	-----
Neighborhood Board No. 31	*12/01/87	12/07/87	NRN
Lani Kailua Outdoor Circle	11/06/87	11/10/87	12/17/87
Sierra Club	-----	-----	-----
Congress of the Hawaiian People	-----	-----	-----
Kaneohe Outdoor Circle	-----	-----	-----
Michael C. Baldwin Trust	-----	-----	-----
John C. Baldwin Trust	-----	-----	-----
James C. McIntosh Trust	-----	-----	-----
Pohai Nani Convalescent Hospital	11/20/87	11/23/87	12/17/87

* Received After Deadline Date
NRN - No Response Needed

RECEIVED

OCT 28 9 43 AM '87

DIVISION OF REFUSE
COLLECTION & DISPOSAL



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
DIVISION OF PUBLIC WORKS

P. O. BOX 114, HONOLULU, HAWAII 96810

876160

ROSEMARY S. HARRIS
COMPTROLLER

SEN. STANLEY
SENATE CLERK

LETTER NO. (P) 1871.7

Refer

OCT 26 1987

RECEIVED
DEPT OF PUBLIC WORKS
OCT 27 2 22 PM '87
TO

Mr. Alfred J. Thiede
Director and Chief Engineer
Department of Public Works
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii

Dear Mr. Thiede:

Subject: Environmental Impact Statement
Preparation Notice for the
Kapaa Refuse Transfer Station

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

Very truly yours,

T. Tomiyama

TEUANE TOMINAGA
State Public Works Engineer

EM:jk

NO RESPONSE NEEDED

JOHN WAIKIE
GOVERNOR



RECEIVED
DEPT OF PUB. WORKS
OCT 10 2 06 PM '87

TO
State of Hawaii
DEPARTMENT OF AGRICULTURE
1428 So. King Street
Honolulu, Hawaii 96814-2512

816608

SUZANNE D. PETERSON
CHAIRPERSON, BOARD OF AGRICULTURE
TADASHI TOJO
DEPUTY TO THE CHAIRPERSON

Mailing Address:
P. O. Box 22159
Honolulu, Hawaii 96822-0159

October 15, 1987

Mr. Alfred J. Thiede, Director and Chief Engineer
Department of Public Works
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Thiede:

Subject: Environmental Impact Statement Preparation Notice for
Kepaa Refuse Transfer Station
Department of Public Works
File No.: R 87-1032-4246F
TMR: 4-2-15: 05 Kepaa Quarry, Oahu

The Department of Agriculture has reviewed the subject document and finds that the proposed activity will not affect the agricultural resources of the area, nor the plans, programs and activities of our Department.

Thank you for the opportunity to comment.

Sincerely,

SUZANNE D. PETERSON
Chairperson, Board of Agriculture

RECEIVED

OCT 21 10 45 AM '87

DIVISION OF REFUSE
COLLECTION & DISPOSAL

ENVU4
10/30 Return

NO RESPONSE NEEDED



DEPARTMENT OF BUSINESS AND ECONOMIC DEVELOPMENT

1411 J 1-47 PH-107

876941
JOHN WAHNEE GOVERNOR
ROGER A. ULVELINO DIRECTOR
MURRAY E. TOWELL DEPUTY DIRECTOR
BARBARA KIM STANTON DEPUTY DIRECTOR

Ref. No. P-7539

October 30, 1987

The Honorable Alfred J. Thiede
Director and Chief Engineer
Department of Public Works
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Thiede:

Subject: Environmental Impact Statement Preparation Notice Kapaa Refuse Transfer Station

We have reviewed the subject proposal and have the following comments.

The EIS should include a discussion of relevant objectives and policies of the Hawaii Coastal Zone Management (CZM) Program, Chapter 205A, Hawaii Revised Statutes. As part of this discussion, we recommend that particular attention be given to the following areas of concern:

Coastal Ecosystems

A CZM policy is to promote water quality planning practices which reflect the tolerance of marine ecosystems and prohibit land and water uses which violate State water quality standards. The subject document indicates that washdown effluent from an estimated thirty-one County refuse collection trucks will flow through existing drainage systems in Kawaiauli Marsh. In view of ongoing efforts to improve water quality of the Marsh the potential impacts of this proposed practice should be fully assessed.

Scenic and Open Space Resources

Another CZM policy is to improve desirable scenic resources. Public and private agencies have been trying to restore and improve the scenic resources of Kapaa Valley and Kawaiauli Marsh. The potential impacts of the project should be discussed in more detail with respect to these ongoing efforts. The preparation notice asserts that the proposed facility's construction will "conform with the aesthetic design of the adjacent maintenance yard." This requires further elaboration.

The Honorable Alfred J. Thiede
Page 2
October 30, 1987

Thank you for the opportunity to provide comments.

Sincerely,

Murray E. Towell
Roger A. Ulveling

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Nov 6 11 05 AM '87

DIVISION OF REFUSE COLLECTION & DISPOSAL

EWU

1/6 Refuse

Mel - Ry.

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

640 SOUTH KING STREET
HONOLULU, HAWAII 96804



FRANK F. FARR
MAYOR

ALFRED J. THIEDE
DIRECTOR AND CHIEF ENGINEER

Mr. Murray E. Towill
December 17, 1987
Page 2

however, that the function of the building will require operational and functional efficiency which may affect the final design.

Thank you for your comments and continuing concern.

Very truly yours,

ALFRED J. THIEDE
Director and Chief Engineer

R 87-1242-4526F

December 17, 1987

Mr. Murray E. Towill
Deputy Director
Department of Business and
Economic Development
P.O. Box 2359
Honolulu, Hawaii 96804

Dear Mr. Towill:

Subject: Environmental Impact Statement Preparation Notice for the
Kapaa Refuse Transfer Station

Thank you for your review and comments dated October 30, 1987 on the Environmental Impact Statement Preparation Notice for the proposed Kapaa Refuse Transfer Station.

The comments have been reviewed by the retained consultants and our staff and we respond as follows:

1. Coastal Ecosystems

A report cataloging the impacts on Kawaiunui Marsh from anticipated drainage flows due to the refuse transfer station will be provided in the Draft Environmental Impact Statement (DEIS). We will be incorporating design features wherever practicable, to minimize impacts to Kawaiunui Marsh.

2. Scenic and Open Space Resources

The design team responsible for the refuse transfer station architecture has been advised of the importance of the potential view plane impacts on adjacent communities. There will be landscaping as well as building design features to lessen the facility visual impact; please understand

816751



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OCT 28 10 30 AM '87

DIVISION OF REFUSE
COLLECTION & DISPOSAL
DEPARTMENT OF DEFENSE
OFFICE OF THE ADJUTANT GENERAL
3408 DUMOND ROAD, HONOLULU, HAWAII 96813-4008

ALICE T. LING
MAJOR GENERAL
ADJUTANT GENERAL

[Signature]

RECEIVED
DEPT. OF PUBLIC WORKS
OCT 27 2 25 PM '87
TO _____

October 23, 1987

Engineering Office

Mr. Alfred J. Thiede, Director
and Chief Engineer
Department of Public Works
City & County of Honolulu
650 S. King Street
Honolulu, Hawaii 96813

Dear Mr. Thiede:

Environmental Impact Statement Preparation
Notice for Kapaa Refuse Transfer Station

Thank you for providing us the opportunity to review the above subject project.

We have no comments to offer at this time regarding this project.

Yours truly,

[Signature]

Jerry M. Matsuda
Major, Hawaii Air
National Guard
Contr & Engr Officer

NO RESPONSE NEEDED

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Oct 29 10 52 AM '87

DIVISION OF REFUSE
COLLECTION & DISPOSAL



STATE OF HAWAII
DEPARTMENT OF EDUCATION

P. O. BOX 2206
HONOLULU, HAWAII 96813

October 21, 1987

OFFICE OF THE SUPERINTENDENT

Mr. Alfred J. Thiede
Director and Chief Engineer
Department of Public Works
City and County of Honolulu
650 S. King Street
Honolulu, HI 96813

Dear Mr. Thiede:

SUBJECT: EIS Preparations Notice for
Kapaa Refuse Transfer Station

Our review of the subject project indicates that it will have
a negligible effect on our area schools.

Thank you for the opportunity to comment.

Sincerely,
Charles T. Toguchi
Charles T. Toguchi
Superintendent

NO RESPONSE NEEDED

CTT:JI

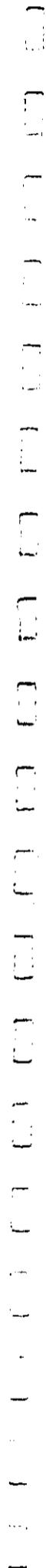
cc E. Imai, OBS
S. Loo, Windward Dist.

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER

876792
CHARLES T. TOGUCHI
SUPERINTENDENT

ENJUY
10/28 Refuse

RECEIVED
DEPT OF PUBLIC WORKS
OCT 28 2 20 PM '87
TO



DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

140 SOUTH KING STREET
HONOLULU, HAWAII 96813



ALFRED J. THIEME
DIRECTOR AND CHIEF ENGINEER

R 87-1242-4526F

December 17, 1987

Dr. Bruce S. Anderson, Deputy Director
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Dr. Anderson:

Subject: Environmental Impact Statement Preparation Notice for the
Kapaa Refuse Transfer Station

We have received your department's comments dated November 10, 1987 on the subject Environmental Impact Statement Preparation Notice and we respond as follows:

1. The subject project will be designed to comply with the provisions of Title 11, Administrative Rules Chapter 43, Community Noise Control for Oahu.
2. The contractor selected for this project will be apprised that applicable Noise requirements as mandated by the provisions of Title 11, Administrative Rules Chapter 43, Community Noise Control for Oahu must be met.

Thank you for your comments and continuing concern.

Very truly yours,

Alfred J. Thieme
ALFRED J. THIEME
Director and Chief Engineer

871869

ENV 111
11/18 Refuse
JOHN C. LUTINA, M.S.
DIRECTOR OF HEALTH



STATE OF HAWAII
DEPARTMENT OF HEALTH

P. O. BOX 3279
HONOLULU, HAWAII 96801

November 10, 1987

IN REPLY, PLEASE REFER TO:
NO. 1987-1242-4526F

RECEIVED
Nov 18 10 45 AM '87
DIVISION OF REFUSE
COLLECTION & DISPOSAL

MEMORANDUM

To: Mr. Alfred J. Thieme, Director & Chief Engineer
Department of Public Works, City & County of Honolulu

From: Deputy Director for Environmental Health

Subject: Environmental Impact Statement Preparation Notice for Kapaa Refuse Transfer Station, Koolauoko District, Oahu, Hawaii

Thank you for allowing us to review and comment on the subject EISPN. In the preparation of an EIS, compliance to Title 11, Administrative Rules Chapters 42 and 43 must be included.

1. The proposed project must be designed to comply with the provisions of Title 11, Administrative Rules Chapter 43, Community Noise Control for Oahu. Noise from the transfer activities must be attenuated to meet the allowable noise levels of the rules based on zoning districts.
2. Construction activities must comply with the provisions of Title 11, Administrative Rules Chapter 43, Community Noise Control for Oahu:
 - a. The contractor must obtain a noise permit if the noise levels from the construction activities are expected to exceed the allowable levels of the rules.
 - b. Construction equipment and onsite vehicles or devices requiring an exhaust of gas or air must be equipped with mufflers.
 - c. The contractor must comply with the conditional use of the permit as specified in the rules and conditions issued with the permit.

Bruce S. Anderson
BRUCE S. ANDERSON, Ph.D.

NOV 30 1987

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

450 SOUTH KING STREET
HONOLULU, HAWAII 96809



FRANK F. FARM
MAYOR

ALFRED J. THREDE
DIRECTOR AND CHIEF ENGINEER

Mr. William W. Paty
December 17, 1987
Page 2

We appreciate the time you and your staff spent reviewing the document and look forward to your further participation in the EIS process.

Very truly yours,


ALFRED J. THREDE
Director and Chief Engineer

R 87-1242-4526F

December 17, 1987

Mr. William W. Paty, Chairperson
Department of Land and Natural
Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Paty:

Subject: Environmental Impact Statement Preparation Notice for the
Kapaa Refuse Transfer Station

Thank you for your comments dated November 24, 1987 on the Environmental Impact Statement Preparation Notice for the Kapaa Refuse Transfer Station. We have prepared the following responses to your comments:

1. Historic Sites Concerns

We acknowledge the statement of "no effect" on significant historic sites. We will keep your office apprised of any discovery of historic remains during site preparation; we will direct the contractor to stop work and advise your office so that an evaluation can be made to determine mitigative action, if needed.

2. Recreation Concerns

The subject of visual impact and the concerns expressed by other agencies and individuals has been passed to the retained architectural consultant for their review and consideration. There will be a specific effort made to mitigate the proposed structural improvements by additional landscaping, selection of exterior color schemes, and other mitigative measures that may be suggested by the consultant team.

3. Water and Land Development Concerns

The draft EIS will assess the impacts on Kawaunui Marsh from washdown due to the proposed project.

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96813



RECEIVED
OFFICE OF PUBLIC WORKS
OCT 21 1 34 PM '87

FRANK F. FASI, Mayor
DOMENICA B. GOIN, Chairman
ERNEST A. WALTER, Vice Chairman
MILTON J. KOLVER
SISTER M. DAVEN, ARCHD. O.S.F.
EDWARD Y. HEBATA
ALFRED J. THIEDE
JOHN K. TSUB
KAZU HAYASHIDA
Manager and Chief Engineer

816657

FRANK F. FASI
MAYOR



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

ALFRED J. THIEDE
DIRECTOR AND CHIEF ENGINEER

TO: ALFRED J. THIEDE, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

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

SUBJECT: YOUR MEMORANDUM OF OCTOBER 6, 1987 ON THE
ENVIRONMENTAL IMPACT PREPARATION NOTICE FOR THE
KAPAA REFUSE TRANSFER STATION, TMK: 4-2-15:5

Refer

October 20, 1987

December 17, 1987

R 87-1242-4526F

MEMORANDUM

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

FROM: ALFRED J. THIEDE, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE
FOR THE KAPAA REFUSE TRANSFER STATION, TMK: 4-2-15: 5

The proposed refuse transfer facility is not anticipated to have any adverse impacts to potable ground water resources or our water system facilities in the area.

The availability of additional water will be determined when the construction drawings are submitted for our review and approval. If additional water is made available, the applicant will be required to pay our Water System Facilities Charges for source-transmission and daily storage. The installation of fire hydrants within the project site should be coordinated with the Fire Department.

If you have any questions, please contact Lawrence Whang at 527-6138.

Thank you for your comments on the above proposed project and we will provide your staff the construction drawings for their review and approval. (Installation of fire hydrants will be coordinated with the Fire Department for their review and approval.)

We appreciate the time you and your staff spent reviewing the document.

[Signature]
ALFRED J. THIEDE
Director and Chief Engineer

RECEIVED
OCT 22 9 36 AM '87
DIVISION OF REFUSE
COLLECTION & DISPOSAL

[Signature]
FOR KAZU HAYASHIDA

DEPARTMENT OF GENERAL PLANNING
CITY AND COUNTY OF HONOLULU
DEPT OF PUBLIC WORKS, SOUTH KING STREET
HONOLULU, HAWAII 96813

NOV 24 10 56 AM '87



FRANK F. FAR
DIRECTOR

818008

EVUUC
1/4 Figure

DONALD A. CLEGG
CHIEF PLANNING OFFICER
GERE CONNELL
DEPUTY CHIEF PLANNING OFFICER

November 23, 1987

VW/DGP 10/87-3474

MEMORANDUM

TO: ALFRED J. THIEDE, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

FROM: DONALD A. CLEGG, CHIEF PLANNING OFFICER
DEPARTMENT OF GENERAL PLANNING

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT (EIS) PREPARATION
NOTICE FOR THE KAPAA REFUSE TRANSFER STATION--
DGP FILE NO. 87/KP-1007(IC)

The following comments and recommendations are aimed at strengthening Section III. Affected Environment and Section IV. Summary of Major Impacts and Mitigation Measures to provide more information and details for governmental, environmental and community organizations that will review, analyze and comment on this EIS:

SECTION III. AFFECTED ENVIRONMENT

E. DRAINAGE

1. Provide a map showing storm and/or vehicle washdown runoff flow patterns from the subject site toward Quatry Road and Kawaiinui Marsh.
2. Describe and provide a map of DPM's leachate monitoring program and the results thereof. If the Kapaa Refuse Transfer Station is not expected to produce leachate, explain the reasons.

F. CULTURAL RESOURCES

Display on a map the historic sites around the periphery of Kawaiinui Marsh within 1000 feet of the project site.

Alfred J. Thiede, Director and Chief Engineer
Department of Public Works
Page 2
November 23, 1987

SECTION IV. SUMMARY OF MAJOR IMPACTS AND MITIGATION MEASURES

A. PHYSICAL AESTHETIC

Because of the great community concern about potential visibility of proposed city projects in the Kapaa area, prepare a view study to determine the visibility of the proposed Kapaa Transfer Station from all residential areas that may be visually impacted by it (i.e., Kailua, Olomana and Pohakupu). If the proposed refuse transfer station would not result in visual impacts, please so indicate via a profile map.

B. WATER QUALITY

Our previous comments should be deleted.

D. NOISE ENVIRONMENT

Our previous comments should be deleted.

E. BIOLOGICAL RESOURCES

The EIS should fully discuss any anticipated primary and secondary impacts that the proposed Kapaa Refuse Transfer Station will have upon Kawaiinui Marsh. Even if these are expected to be minimal, the amount of community concern on this point suggests that a fuller discussion would be helpful.

G. SOCIO-ECONOMIC

Quantify the projected future refuse service needs of the projected population of Koolauoko and show how the planned new Kapaa Refuse Transfer Station fits into the overall refuse processing plan for Koolauoko. Describe the 26 new jobs that the new Kapaa facility will provide. Several statements on population (Page II-5 of the Environmental Assessment) should be corrected (e.g., 1970-1980 growth rate for Koolauoko, title of DPED 1982 paper).

Donald Clegg
DONALD A. CLEGG
Chief Planning Officer

816798

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

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OCT 27 10 09 AM '87
DIVISION OF REFUSE
COLLECTION & DISPOSAL

340 SOUTH KING STREET
HONOLULU, HAWAII 96813
PHONE 533-3181

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OCT 27 8 05 AM '87



MIKE MOON
DIRECTOR
DEPT OF PUBLIC WORKS

Agun

October 23, 1987

MEMORANDUM

TO: Alfred J. Thiede, Director and Chief Engineer
Department of Public Works

FROM: Mike Moon

SUBJECT: EIS Preparation Notice
Kapaa Refuse Transfer Station
TKM: 4-2-15: 5
Koolauapoko, Oahu

Thank you for the opportunity to review and comment on the EIS preparation notice for the proposed Kapaa Refuse Transfer Station in the Koolauapoko district, Oahu.

We have no objections to the proposed project which involves the construction of a refuse transfer station for solid waste for the Koolauapoko district.

Robert Myer
for MIKE MOON
Director

NO RESPONSE NEEDED

DEPARTMENT OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU
 430 SOUTH KING STREET
 HONOLULU, HAWAII 96813-0048

816872
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 1/3 REFUSE

FRANK F. ZAM
 DIRECTOR

JOHN P. WHALEN
 DIRECTOR
 (LUIO/87-5457) (BWH)



RECEIVED
 Nov 3 9 18 AM '87
 DIVISION OF REFUSE
 COLLECTION & DISPOSAL

October 30, 1987

MEMORANDUM

TO: ALFRED J. THIEDE, DIRECTOR AND CHIEF ENGINEER
 DEPARTMENT OF PUBLIC WORKS

FROM: JOHN P. WHALEN, DIRECTOR

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE
 FOR KAPAA REFUSE TRANSFER STATION

Thank you for your October 6, 1987 request for consultation comments. We offer the following comments and questions for your consideration:

1. Consistency with the Development Plan Public Facilities (DP-PF) map should be discussed. The DP-PF map shows that the site selected is proposed for both a solid waste facility and for a park facility. We note that another nearby site is also shown for a solid waste facility.
 The EIS should discuss the City's policy, as shown on the DP-PF map. It is unclear how the site can be used for both a refuse transfer station and a park. Have the plans for a park at this site been abandoned? What will the other nearby site identified for use as a solid waste facility on the DP-PF map be used for?
2. Figure 3, Project Site Map (at 1" = 1000' scale) should be revised to show the boundaries of actual site proposed for the transfer station.
3. Conformance of the project to the Kawaiinui Marsh Resource Management Plan should be discussed.

MEMO TO ALFRED J. THIEDE
 Page 2

4. The existing nearby Sanitary Landfill (SLF) site is nearing capacity. Will this SLF site be used as a public park in the future? If the SLF site is used in the future for a public park, will the refuse transfer station be compatible with the park use?
5. Impacts on views from significant public viewing points and areas should be discussed. Specifically, how will the views from Pahukini Heiau, H-3 Highway, the Saddle Road, and the Kapaa Quarry Road be affected? If and when the SLF operations are completed and the site is converted to a public park, will views from the park be adversely affected by the refuse transfer station structures? A view impact study on important public viewpoints around the periphery of Kawaiinui Marsh should also be included.
6. The water quality of Kawaiinui Marsh is an important concern. A drainage study should estimate the quantity and type of contaminants which may be carried by runoff into the marsh. Mitigative measures to capture oil, grease, sediment, and other contaminants by means of catch basins or other methods should be discussed. Since the degradation of the water quality of the marsh may have adverse effects upon waterbirds and other wildlife within the marsh, a full discussion of these effects should be included.

Thank you for the opportunity to comment. If you have any questions regarding our comments, please call Bennett Mark of our staff at 527-5038.

Very truly yours,

 JOHN P. WHALEN
 Director of Land Utilization

JPW:sj
 14128

10/31/87 10:31 AM

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

430 SOUTH KING STREET
HONOLULU, HAWAII 96813



PLANK & FLEM
DIVISION

ALFRED J. THIEDE
DIRECTOR AND CHIEF ENGINEER

December 17, 1987

R 87-1242-4526F

MEMORANDUM

TO: MR. JOHN P. WHALEN, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: ALFRED J. THIEDE, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION
NOTICE FOR KAPAA REFUSE TRANSFER STATION

Thank you for your letter of October 30, 1987, on the Environmental Impact Statement Preparation Notice (EISP/N) for the proposed Kapaa Refuse Transfer Station. We appreciate the time you and your staff spent reviewing this document.

The comments and information which you provided were valuable to us in preparing the Environmental Impact Statement. We expect to file it with the State Environmental Quality Commission shortly.

We look forward to your further participation in the EIS process and your comments on the EIS. If you have questions regarding the project, please contact Melvin Lee at 527-6267.


ALFRED J. THIEDE
Director and Chief Engineer

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



FRANK G. FARIS
 MAYOR

NOV 4 3 27 PM '87

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 NOV 5 12 00 PM '87
 DIVISION OF REFUSE
 COLLECTION & DISPOSAL
 TEL-8740

JOSEPH M. MAGALDAN, JR.
 DEPUTY DIRECTOR

November 3, 1987

MEMORANDUM

TO: ALFRED J. THIEDE, DIRECTOR AND CHIEF ENGINEER
 DEPARTMENT OF PUBLIC WORKS

FROM: JOHN E. HIRTEN, DIRECTOR

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION
 NOTICE FOR KAPAA REFUSE TRANSFER STATION

This is in response to your memorandum of October 6, 1987 requesting comments concerning the subject preparation notice. We believe that the mix of heavy vehicles with private vehicles around the project site during construction as well as during the eventual operation of the proposed transfer station should be addressed in the forthcoming EIS.

Thank you for the opportunity to comment. If there are any questions, please contact Kenneth Hirata of my staff at Local 5009.

John E. Hirten
 JOHN E. HIRTEN

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



FRANK F. FARIS
 MAYOR

December 17, 1987

R 87-1242-4526F

MEMORANDUM

TO: MR. JOHN E. HIRTEN, DIRECTOR
 DEPARTMENT OF TRANSPORTATION SERVICES

FROM: ALFRED J. THIEDE, DIRECTOR AND CHIEF ENGINEER
 DEPARTMENT OF PUBLIC WORKS

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE
 FOR KAPAA REFUSE TRANSFER STATION

Thank you for your review and comments dated November 3, 1987 on the Environmental Impact Statement Preparation Notice for the proposed Kapaa Refuse Transfer Station.

We will be providing a Traffic Impact Analysis report in the Draft Environmental Impact Statement currently under preparation. We look forward to your further participation in the EIS process and to your comments on the EIS.

We appreciate the time you and your staff spent reviewing this document.

Alfred J. Thiede
 ALFRED J. THIEDE
 Director and Chief Engineer

11-11-87 10:00 AM

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

80 SOUTH KING STREET
HONOLULU HAWAII 96813



ALFRED J. THIEDE
DIRECTOR AND CHIEF ENGINEER

December 17, 1987 R 87-1242-4526F

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

1435 K. KEMERLING STREET, ROOM 200
HONOLULU HAWAII 96813



FRANK K. KAHOOHANOHANO
FIRE CHIEF

November 2, 1987

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1/3 Refuse

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DIVISION OF REFUSE
COLLECTION & DISPOSAL

TO: ALFRED J. THIEDE, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

FROM: FRANK K. KAHOOHANOHANO, FIRE CHIEF

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE FOR
KAPAA REFUSE TRANSFER STATION (R87-1031-4273F)

We have reviewed the subject material provided and foresee no adverse impact on fire protection facilities or services, existing or planned.

Fire protection for the proposed Kapaa Refuse Transfer Station is available from the Niihau Fire Station (an engine company and 5 personnel), Kaliua Fire Station (a ladder company and 6 personnel) and Oloana Fire Station (an engine company and 5 personnel). Fire protection for the proposed project is considered adequate. We are concerned about water supply in case a fire should occur and request adequate hydrants be provided in accordance with applicable codes and ordinances.

Should you have any questions, please contact Battalion Chief Kenneth Word at local 3838.

Frank K. Kahooahano
FRANK K. KAHOOHANOHANO
Fire Chief

FKK/KAW:sb

MEMORANDUM

TO: FIRE CHIEF FRANK K. KAHOOHANO
HONOLULU FIRE DEPARTMENT

FROM: ALFRED J. THIEDE, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE
KAPAA REFUSE TRANSFER STATION (R87-1031-4273F)

Thank you for your review and comments dated November 2, 1987 on the proposed Kapaa Refuse Transfer Station. The information provided as to the source and capability for fire protection support will be included in the Draft Environmental Impact Statement. Fire hydrants will be provided in accordance with applicable codes and ordinances.

We appreciate the time you and your staff spent reviewing the document.

Alfred J. Thiede
ALFRED J. THIEDE
Director and Chief Engineer

57663

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

1435 SOUTH BERTHANIA STREET
HONOLULU, HAWAII 96813 AREA CODE (808) 943-3111

Oct 22 8 50 AM '87

DIVISION OF REFUSE
COLLECTION & DISPOSAL



DOUGLAS G. GIBB
CHIEF
MIRREN PEREIRA
DEPUTY CHIEF

Revised

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OCT 22 11 48 AM '87

October 19, 1987

OUR REFERENCE SS-LX

TO: ALFRED J. THIEDE, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

FROM: DOUGLAS G. GIBB, CHIEF OF POLICE
HONOLULU POLICE DEPARTMENT

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE
(EISPEN) FOR KAPAA REFUSE TRANSFER STATION

We have reviewed the above EISPEN and have no objections to the proposed project at this time.

Thank you for the opportunity to provide comments.

Douglas G. Gibb
DOUGLAS G. GIBB
Chief of Police

NO RESPONSE NEEDED

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DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
BUILDING 320
FT. SHAFTER, HAWAII 96861-5440

REPLY TO
ATTENTION OF:

Planning Branch

Mr. Alfred J. Thiede, Director
Department of Public Works
City and County of Honolulu
658 South King Street
Honolulu, Hawaii 96813

Dear Mr. Thiede:

Thank you for the opportunity to review and comment on the EIS Preparation Notice for Kapaa Refuse Transfer Station. The following comments are offered:

- a. Based on the EIS Preparation Notice, the project does not involve work or fill in waters of U.S. or adjacent wetlands. Please be advised that DA permit requirements also apply to temporary construction fills and stockpile areas in wetlands as well.
- b. The parcel identified by tax map key 4-2-1515 is shown on the enclosed Flood Insurance Rate Map and is designated as zone X which is outside of the 500-year flood plain.

Sincerely,

[Signature]
Klaus Cheung
Chief, Engineering Division

Enclosure

NATIONAL FLOOD INSURANCE PROGRAM

**FIRM
FLOOD INSURANCE RATE MAP**

**CITY AND COUNTY OF
HONOLULU,
HAWAII**

**PANEL 90 OF 135
(SEE MAP INDEX FOR PANELS NOT PRINTED)**



PANEL LOCATION
**COMMUNITY-PANEL NUMBER
150001 0090 B**

**MAP REVISED:
SEPTEMBER 4, 1987**

Federal Emergency Management Agency

87-6190

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Nov 4 9 56 AM '87
DIVISION OF REFUSE
COLLECTION & DISPOSAL

October 29, 1987
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ENCLOSURE
[Signature]

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

450 SOUTH KING STREET
HONOLULU, HAWAII 96813



FORM 2 P. 88
1-1-78

ALFRED J. HIEDE
DIRECTOR AND CHIEF ENGINEER

December 17, 1987

R 87-1242-4526P

Mr. Kieuk Cheung
Chief, Engineering Division
Department of the Army
U.S. Army Engineer District, Honolulu
Building 230
Ft. Shafter, Hawaii 96858

Dear Mr. Cheung:

Subject: Environmental Impact Statement Preparation Notice for the
Kapaa Refuse Transfer Station

Thank you for your agency's comments dated October 29, 1987 on the Environmental Impact Statement Preparation Notice (EISP/N) for the proposed Kapaa Refuse Transfer Station. As you have noted in your comments, the project will not involve any work requiring U.S. Army Corps of Engineers permits and we do not anticipate any temporary construction fills and/or stockpile areas in wetland areas.

The information as to the location of the subject project on the Flood Insurance Rate Map will be included in the Draft Environmental Impact Statement.

We appreciate your comments and continuing concern.

Very truly yours,


ALFRED J. HIEDE
Director and Chief Engineer

UNITED STATES
DEPARTMENT OF
AGRICULTURE

SOIL
CONSERVATION
SERVICE

P. O. BOX 50004
HONOLULU, HAWAII
96850

876775
ENV 44
#19 REFUSE

November 4, 1987

Mr. Alfred J. Thiede
Director and Chief Engineer
Department of Public Works
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96815

Dear Mr. Thiede:

Subject: Environmental Impact Statement Preparation Notice for Kapaa
Refuse Transfer Station

We have reviewed the EIS preparation notice and have no comments to offer
at this time.

In the future, please send similar-type documents to Stratford Whiting,
District Conservationist, Soil Conservation Service, P.O. Box 50006,
Honolulu, HI 96850.

Sincerely,

Richard N. Duncan
RICHARD N. DUNCAN
State Conservationist

cc:
Stratford Whiting, DC, SCS, Honolulu FO

NO RESPONSE NEEDED

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COLLECTION & DISPOSAL

Hawaiian Electric Company, Inc. • PO Box 2750 • Honolulu, HI 96840-0001

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Ryue

October 27, 1987



Brenner Mungge Ph.D., P.E.
Manager
Environmental Department
(808) 548-6880

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OCT 28 2 20 PM '87

Mr. Alfred J. Thiede
Director and Chief Engineer
Department of Public Works
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Thiede:

Subject: Environmental Impact Statement Preparation Notice for
Kapaa Refuse Transfer Station

We have reviewed the above document and have no comments.

Sincerely,

Brenner Mungge

NO RESPONSE NEEDED

AnHEI Company

11-11-87 10:55 AM



B I S H O P DEPT. OF PUBLIC WORKS
MUSEUM HONOLULU, HAWAII 96813

816658

October 19, 1987

Mr. Alfred J. Thiede
 Director and Chief Engineer
 Department of Public Works
 City and County of Honolulu
 650 South King Street
 Honolulu, Hawaii 96813

RECEIVED
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 DIVISION OF REFUSE
 COLLECTION & DISPOSAL

Refuse

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



FRANK P. FINE
 ARCHITECT

ALFRED J. THIEDE
 DIRECTOR AND CHIEF ENGINEER

December 17, 1987 R 87-1242-4526F

Mr. Aki Sinoto, Acting Leader
 Applied Research Group
 Bishop Museum
 P.O. Box 19000A
 Honolulu, Hawaii 96817-0916

Dear Mr. Sinoto:

Subject: Environmental Impact Statement for the Kapaa Refuse
 Transfer Station

Subject: EIS Prep Notices-Kapaa Refuse Transfer Station

Thank you for the opportunity to review the subject document. We have reviewed the cultural resource portion and agree with the statement made in Section III-F. The prior disturbance has been extensive in the subject area and no surface remains are present. However, since there always exists the possibility of subsurface material we also agree with the recommendation made in Section IV-F. We further recommend that at the time of construction related excavation, the State archaeologist should inspect the area and record any pertinent subsurface data.

If you have any questions, I am available at 848-4110.

Sincerely,
Aki Sinoto
 Aki Sinoto, Acting Leader
 Applied Research Group

Thank you for your review and comments dated October 19, 1987 on the Environmental Impact Statement Preparation Notice for the proposed Kapaa Transfer Refuse Station. The State Historical Preservation Officer will be made aware of any subsurface artifacts that are uncovered during the construction excavation.

We appreciate your comments and continuing interest.

Very truly yours,

Alfred J. Thiede
 ALFRED J. THIEDE
 Director and Chief Engineer

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17 November 1987 11:23
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DIVISION OF REFUSE
COLLECTION & DISPOSAL

Mr. Alfred J. Thiede
Director and Chief Engineer
Department of Public Works
City & County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Re: Environmental Impact Statement Preparation Notice for the
Kapaa Refuse Transfer Station (TK 4-2-1515)

Dear Mr. Thiede:

Please accept my apologies for this delayed response to the referenced EISP. We do agree that an EIS should be prepared for the proposed project. I hope our comments which follow can still be of some use as the EIS is formulated.

First we would like to make two general comments.
(1) There seems to be no mention of the cumulative impact of expansion of the City's Kapaa Quarry Maintenance Yard (as proposed in the Department of General Planning (DGP) Ko'olau-poko Development Plan Public Facilities Map amendment 87/KP-1018(IC) and this proposal. Since they are both projects of your Department and apparently in the same time frame and location, we believe the impact of both projects should be mentioned in the EIS.

(2) The Foundation and its predecessor organization, the Ad Hoc Committee for Kawaihi Marsh Park, have long maintained that industrial development should not be encouraged or increased on the periphery of Kawai Nui Marsh. We are aware that the Development Plan Public Facilities map for the area shows a "solid waste facility, site undetermined, 6 years and beyond" further back in Kapa'a Valley. Therefore we urge that both the transfer facility and the current corporation yard be placed back in Kapa'a Valley adjacent to the quarry or at the base of the Kalanoo landfill and that the DP map be changed to show that placement of the joint facility with a timing within 6 years.

Comments on specific sections of the EISP:

p. II-2, first paragraph under item B: No dimensions are given to "be designed to be aesthetically compatible with the

Mr. Alfred J. Thiede from Susan E. Miller
17 November 1987

Page 2

existing area." However, elsewhere in the EISP a floor area of 28,000 square feet is given. Since there is to be "a single freestanding structure", the dimensions have to be some variation of 28 ft. x 100 ft. by 7 (height). Such a structure (with a "footprint" the length of a third of a football field) cannot be "aesthetically compatible" with the open space around it. It will of necessity be visible from three sides of the Marsh and therefore from much of Kailua. This is another reason for removing it to the more unobstrusive areas of Kapa'a Quarry or the base of Kalanoo landfill.

p. II-5, item C.1.: Three sources are mentioned for population projections (none of which are the latest figures that we are aware of -- Department of Planning and Economic Development's II-F projections of 1984, which were adopted by DGP in 1984). The last line of the paragraph gives a projected increase for the "rural" (?) district of Ko'olau-poko of 11% but does not say which projection(s) are the source of the figure.

p. II-5, item C.2.: Again, no source is given for the employment and other percentages in the paragraph.

p. II-6, item D.: As noted above, we do not believe there is any existing area in aesthetics and its environmental characteristics."

Second paragraph: It is our understanding that if this project will be financed with any federal dollars, then a determination must be made by the State Coastal Zone Management Program as to the consistency of the project with the Hawaii Coastal Zone Management Act. In this connection, we point out that the relevant statute, Chapter 205A HRS, in its policies and objectives indicates that non-coastal dependent facilities should not be located in the coastal zone.

Ma Ikaia'i Pono 'O Kawai Nui

KAWAI NUI HERITAGE FOUNDATION
P.O. BOX 1101 KAILUA, HAWAII 96734

Ma Ikaia'i Pono 'O Kawai Nui

KAWAI NUI HERITAGE FOUNDATION
P.O. BOX 1101 KAILUA, HAWAII 96734

Mr. Alfred J. Thiede from Susan E. Miller
17 November 1987

Page 3

p. III-4, item C.: What is the source of the statement "maximum recorded 24-hour rainfall has been less than 12 inches" and where was this rainfall recorded?

p. III-5, item E.: last two lines: Was this leachate monitoring program continued? If so, what were results? It is our understanding that during the 1978-80 study, two of the three test wells (of a total of six) that were maked of the landfill were accidentally destroyed and the third became clogged. Thus the study period referred to may ill-represent the potential for leachate contamination of groundwater in the area.

p. III-5, item G.: No sources are given for either the flora or fauna lists on this or the next page. Since runoff from the project area will enter the Marsh, it would seem appropriate to mention that the Marsh is habitat for the State's four endangered waterbirds. This becomes more significant when the objectives of the State's ~~CONSERVATION PLAN FOR KAWAIKUI MARSH~~ are taken into account, as these call for opening the Marsh for additional waterbird habitat in the area of the Marsh adjacent to the proposed project site.

p. IV-1, item A.: We have previously expressed our disagreement with the conclusion that there will be no significant aesthetic impact of the project. If the new facility "conform(s) with the aesthetic design of the adjacent maintenance yard", it will be done in old plantation village rust!

p. IV-1, item B.: How can a structure as big as that necessary for the proposed floor area have minimal structural runoff? It and the surrounding parking areas will be covering a now mostly permeable surface with impermeable materials, which logically would increase drainage into the receiving area of the existing drainage system which is the Marsh.

p. IV-2, item E.: How can the EISP talk about "improvements to the Transfer Station" when it has not been built yet? Or is it being built now? When we took our

Mr. Alfred J. Thiede from Susan E. Miller
17 November 1987

Page 4

quarterly bus tour past the project area on 14 November, we observed that a new concrete slab has been laid in the area.

p. IV-2, item F.: The entire Kawai Nui area (not just the Marsh) was declared eligible for listing on the National Register of Historic Places as a historic/cultural/archaeological complex in July 1979. Since all laws applicable to listed properties are applicable to eligible properties, it is not sufficient just to refer to Panukini heiau when talking about cultural resources in connection with the proposed project.

p. IV-2, item G.: How can the statement "approximately 26 additional jobs will be provided for operation of the facility" be squared with the statement on p. II-4 that "traffic from the Transfer Station employees will be offset by the decrease in landfill personnel"?

The State's Resource Management Plan referred to earlier includes in it a trail from Kapa'a Quarry Road to Panukini heiau. Use of such a trail will not be encouraged by the presence of this facility and large transfer vehicles.

Also, Cultural Resources Implementing Action D-1 of the State Plan states that "The existing sanitary landfill site (Kapa'a), following closure[,] should be graded and landscaped." This certainly implies that it is not appropriate to place a large, permanent structure in front of that landfill, when the emphasis is on restoring the area to a semblance of its former natural state.

p. VIII-2: Please note that the Ad Hoc Committee to Save Kawai Nui Marsh has not existed since 1983, when Kawai Nui Heritage Foundation was incorporated to carry on the Ad Hoc Committee's efforts.

Me ke aloha pumehana,

Susan E. Miller

Susan E. Miller
Vice President for Public Affairs

Ma Kīia'i Pono 'O Kawai Nui

KAWAI NUI HERITAGE FOUNDATION
P.O. BOX 1101 KAILUA, HAWAII 96734

Ma Kīia'i Pono 'O Kawai Nui

KAWAI NUI HERITAGE FOUNDATION
P.O. BOX 1101 KAILUA, HAWAII 96734

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

630 SOUTH KING STREET
HONOLULU, HAWAII 96813



FRANK P. FARM
MAYOR

ALFRED J. THORPE
DIRECTOR AND CHIEF ENGINEER

December 17, 1987

R 87-1242-4526F

Mrs. Susan E. Miller
Vice President for Public Affairs
Kawai Nui Heritage Foundation
P.O. Box 1101
Kailua, Hawaii 96734

Dear Mrs. Miller:

Subject: Environmental Impact Statement Preparation Notice for the
Kapaa Refuse Transfer Station

Thank you for your comments dated November 17, 1987 on the Environmental Impact Statement Preparation Notice (EISPH) for the proposed Kapaa Refuse Transfer Station. We have reviewed your organization's comments and respond as follows:

1. The Public Facilities Map amendment refers to an expansion of the new Automotive Equipment Service building presently under construction. A Negative Declaration dated April 1985 was prepared for this project.
2. The project is presently designated on the Development Plan Public Facilities Map as SW/M (Solid Waste Management) within 6 years. A new Automotive Equipment Service building is also presently under construction. It would be difficult and not cost effective to physically move the transfer station and corporation yard.

Specific Comments

- a) Page II-2: The structural design phase is still ongoing and building dimensions will be provided in the draft EIS for review and comment.
- b) Page II-5, Item C.1: The DPED Series II-F population projection figures of 1984 will be used where applicable and will be cited in the draft EIS.
- c) Page II-6, Item D: The retained architectural consultants will be providing landscaping and exterior color finish selection choices to mitigate the visual impacts of this proposed project.

Mrs. Susan E. Miller
December 17, 1987
Page 2

We realize that existing characteristics will not be equivalent to any new structural improvements, but please be assured that all efforts will be made to mitigate, to the extent practicable, these visual impacts on adjacent communities and vantage points.

Appropriate review of the Chapter 205A, HRS requirement for Coastal Zone Management review will be made by the DPED.

- d) Page III-4, Item E: The source for this statement was the Negative Declaration prepared for the Kapaa Maintenance Yard in April 1985, and the location cited was Kapaa where the U.S. Weather Service advised that the 100-year storm rate was 15 inches of rain in 24 hours.
- e) Page III-5, Item E: The city is continuing the leachate monitoring program. Two leachate monitoring wells makal of the landfill are operational.
- f) Page III-5, Item G: The source for the flora/fauna listing came from the same Negative Declaration for the Kapaa Maintenance Yard, April 1985.
- g) Page IV-1, Item A: Your comment is acknowledged.
- h) Page IV-1 Item B: The structural runoff was meant to refer to runoff resulting from washdown of the facility.
- i) Page IV-2, Item E: The sentence you refer to will be corrected in the draft EIS to read: "The proposed addition to the Corporation Yard will have no significant secondary impacts on Kawai Nui Marsh."
- j) Page IV-2, Item F: Discussions with the State Historic Preservation Office confirm your statement that the entire Marsh is eligible for listing on the National Register.
- k) Page IV-2, Item G: A Traffic analysis will be included in the draft EIS that will identify the additional traffic flow that will result from this proposed project. At the present time, the net additional traffic is not considered significant.

The implementation of this project should have minimal impact to the referenced trail from the Kapaa Quarry Road to the Pahukini Heiau. The average daily traffic on Kapaa Quarry Road is 5,843 vehicles of which 325 vehicles would be attributed to the transfer station.

The transfer station will be at the base of the landfill. As stated before all efforts will be made to mitigate the visual impacts.

RECEIVED
Dec 7 8 21 AM '87
DIVISION OF REFUSE
COLLECTION & DISPOSAL

KAILUA NEIGHBORHOOD BOARD NO. 31
50 KAILUA SATELLITE CITY HALL
500 KAILUA ROAD
KAILUA, HAWAII 96734



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ENV
124 REFUSE

KAILUA NEIGHBORHOOD BOARD NO. 31
Environmental Committee
Mr. Al Thiede, DPM
December 1, 1987
Page 2

December 1, 1987

Mr. Al Thiede, Director and Chief Engineer
Department of Public Works
City and County of Honolulu
650 S. King Street
Honolulu, HI 96813

Dear Mr. Thiede:

The Environmental Committee thanks you for allowing us additional time in which to respond and request that the following concerns be addressed regarding the EIS for the Kapaa Refuse Transfer Station:

1. Page 11-12, "City will incinerate all of the combustible refuse." What effect will this have on air quality, and will there be an odor or noise factor? If so, how will they be mitigated?
2. What traffic impact will the "25 expected trips per day" Page 11-14 create and what hours will these trucks travel?
3. Koolapoko is not slated to grow as fast as Eva and Central, so why a facility for this area and not where growth is occurring?
4. With a structure this size we are concerned about aesthetics and want to know what color the building will be painted and what are the landscaping plans?
5. Since this will be a large permanent and expandable operation, we would like to see an update of the leachate monitoring done. We suggest that this be done before the facility is in place and after operations have started. This monitoring is essential in providing protection to the Marsh and its endangered species.
6. Page 1v-1. We need further information on what the design of the facility will be so as to conform to the adjacent maintenance yard? How do you conform to a maintenance yard?

7. Page 1v-1. "On site drainage will be discharged through existing drainage system" What is that system? Will it have to be enlarged? Will the new drainage system affect the Marsh? Please show reasons why it would or would not.
8. The new facility will provide approximately 26 new jobs. What will those jobs be?
9. Please explain the extremely high cost of \$7 million and the rationale for \$47,000 for art?
10. We would like to know the exact dimensions of the building. We would appreciate receiving some type of architect's rendering in addition to specifics on height, width, and length.

Sincerely,
Annetta Kinnicutt
Annetta Kinnicutt, Chair
Environmental Committee

Donna Wong
Donna Wong, Member
Environmental Committee

RECEIVED AFTER DEADLINE DATE - NO RESPONSE NEEDED

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

430 SOUTH KING STREET
HONOLULU, HAWAII 96813



ALFRED J. THIEDE
DIRECTOR AND CHIEF ENGINEER

R 87-1242-4526F

December 17, 1987

Ms. Hope Miller
Public Affairs Committee Co-Chair
The Lani-Kailua Outdoor Circle
P.O. Box 261
Kailua, Hawaii 96734

Dear Ms. Miller:

Thank you for your review and comments dated November 6, 1987 on the Environmental Impact Statement Preparation Notice for the proposed Kapaa Refuse Transfer Station.

The concerns that you have expressed on behalf of the Lani-Kailua Outdoor Circle have been forwarded to the design consultants currently working on the design of the proposed Transfer Station structure. We have apprised them of the strong concerns expressed by your organization in terms of visual impacts on adjacent communities. There will be substantial effort made to design and landscape the new building to blend into the existing site to the extent practicable.

The increasing solid waste management problems that face Oahu make it necessary to deal with the refuse volume on a broad effort: incineration, recycling and landfilling. Recycling by itself will not solve Oahu's waste disposal problem. The City will be looking to assist expanding existing recycling programs as well as to develop other recycling programs. A consultant will be brought on board early next year to assist the City.

Very truly yours,

Alfred J. Thiede
ALFRED J. THIEDE
Director and Chief Engineer

87-1242
ENCL
Mr. Thiede

THE LANI-KAILUA OUTDOOR CIRCLE
P. O. BOX 261
KAILUA, HAWAII 96734

RECEIVED
NOV 10 2 47 PM '87

RECEIVED
NOV 12 9 21 AM '87
DIVISION OF REFUSE
COLLECTION & DISPOSAL

November 6, 1987

Department of Public Works
City & County of Honolulu
650 South King St.
Honolulu HI 96813

ATTENTION: Mr. Alfred J. Thiede,
Director and Chief Engineer

SUBJECT: Environmental Impact Statement Preparation
Notice for Kapaa Refuse Transfer Station

Dear Mr. Thiede:

Thank you for the opportunity to comment on the Environmental Impact Statement for a Kapaa Refuse Transfer Station.

Our Lani-Kailua Outdoor Circle members have for many years been supportive of the City's efforts to minimize the visual impacts of Windward refuse on our Kailua community, and have supported separation and recycling alternatives in order to cut down the vast bulk of the problem addressed by the Transfer Station. Seeing no change in policy in this direction, we are wholly opposed to establishment of a transfer station so close to Kawai Nui Marsh and in full view of much of Kailua. Expansion of the visual blight of the landfills, plus expanding the Corporation yard together with a Refuse Transfer Station really puts a very great burden on the Outdoor Circle's aim to keep Hawaii beautiful. Others will be addressing problems of traffic, health, culture, etc., and these are also our concerns.

We would support a plan to construct the facility back in Kapaa Valley if we could sense any change in direction toward long-term planning to solve our immediate solid waste problem -- other than the temporary and destructive solution which is with us now.

Yours truly,

Hope Miller

Hope Miller,
Public Affairs Committee Co-Chair

CC: The Outdoor Circle, Honolulu

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

850 SOUTH KING STREET
HONOLULU, HAWAII 96813



ALFRED J. THIEDE
DIRECTOR AND CHIEF ENGINEER

FRANK P. YAN
CLERK

871974

(808) 247-4311

45-090 Namoku Street, Kaneohe, Hawaii 96744

POHAI NANI
GOOD SAMARITAN KAUAHALE

*ENVU
1/13 Refuse*

November 20, 1987

Mr. Alfred J. Thiede
Director and Chief Engineer
Department of Public Works
City and County of Honolulu
650 King Street
Honolulu, Hawaii 96813

Dear Mr. Thiede:

RE: Environmental Impact Statement Preparation Notice for Kapaa Refuse Transfer Station.

The residents of Pohai Nani Good Samaritan Kauahale have authorized me to write this letter of support for the proposed project.

It is our sincere hope that the Refuse Transfer Station would solve these problems related to standard sanitary landfill operations. In addition, we hope that it will improve environmental and aesthetic conditions in the area which at the present time seem to be lacking.

Sincerely yours,

[Signature]
Gunter W. Brunk, M.P.A.
Administrator

GMB:VS

RECEIVED
Nov 23 2 06 PM '87
DIVISION OF REFUSE
COLLECTION & DISPOSAL

December 17, 1987

R 87-1242-4526F

Mr. Gunter W. Brunk, Administrator
Pohai Nani
Good Samaritan Kauahale
45-090 Namoku Street
Kaneohe, Hawaii 96744

Dear Mr. Brunk:

Subject: Environmental Impact Statement Preparation Notice for the Kapaa Refuse Transfer Station

Thank you for your comments dated November 20, 1987 on the Environmental Impact Statement Preparation Notice (EISP) for the proposed Kapaa Refuse Transfer Station. We appreciate your positive remarks and look forward to your review and comments on the draft EIS currently under preparation.

Thank you again for your comments and continuing concern.

Very truly yours,

[Signature]
ALFRED J. THIEDE
Director and Chief Engineer

RECEIVED
DEPT OF PUBLIC WORKS
NOV 23 9 08 AM '87

XII. ORGANIZATIONS AND AGENCIES CONSULTED DURING THE DRAFT EIS
CONSULTATION PERIOD

<u>Organization/Agencies</u>	<u>Date of Comment</u>	<u>Date Comment Received</u>	<u>Date of Response</u>
<u>State</u>			
Dept. of Accounting & General Services	01/05/87(?)	01/06/88	NRN
Dept. of Agriculture	02/04/88	02/10/88	NRN
Dept. of Defense	01/07/87(?)	01/08/88	NRN
Dept. of Education	-----	-----	-----
Dept. of Health	01/21/88	01/26/88	03/18/88
Dept. of Land & Natural Resources	02/01/88	02/03/88	03/18/88
Dept. of Business & Economic Development	-----	-----	-----
Housing Finance & Development Corporation	01/19/88	01/21/88	NRN
State Energy Office	-----	-----	-----
OEQC	-----	-----	-----
<u>University of Hawaii</u>			
Environmental Center	02/08/88	02/09/88	03/18/88
Water Resources Research Center	-----	-----	-----
<u>City & County</u>			
Board of Water Supply	12/31/87	01/04/88	NRN
Building Department	01/08/88	01/12/88	NRN
Dept. of Housing & Community Develop.	01/20/88	01/22/88	03/18/88
Dept. of General Planning	02/08/88	02/10/88	03/18/88
Dept. of Land Utilization	02/08/88	02/08/88	03/18/88
Dept. of Parks and Recreation	02/03/88	02/05/88	NRN
Dept. of Public Works	-----	-----	-----
Dept. of Transportation Services	02/10/88	02/10/88	NRN
Fire Dept.	01/04/88	01/05/88	03/18/88
Police Dept.	01/04/88	01/06/88	03/18/88

<u>Agency</u>	<u>Date of Comment</u>	<u>Date Comment Received</u>	<u>Date of Response</u>
<u>Federal</u>			
Army-DAFE (Facilities Eng.-USASCH)	-----	-----	-----
Navy	ND	02/03/88	NRN
Soil Conservation Service	01/27/88	02/01/88	NRN
U.S. Army Corps of Engineers	02/02/88	02/02/88	03/18/88
U.S. Coast Guard	-----	-----	-----
U.S. Fish & Wildlife Service	01/26/88	02/01/88	03/18/88
U.S. Geological Survey	-----	-----	-----
<u>Private Agencies</u>			
American Lung Association	-----	-----	-----
Congress of the Hawaiian People	-----	-----	-----
Hawaiian Electric Company	01/08/88	01/12/88	03/18/88
Hawaii's Thousand Friends	-----	-----	-----
Ameron	02/03/88	02/04/88	03/18/88
Bishop Museum	-----	-----	-----
Chamber of Commerce	-----	-----	-----
David W. Kahanu	-----	-----	-----
Kailua Neighborhood Board No. 31	02/08/88	02/09/88	03/18/88
Kaneohe Neighborhood Board No. 30	-----	-----	-----
Kaneohe Ranch	-----	-----	-----
Kawai Nui Heritage Foundation	-----	-----	-----
League of Women Voters	02/03/88	02/04/88	03/18/88
Life of the Land	-----	-----	-----
Pohai Nani	02/01/88	02/02/88	03/18/88
Private Refuse Collectors Association	-----	-----	-----
The Lani-Kailua Outdoor Circle	01/23/88	01/26/88	03/18/88
Trustees for the Michael C. Baldwin Trust	-----	-----	-----
John C. Baldwin Trust	-----	-----	-----
James C. Castle Trust	-----	-----	-----
James C. McIntosh Trust	-----	-----	-----

NRN: No Response Needed
 ND: No Date
 ?: Wrong Year

RECEIVED

JAN 6 10 49 AM '88

DIVISION OF REFUSE
COLLECTION & DISPOSAL

(P)2131.7

JAN 5 1988

Mr. John P. Whalen
Director
Department of Land Utilization
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Dear Mr. Whalen:

Subject: Kapa'a Refuse Transfer Station
Draft Environmental Impact Statement

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

Very truly yours,



TEUANE TOMINAGA
State Public Works Engineer

EM:jk

cc: Division of Refuse, Department of Public Works
City and County of Honolulu

NO RESPONSE NEEDED

Engineering Office

Mr. John P. Mahlen, Director
Department of Land Utilization
City & County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Mahlen:

Kapua Refuse Transfer Station
Kaliua, Koolauapoko, Oahu

Thank you for providing us the opportunity to review the above subject project.

We have no comments to offer at this time regarding this project.

Sincerely,

Jerry J. Matsuda
Major, Hawaii Air
National Guard
Contracting Officer

Enclosure

CC:
Division of Refuse

NO RESPONSE NEEDED

RECEIVED
JAN 8 3 17 PM '88
MAIL ROOM

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



ALFRED J. THIEDE
 DIRECTOR AND CHIEF ENGINEER

R 88-355

March 18, 1988

880553.

Rjune
 JOHN C. LITVAL, M.D.
 DIRECTOR OF HEALTH

FRANK F. PARR
 MAYOR

In reply, please refer to:
 EPW80



STATE OF HAWAII
 DEPARTMENT OF HEALTH
 P. O. BOX 329
 HONOLULU, HAWAII 96809

January 21, 1988

RECEIVED
 DEPT OF PUBLIC WORKS
 JAN 26 10 28 AM '88

JOHN WILLIAMS
 DIRECTOR OF WORKS

MEMORANDUM

To: Mr. John P. Whalen, Director
 Department of Land Utilization, City & County of Honolulu

From: Deputy Director for Environmental Health

Subject: Draft Environmental Impact Statement for Kapaa Refuse Transfer Station, Kailua, Koolauapoko, Oahu

Thank you for allowing us to review and comment on the subject EIS. We provide the following comments:

1. The proposed project must meet provisions of Administrative Rule Title 11, Chapter 26, Subchapter 2, Section 11-26-11, entitled "Files, Protection Against Breeding."
2. The Draft EIS does not address where the homeowners will be allowed to deposit their solid wastes when the Kapaa Landfill is closed. Will the transfer station be open to the public?

Bruce S. Anderson
 BRUCE S. ANDERSON, Ph.D.

cc: Div. of Refuse, DPW, C&C ✓

Subject: Draft Environmental Impact Statement for the Kapaa Refuse Transfer Station, Kailua, Koolauapoko, Oahu

Thank you for your comments dated January 21, 1988 on the above project. We respond as follows:

1. The operations of the proposed project will comply with Administrative Rule Title 11, Chapter 26, Subchapter 2, Section 11-26-11, entitled "Files, Protection Against Breeding."
2. The Transfer Station will provide the individual homeowner the opportunity to deposit their home generated refuse. The area designated "Public Service Area" shown on Figure 3, page III-5 is to be used by homeowners. The Kapaa Sanitary Landfill will remain open for non-combustible waste.

Thank you for your comments and continuing concern.

Sincerely,

Alfred J. Thiede
 ALFRED J. THIEDE
 Director and Chief Engineer

RECEIVED
 JAN 26 4 06 PM '88
 DIVISION OF REFUSE
 COLLECTION & DISPOSAL

FEB 1 1988

JOHN WHALEN
Director of Land

'86 FEB 3 PM 10 27



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

Lu 488-661

WILLIAM W. PATY, CHAIRPERSON
Board of Land and Natural Resources

LIBERT A. LANGOLF
SECRET

AGRICULTURE DEVELOPMENT
ADULTIC RESOURCES
CONSERVATION AND
ENVIRONMENTAL AFFAIRS
COMMUNITY AND ECONOMIC DEVELOPMENT
CONTRACTS AND PURCHASE
POLICY AND PLANNING
STATE AND FEDERAL RELATIONS
STATE AND LAND DEVELOPMENT

FEB 1 1988

DOC. NO.: 2557E
FILE NO.: 88-311

Honorable John P. Whalen, Director
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Whalen,

SUBJECT: Kapaa Refuse Transfer Station. TMK: 4-2-15: 5.
Thank you for the opportunity to review the draft EIS for the project cited above. We offer the following comments:

The final EIS should address, in greater detail, the onsite drainage designed to handle water run-off and wash-down water. Since water may contain hazardous material such as petroleum products, other chemicals and heavy metals, it should not be permitted to drain directly into Kawaiinui Marsh. Holding or settling ponds should be maintained and sludge or settled material removed from the site on a regular basis.

While there are no state park concerns directly affecting existing state parks, we are involved in the acquisition of land for the Kawaiinui Marsh Resource Management Plan. This plan includes the existing county land located along the Kapaa Quarry Road directly opposite the subject project. We note this major industrial facility will be located within 60 feet of the public road and future Kawaiinui Marsh wildlife area. Considering the subject facility is located on a 76 acre parcel, alternative locations within the existing parcel should be considered. A location further from the marsh and the public road along the edge of the marsh would be desirable.

Very truly yours,

WILLIAM W. PATY, Chairperson
Board of Land and Natural Resources

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

830 SOUTH KING STREET
HONOLULU, HAWAII 96813



FRANK P. FAH
DIRECTOR

ALFRED J. THORPE
DIRECTOR AND CHIEF ENGINEER

R 88-361

March 18, 1988

Mr. William W. Paty, Chairperson
Board of Land and Natural Resources
State of Hawaii
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Paty:

Subject: Draft Environmental Impact Statement (DEIS) for the Kapaa Refuse Transfer Station

We have received your department's comments dated February 1, 1988 and we respond as follows:

1. On-site surface runoff will be collected by a storm drain system and conveyed to the existing 48" culvert at the Kapaa Quarry Access Road for discharge into the marsh. Once the Transfer Station is constructed, and the area landscaped and grassed, on-site runoff will be relatively free of silt or debris. There will be no washdown of the refuse transfer facility. Trailer trucks will be washed on the outside only at the proposed washrack provided and the washwater will be directed to an oil separator structure before being discharged into the storm drainage system. The oil separator will keep the oil and other floatable pollutants from being discharged into the storm drainage system.

An evaporation/holding pond will not be employed in that there will be no washing of the refuse transfer facility or the inside of the transfer trailer compartments.

JOHN WHALEN
DIRECTOR



Joseph K. Conant
Executive Director

STATE OF HAWAII
Department of Business and Economic Development
Housing Finance and Development Corporation

P. O. BOX 17807
HONOLULU, HAWAII 96817

RE REPLY AFTER

THE

88:PLNG/221DT

January 19, 1988

RECEIVED
JAN 21 3 28 PM '88
DIVISION OF REFUSE
COLLECTION & DISPOSAL

Mr. John P. Whalen, Director
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Whalen:

Subject: Draft Environmental Impact Statement
(EIS) for the Proposed Kapaa Refuse
Transfer Station

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

Sincerely,

JOSEPH K. CONANT
Executive Director

cc: Division of Refuse
City & County of Honolulu

NO RESPONSE NEEDED

JAN 28 1988

RECEIVED

Feb 9 10 49 AM '88
UNIVERSITY OF HAWAII AT MANOA

DIVISION OF REFUSE
COLLECTION & DISPOSAL

Environmental Center
Crawford 317 • 2550 Campus Road
Honolulu, Hawaii 96822
Telephone (HAW) 948-7301

Mr. John P. Whalen, Director
Department of Land Utilization
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Whalen:

Draft Environmental Impact Statement
Kapaa Refuse Transfer Station
Kailua, Oahu

The above referenced document involves the construction of a refuse transfer station in the Kapaa Sanitary Landfill area. Our review of this document was prepared with the assistance of P. Bion Griffin, Anthropology; Yu-Si Fok, Henry Gee, and Edwin Murabayashi, Water Resources Research Center; Frank Peterson, Geology and Geophysics; and Jennifer Crummer, Environmental Center.

Dr. G. L. Dugan has made the recommendation that evaporation/holding ponds be implemented to decrease the chance of excess washdown water and other runoff reaching the Kawaihuli Marsh. On page VII-1, the EIS states "onsite drainage will be discharged through an existing 48-inch RCP pipe". How will this effluent be disposed of? Will the recommended evaporation/holding ponds be employed?

Though "there are no identified historic sites within the immediate vicinity", there is potential for historically significant subsurface features. If all construction is conducted on previously disturbed surfaces, as stated on page III-2 section B, it is unlikely that deposits will be found. However, should construction go beyond these confines subsurface testing should be undertaken.

We thank you for the opportunity to comment. We look forward to your consideration and response to our comments.

Sincerely,

John T. Harrison
Environmental Coordinator

AN EQUAL OPPORTUNITY EMPLOYER

Mr. John P. Whalen

-2-

February 8, 1988

cc: Division of Refuse, DPW
OEQC

L. S. Lau
P. Bion Griffin
Yu-Si Fok
Henry Gee
Edwin Murabayashi
Frank Peterson
Jennifer Crummer

February 8, 1988
RE:0484

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

480 SOUTH KING STREET
HONOLULU, HAWAII 96813



FORM P-214
1-1-82

ALFRED J. THEIDE
DIRECTOR AND CHIEF ENGINEER

Mr. John T. Harrison
Page 2

of the Transfer Station, work will be halted and the State Historic Preservation Office will be contacted to evaluate the finds. They will make the evaluation as to what mitigative measures will be required in such an event.

Thank you for your comments and continuing concern.

Sincerely,


ALFRED J. THEIDE
Director and Chief Engineer

R 88-353

March 18, 1988

Mr. John T. Harrison
Environmental Coordinator
Environmental Center
University of Hawaii at Manoa
Crawford 317
2550 Campus Road
Honolulu, Hawaii 96822

Dear Mr. Harrison:

Subject: Draft Environmental Impact Statement for the Kapaa Refuse Transfer Station

We have received your comments dated February 8, 1988 on the Draft Environmental Impact Statement (DEIS) prepared for the proposed Refuse Transfer Station, Kaliua Oahu. We respond to your comments as follows:

Surface Runoff/Drainage:

On-site surface runoff will be collected by a new storm drain system and conveyed to the existing 48" culvert at the Kapaa Quarry Access Road for discharge into the Marsh. Once the transfer station is constructed, and the area landscaped and grassed, on-site storm runoff will be relatively free of silt or debris. There will be no washdown of the refuse transfer facility. Trailer trucks will be washed on the outside only at the proposed washrack and the washwater will be directed to an oil separator structure before being discharged into the storm drainage system. The oil separator will keep oil and other floatable pollutants from being discharged into the storm drain system.

An evaporation/holding pond will not be employed in that there will be no washing of the refuse transfer facility or the inside of the transfer trailers.

Historical/Archaeological Sites:

In the event that archaeological sites are uncovered during the construction

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU



COPY

December 31, 1987

RECEIVED
JAN 4 4 58 PM '88
DIVISION OF REFUSE
COLLECTION & DISPOSAL

TO: JOHN P. WHALEN, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: ^{for} KAZU HAYASHIDA, MANAGER AND CHIEF ENGINEER
BOARD OF WATER SUPPLY

SUBJECT: STATE OF HAWAII OFFICE OF ENVIRONMENTAL QUALITY
CONTROL LETTER OF DECEMBER 22, 1987 ON THE DRAFT
ENVIRONMENTAL IMPACT STATEMENT FOR KAPAA REFUSE
TRANSFER STATION, THK: 4-2-15: 5

We do not have any additional comments to those already
appended in Section XI of the environmental document.

If you have any questions, please contact Lawrence Whang at
527-6138.

cc: Division of Refuse
(City Department of Public Works)

NO RESPONSE NEEDED

RECEIVED
DEPT OF PUBLIC WORKS

JAN 12 8 19 PM '08

TO _____

PB 88-15

January 8, 1908

TO: MR. JOHN P. WHALEN, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: HERBERT K. MURAKA
DIRECTOR AND BUILDING SUPERINTENDENT

SUBJECT: DRAFT EIS FOR KAPAA REFUSE TRANSFER STATION

We have reviewed the draft EIS for the proposed
Kapaa Refuse Transfer Station and have no comments.

Thank you for the opportunity to review the draft EIS.



HERBERT K. MURAKA
Director and Building Superintendent

TH: ly
cc: J. Harada
Div. of Refuse Collection &
Disposal

NO RESPONSE NEEDED

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
CITY AND COUNTY OF HONOLULU

830 SOUTH KING STREET
HONOLULU, HAWAII 96813
PHONE: 533-4181



FRANK F. FALK
DIRECTOR

MIKE MOON
DIRECTOR
ROBERT INTARATO
SENIOR DIRECTOR

FRANK F. FALK
DIRECTOR



830 SOUTH KING STREET
HONOLULU, HAWAII 96813

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

ALFRED J. THIEDE
DIRECTOR AND CHIEF ENGINEER

January 20, 1988

RECEIVED
JAN 22 8 47 AM '88
DIVISION OF REFUSE
COLLECTION & DISPOSAL

MEMORANDUM

TO: John P. Whalen, Director
Department of Land Utilization

FROM: Mike Moon

SUBJECT: Environmental Impact Statement
Kapaa Refuse Transfer Station

Thank you for the opportunity to review and comment on the proposed Refuse Transfer Station in Kapaa, Kaneohe, Oahu.

The proposed facilities, we understand, are designed to accommodate future service requirements to meet the needs of a growing population in the Koolauoko District. Also, the noise consultant report indicates that the background noise levels for the residential areas are estimated to be in the acceptable range. We have no objections to the proposed project.

Robert M. Whalen
for MIKE MOON, Director

cc: Department of Public Works,
Division of Refuse

JAN 28 1988

R 88-383

March 18, 1988

MEMORANDUM

TO: MICHAEL M.H. MOON, DIRECTOR
DEPARTMENT OF HOUSING & COMMUNITY DEVELOPMENT

FROM: ALFRED J. THIEDE, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT, KAPAA
REFUSE TRANSFER STATION

We have received your department's comments dated January 20, 1988 on the Draft Environmental Impact Statement for the Kapaa Transfer Station. We acknowledge your review and no objections position. Thank you for your continuing concern.

Alfred J. Thiede
ALFRED J. THIEDE
Director and Chief Engineer

DEPARTMENT OF GENERAL PLANNING
CITY AND COUNTY OF HONOLULU
450 SOUTH KING STREET
HONOLULU, HAWAII 96813

RECEIVED
Feb 0 10 23 AM '88
DIVISION OF REFUSE
COLLECTION AND DISPOSAL
FRANK F. FARR
DIRECTOR



DONALD A. CLEGG
Chief Planning Officer
GENERAL PLANNING
DEPARTMENT OF PUBLIC WORKS

VH/DGP 12/87-4382

February 8, 1988

MEMORANDUM

TO: JOHN P. WHALEN, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: DONALD A. CLEGG, CHIEF PLANNING OFFICER
DEPARTMENT OF GENERAL PLANNING

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS) FOR THE
KAPAA REFUSE TRANSFER STATION, 87/KP-1007(IC)

We note that the Department of Public Works (DPW) has adequately addressed the questions concerning drainage in the DEIS. We also note that with the addition of the data and maps regarding historic sites, relationship of the proposed project to cultural resources on the periphery of Kawaiunui Marsh, and "Impact on View Planes," this DEIS has adequately addressed the remaining questions that we previously raised. The proposed Kapaa Refuse Station conforms to the Koolauoko Development Plan Public Facilities Map where it is designated as a public facility for Solid Waste Management (SW/M) within the timeframe of six years.

Thank you for giving us the opportunity to comment on this matter.

Donald A. Clegg
DONALD A. CLEGG
Chief Planning Officer

cc: Department of Public Works, Division of Refuse

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



FRANK F. FARR
DIRECTOR

ALFRED J. THIEDE
DIRECTOR AND CHIEF ENGINEER

March 18, 1988

R 88-382

MEMORANDUM

TO: DONALD A. CLEGG, CHIEF PLANNING OFFICER
DEPARTMENT OF GENERAL PLANNING

FROM: ALFRED J. THIEDE, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS) FOR
THE KAPAA REFUSE TRANSFER STATION, 87/KP-1007(IC)

We have received your department's comments dated February 8, 1988 on the above project and acknowledge that the DEIS has adequately responded to the questions concerning drainage, historic sites, relationship of the proposed project to cultural resources on the periphery of Kawaiunui Marsh, and "Impact on View Planes." Further, we acknowledge the project conformance with the Development Plan Public Facilities Map.

Thank you for your comments and continuing concern.

Alfred J. Thiede
ALFRED J. THIEDE
Director and Chief Engineer

DEPARTMENT OF LAND UTILIZATION
CITY AND COUNTY OF HONOLULU
 830 SOUTH KING STREET, DEPT. OF PUBLIC WORKS
 HONOLULU, HAWAII 96813

880898
 JOHN P. WHALEN
 DIRECTOR
 11/1/88-159 (BMM)

FEB 8 3 58 PM '88



RECEIVED
 FEB 9 10 38 AM '88
 DIVISION OF REFUSE
 COLLECTION & DISPOSAL

ENVU
 Rymur

February 8, 1988

MEMORANDUM
TO: ALFRED THIEDE, DIRECTOR & CHIEF ENGINEER
 DEPARTMENT OF PUBLIC WORKS
FROM: JOHN P. WHALEN, DIRECTOR
SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)
 KAPAA REFUSE TRANSFER STATION
 DECEMBER 1987
 TAX MAP KEY: 4-2-15: 5

We have reviewed the DEIS and have the following comments:

- 1. Cost of Project and Time Schedule**
 Indicate cost of the project and projected time schedule for construction in the Summary Section.
- 2. Drainage and Impact on Hydrological Characteristics**
 - a.** A plan drawing showing the existing and proposed drainage pattern would be appropriate. Show the areas of sheet flow, the location of the culverts, and the location of the existing pipe and ditch intercepts. The DEIS should relate the volume of additional runoff created by the project which will be diverted into the marsh to the total runoff from the drainage basin that the project is located within.
 - b.** Show the location and describe the design of the evaporation/holding ponds which will be used to decrease the chance of excess washdown water reaching the marsh.
- 3. Relationship to Chapter 205A**
 The reference to the issuance of a State CZM "permit" is incorrect; the reference should be to the State's CZM federal consistency determination.

MEMORANDUM TO ALFRED THIEDE
 Page 2

Although no consistency determination from the State is required, the DEIS should discuss whether and by what means the project meets pertinent coastal zone management objectives and policies contained in Chapter 205A.

- 4. City Development Plan**
 - a.** Figure 5 is not the City Development Plan Public Facilities (DP-PF) map. A copy of the pertinent section of the DP-PF map is attached. (Attachment A)
 - b.** Consistency with the DP-PF map was not addressed adequately. A portion of the City Department of General Planning's (DGP) report to the Planning Commission for a DP-PF amendment for the adjacent Automotive Equipment Service (AES) Maintenance Yard addresses the question of the apparent conflict between the Park designation and the Solid Waste Management designation. (Attachment B) We suggest that DGP's explanation be incorporated into the DEIS.
- 5. Special Management Area (SMA) Map**
 Figure 6 should be replaced with an accurate SMA map (such as Attachment C).
- 6. Land Use Ordinance (LUO)**
 The 45-foot high building will require a waiver from the 25-foot height limit allowed in the R-5 Residential District. A basis for the waiver, presumably that the project is for a public use, should be noted.
- 7. View Analysis**
 The View Analysis is not adequate. The DEIS should note that the City's Coastal View Study identified the entire Kaimuki Marsh as an "important Open Space/Landscape." Figures 7, 8, 9, and 10 should be augmented to show the outline of the proposed project.
 Since a 45-foot high building is being proposed, it would be appropriate to show the location of proposed trees and landscaping. A detailed landscaping plan will be required for the SMA Permit application.
 The view analysis section does not evaluate the impact on views from Pahukini Heiau and Kapaa Quarry Road as DJJ had suggested in its consultation comments. Since Pahukini Heiau, which was placed on the National Historic Register of Historic Places in 1972, is located about one-fourth mile from the site, measures to screen the view of the proposed project from the heiau should be described.

Robert J. Rawson, Jr., Chairman
and Members of the Planning Commission
Page 10
January 4, 1988

Park Designation on the DP Public Facilities Map

The Development Plan Public Facilities Map (DPPFM) park designation on the subject parcel is for the expansion of Kawainui Regional Park. The rationale for this designation is that it would continue the string of planned parks around the marsh perimeter to help preserve and protect Kawai Nui Marsh.

There is also a refuse transfer station designation (SW/H) on the DPPFM at this site which currently houses the existing City maintenance yard. Council has previously indicated that the site is suitable for all three uses. They feel that alternative uses and alternative sites should be indicated on the DPPFM to provide option and greater flexibility in determining the final placement of the various public facilities. Council feels that the final resolution of issues of priority when conflicting policies are involved rests with them.

Several actions taken by Council recently are pertinent to the amendment being considered and should clarify Council's policy for park expansion in this area.

1. An amendment deleting the park designation from a 28-acre parcel adjacent to and north of the City's maintenance yard was adopted on May 20, 1985 (Ord. 85-49).
The same parcel was redesignated on the DP Land Use Map from Preservation to Industrial use to allow the development of the Kapaa Industrial Park (May 29, 1987, Ord. 87-66).
2. An amendment to place a solid waste management facility modification symbol on the DPPFM to allow construction of the Kapaa Refuse Transfer Station at the City-owned parcel in Kapaa Quarry was adopted on May 29, 1987 (Ord. 87-66).
3. A resolution approving the Special Management Area Use Permit for improvements to the Kapaa Maintenance Yard was adopted by City Council on December 16, 1986 (Resolution 86-385).

These actions indicate that Council has shifted its priorities from park to maintenance yard and refuse transfer station (industrial type uses) in this area.

Robert J. Rawson, Jr., Chairman
and Members of the Planning Commission
Page 11
January 4, 1988

The Department of Parks and Recreation offered no written comments on the proposed amendment. On further investigation, DPR has indicated that it has no interest in the subject property because it feels that the maintenance yard and the refuse transfer station are the more appropriate uses of that property.

DPR was, at one time, interested in the adjacent property as an active regional type facility which would have consisted of ball fields, playcourts, recreation buildings, etc. However, this 28-acre parcel has since been redesignated to industrial use (see #1 above).

Kapaa Refuse Transfer Station

The City will locate its Kapaa Refuse Transfer Station adjacent and to the north of the Kapaa Quarry Maintenance Yard. The transfer station will also be within the boundaries of the former quarrying operation on City owned land.

Like the maintenance yard, there will be little or no impacts on the water quality of the Marsh. And as with the maintenance yard, precautions will be taken to insure minimal impacts.

In actuality, the Refuse Transfer Station is a separate issue from the maintenance yard. A policy decision committing the City to the refuse transfer station was made with the adoption of Ordinance No. 87-66 (May 29, 1987) which placed a symbol for a solid waste management facility on the Development Plan Public Facilities Map for Koolaupoko at the site of the old quarry.

Project Location

Several alternative sites have been investigated, including those further back in Kapaa Valley. Improvements to the existing maintenance yard was determined to be the best alternative for the following reasons:

1. Owners of the alternative sites objected to City acquisition of their properties, which indicated possible long delays in acquiring those properties. The present maintenance yard is in need of immediate upgrading and renovation.

Robert J. Rawson, Jr., Chairman
and Members of the Planning Commission
Page 12
January 4, 1988

2. The acquisition of alternative sites would substantially increase the project costs considering that there is no land acquisition costs by remaining at the existing City-owned site. There is a tremendous additional cost advantage to remaining at the present location. Besides eliminating land acquisition costs, renovating the existing facility means less new construction, elimination of grading costs, utility installation costs and moving expenses.
3. It is not feasible to locate the maintenance yard at the alternative sites considered. For example, the Ameron/HCSB site is in the middle of their operating area and is needed for the viability of their long-term quarry operation. The suggested Kalaeo Landfill site lacks the space required for the siting of a maintenance yard.
4. The existing facility is situated on land that is marginal for other uses because it has already been extensively altered by the former quarrying operation and the present landfill activity.
5. The renovation of the existing maintenance yard is nearly 50% complete and nearly \$2 million has already been expended to upgrade the facility.

Resource Management Plan for Kawaiinui Marsh

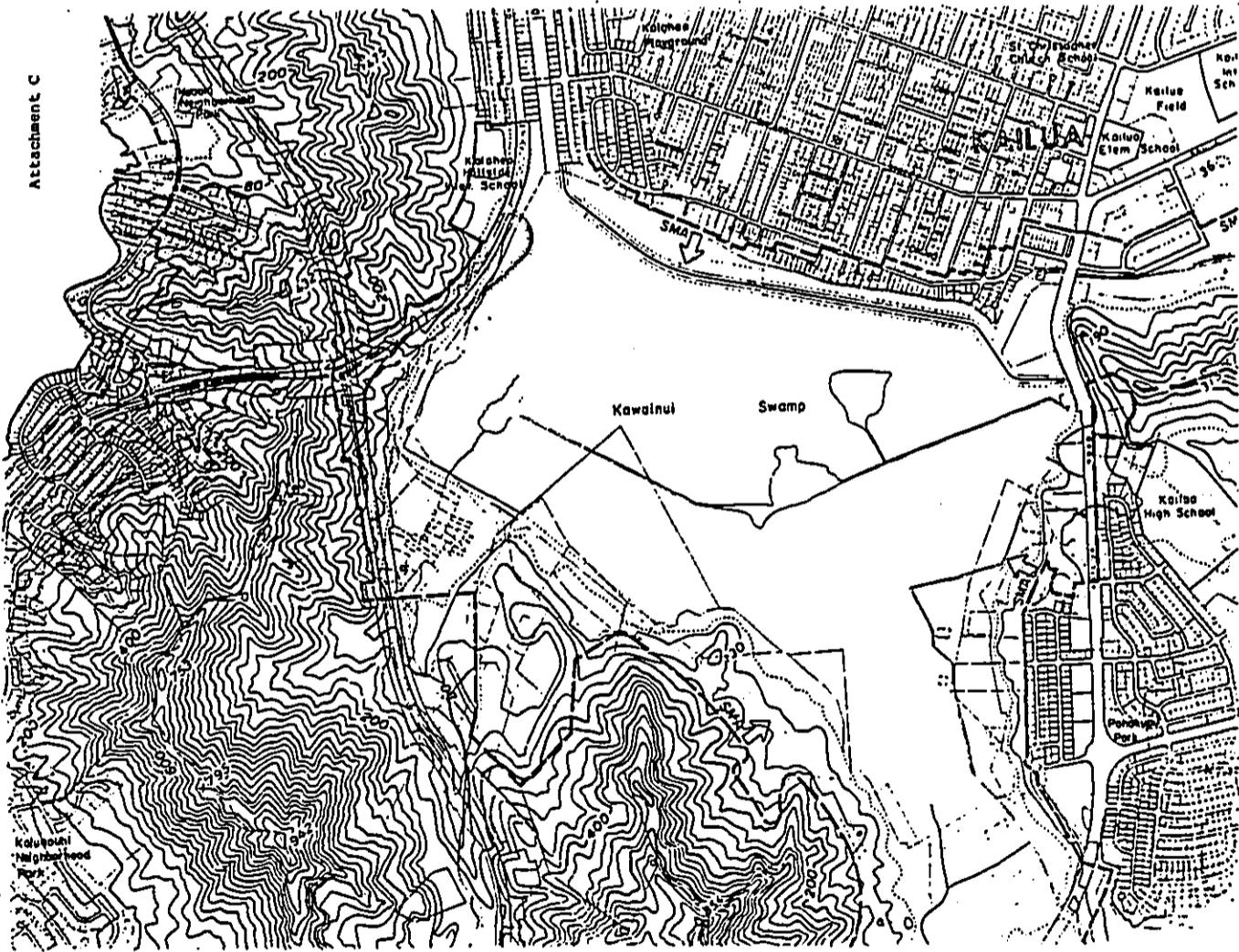
The State of Hawaii Department of Planning and Economic Development (DPED) locates the project site in the Secondary Area of its Kawaiinui Marsh Resource Management Plan. The Plan cites runoff and marsh water quality as the chief concerns in the Secondary Area.

These concerns have been addressed previously. (See "Impact on the Water Quality of Kawai Nui Marsh.")

Recommended actions of the management plan which potentially relate to the proposed project are:

Economic:

- A-1 Remove the auto dump from the primary area (Kailua Auto Wreckers).
- A-2 Relocate existing industrial uses situated on the marsh side of Quarry Road.



3. Relationship to Chapter 205A

The incorrect reference to the issuance of a State CZM "permit" will be corrected in the Final EIS. We do not see the need to discuss the project's ability to meet the objectives of the coastal zone management objectives if a consistency determination is not required.

4. City Development Plan

- a. We will replace the DP-PF map with the provided Attachment A (Figure 5).
- b. The DGP language as provided in Attachment E will be incorporated into the Final EIS.

5. Special Management Area (SMA) Map

Figure 6 will be replaced with the Attachment C map.

6. Land Use Ordinance (LUO)

A building height waiver application will be submitted after acceptance of the EIS.

7. View Analysis

New photographs with the proposed building superimposed have been included in the Final EIS (Figures 11, 12, 13, and 14).

A detailed landscape plan is being developed in conjunction with the architect/planning firm so that view aesthetics and cost effective use of funds budgeted can be maximized to the most effective use and purpose.

View plane impacts from the Pahukini Heiau and the Kapaa Quarry Road were not considered since the site cannot be seen from Pahukini Heiau and the landscaping around the Transfer Station structure which will consist of Monkeypod, Formosa Koa and Swamp Mahogany trees will more than adequately obscure the structure. Further, the grading of the site will also aid in shielding the structure from Kapaa Quarry Road as the building will be on a lower level than the entry road to the site.

8. Relation to Resource Management Plan for Kawainui Marsh

Incorporation of the language contained in Attachment D will be provided in the Final EIS.

9. Project Description

The type of park to be developed on the existing landfill has yet to

be determined. The Kapaa Landfill Environmental Impact Statement recommended the area above the transfer station be made into an arboretum. The Department of Parks and Recreation does not think a park is feasible on the landfill site and had recommended the Park designation deleted from the development plan in the 1987 annual amendment review. There were no community comments to the amendment although we did recommend the Park designation remain since the open areas have potential for active or passive park use. The transfer station would be located at the base of the landfill. Since the slope of the landfill would be too steep for active park activities, this area would serve as a buffer zone to the more usable area on top of the landfill. Because of the topography of the finish grade of the landfill, the transfer station would not be visible unless standing at the edge of the top of the landfill. Since transfer operations will be conducted indoors, there should not be any impacts from noise and odors.

9. Vehicular access to the Heiau and proposed park will be via the road system proposed for the transfer station, i.e. passing the new weigh station structure and up the grade to the connection to the existing landfill road.

A site plan that identifies the proposed facility in relation to the other Corporation Yard functions will be provided in the Final EIS.

10. All effort will be made in the Final EIS to meet the requirements of the DLU as the accepting authority.

Thank you for your comments and continuing concern.


ALFRED J. MEADE
Director and Chief Engineer

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU 81-0957

DEPT OF PUBLIC WORKS
150 SOUTH KING STREET
HONOLULU, HAWAII 96813

FEB 10 3 46 PM '88



FRANK P. FARR
DIRECTOR

TO

2/11
EJW
Ejw

JOHN E. HIRTEN
DIRECTOR

JOSEPH M. MAGALON, JR.
DEPUTY DIRECTOR

TEL. 0945
TE-10415

February 10, 1988

RECEIVED

FEB 11 7 57 AM '88
DIVISION OF REUSE
COLLECTION & DISPOSAL

MEMORANDUM

TO: JOHN P. WALEN, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: JOHN E. HIRTEN, DIRECTOR

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT FOR
KAPAA REPUSE TRANSFER STATION
TAK: 4-2-15: 5

The EIS for the subject project has adequately addressed our concerns. We do not have any additional comments at this time.


JOHN E. HIRTEN

cc: Department of Public Works

NO RESPONSE NEEDED

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU
1435 SOUTH KING STREET
HONOLULU, HAWAII 96813

FRANK F. TASH
MAIL ROOM



DOUGLAS G. GIBB
CHIEF
BARBARA SCARLETT
DEPUTY CHIEF

COMMUNICATIONS
CS-11X

RECEIVED
JAN 6 8 39 AM '88
DIVISION OF REFUSE
COLLECTION & DISPOSAL

January 4, 1980

TO: JOHN P. WHALEN, DIRECTOR
DEPARTMENT OF LAND UTILIZATION

FROM: DOUGLAS G. GIBB, CHIEF OF POLICE
HONOLULU POLICE DEPARTMENT

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT FOR KAPAA REFUSE
TRANSFER STATION LOCATED AT KAILUA, KOOLAUPOKO, OAHU

The proposed project should have little or no impact on the services provided by this department.

Thank you for the opportunity to review the Environmental Impact Statement.

Douglas G. Gibb
DOUGLAS G. GIBB
Chief of Police

cc: Division of Refuse

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU
630 SOUTH KING STREET
HONOLULU HAWAII 96813



FRANK F. TASH
MAIL ROOM

ALFRED J. THIEDE
DIRECTOR AND CHIEF ENGINEER

R 88-379

March 18, 1988

TO: POLICE CHIEF DOUGLAS G. GIBB
HONOLULU POLICE DEPARTMENT

FROM: ALFRED J. THIEDE, DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF PUBLIC WORKS

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT FOR KAPAA REFUSE
TRANSFER STATION LOCATED AT KAILUA, KOOLAUPOKO,
OAHU

We acknowledge your review and comments on the subject Draft EIS and accept that there will be little or no impact on the services of the Police Department.

Thank you for your comments and continuing concern.

Alfred J. Thiede
ALFRED J. THIEDE
Director and Chief Engineer

UNITED STATES
DEPARTMENT OF
AGRICULTURE

SOIL
CONSERVATION
SERVICE

P. O. BOX 5000A
HONOLULU, HAWAII
96850

January 27, 1988

Mr. John P. Whalen, Director
City and County of Honolulu
Department of Land Utilization
650 S. King Street
Honolulu, HI 96813

Dear Mr. Whalen:

Subject: Environmental Impact Statement (EIS),
Kapaa Refuse Transfer Station - Kailua, Oahu

We have no comments to offer at this time regarding the above subject matter. Thank you for the opportunity to review the document.

Sincerely,

Wm H Mann
RICHARD H. DUNCAN
State Conservationist

cc:

Division of Refuse, City and County of Honolulu, Department of
Public Works, 650 S. King Street, Honolulu, HI 96813

NO RESPONSE NEEDED

RECEIVED
FEB 1 1 33 PM '88
DIVISION OF REFUSE
COLLECTION & DISPOSAL

FEB 4 1988



United States Department of the Interior

FISH AND WILDLIFE SERVICE
300 AIA MOANA BOULEVARD
P.O. BOX 50147
HONOLULU, HAWAII 96850

20 FEB 1 PM 1 50
MAIL ROOM

RECEIVED REFERENCE
ES
Room 6307

611 489-622

We appreciate this opportunity to comment and offer our staff assistance regarding environmental contaminants and wildlife toxicology. Please contact John Ford of my staff at 541-2749 if you have specific questions regarding our comments.

Sincerely yours,

John L. Ford

Ernest Kosaka
Field Supervisor, Environmental Services
Pacific Islands Office

JAN 26 1988

Mr. John P. Whalen, Director
City and County of Honolulu
Department of Land Utilization
650 S. King Street
Honolulu, Hawaii 96813

Re: Draft Environmental Impact Statement for the Kapaa Refuse Transfer Station, Kailua, Oahu.

Dear Mr. Whalen:

We have completed our review of the subject document and offer the following comments for your consideration in preparation of the final impact statement.

In general, the document has not addressed all the specific concerns raised in our letter of October 23, 1987. Specifically, the document has not identified aquatic life within Kawaihi Marsh that lies adjacent to and may be affected by the proposed project. The document has also failed to adequately identify contaminants which may be present in leachate and stormwater runoff from the landfill and the proposed site. We acknowledge that design measures to contain accidental spills of hazardous materials is discussed in the draft statement.

Although the previous monitoring studies at the landfill have indicated that no leachate is present in the marsh (based largely on low chemical oxygen demand levels), we do not believe that this and other similar studies are definitive. Specifically, we suggest that levels of hydrocarbons, organochlorines and other pesticide residues, polychlorinated biphenyls and tetrachloroethylene/vinyl chloride be determined both in marsh soils and in the tissues of aquatic invertebrates and fishes living adjacent to the landfill. The results of these studies would greatly enhance the value of the final environmental impact statement for the proposed action.

cc: DLNR
DOH



Save Energy and You Serve America!

Hawaiian Electric Company, Inc. • PO Box 2750 • Honolulu, HI 96840-0001

ENV 2-1
JA/G



Brenner Munger, Ph.D., PE.
Manager
Environmental Department
(808) 548 6560

January 8, 1988

Mr. John P. Whalen, Director
City and County of Honolulu
Department of Land Utilization
650 South King Street
Honolulu, HI 96813

Dear Mr. Whalen:

Subject: Draft Environmental Impact Statement for Kapaa Refuse Transfer Station

We have reviewed the above document and have the following comment:

1. HECO has no existing or planned transmission facilities in the area of this project.

Sincerely,

Brenner Munger

cc: Division of Refuse

An HEI Company

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

630 SOUTH KING STREET
HONOLULU, HAWAII 96813



FRANK P. WASH
DIRECTOR

ALFRED J. HIEDE
DIRECTOR AND CHIEF ENGINEER

R 88-381

March 18, 1988

Dr. Brenner Munger, Manager
Environmental Department
Hawaiian Electric Company, Inc.
P.O. Box 2750
Honolulu, Hawaii 96840-0001

Dear Mr. Munger:

Subject: Draft Environmental Impact Statement for the Kapaa Refuse Transfer Station

We have received your comments dated January 8, 1988 on the Draft Environmental Impact Statement (DEIS) prepared for the Kapaa Quarry Refuse Transfer Station. Your advice that HECO has no existing or planned transmission facilities in the area of the project is acknowledged.

Thank you for your continuing interest.

Sincerely,

Alfred J. Hiede
ALFRED J. HIEDE
Director and Chief Engineer

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

590 SOUTH KING STREET
HONOLULU, HAWAII 96813



FRANKIE PALM
MAIL ROOM

ALFRED J. TRIEDE
DIRECTOR AND CHIEF ENGINEER

March 18, 1988

R 88-354

Mr. E. H. Curtis
Vice President, Engineering
Ameron HC&D
P.O. Box 29968
Honolulu, Hawaii 96820

Dear Mr. Curtis:

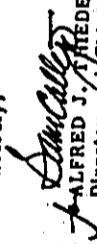
Subject: Draft Environmental Impact Statement for Kapaa Refuse Transfer Station

We have received your comments dated February 3, 1988 on the Draft Environmental Impact Statement (DEIS) prepared for the proposed Kapaa Refuse Transfer Station. We have reviewed your comments and respond as follows:

1. We regret the error of not deleting the reference to flow of process water in Kapaa Stream; this will be corrected in the Final EIS.
2. The proposed recommendation as stated by the Traffic consultant in his study is endorsed by the Department of Public Works as a mitigative measure to eliminate a potentially hazardous traffic situation at the skewed intersection of Kapaa Quarry Road. This recommendation will not be deleted because of budget constraints.
3. Special Management Area - We will delete the reference to the inclusion of the Kapaa Quarry in the Special Management Area. We regret the error and will correct this in the Final EIS.
4. Similar to the above, Figure 6 will be corrected.

Thank you for your comments. We regret any inconvenience that may have occurred.

Sincerely,


ALFRED J. TRIEDE
Director and Chief Engineer

KAILUA NEIGHBORHOOD BOARD NO. 31
478 KAILUA SATELLITE CITY MALL
629-A Kailua Road
Kailua, HI 96734



FEB 9 1988

44 788-803

Mr. John Whalen
February 8, 1988
Page 2

February 8, 1988

Mr. John Whalen
Director
Department of Land Utilization
650 South King Street
Honolulu, HI 96813

Re: Kapaa Refuse Transfer Station
Kailua, Oahu

Dear Mr. Whalen:

Thank you for giving the Kailua Neighborhood Board the opportunity to respond. The Board's concerns and questions are as follows:

Page I-2

Please explain the design, color, etc. that will be used to make the structure "aesthetically compatible with the existing area."

Page I-3

Please define and give source for the standard measures that will be implemented to mitigate construction related impacts.

Page V-2

Please define statement "some treated process water from the existing quarry." What is the "treated process water," chemical make up, etc., and what is the frequency of the runoff and what monitoring is done or is proposed?

Page V-9

There are no available long-term air pollutant measures for the project site and its immediate area." Please explain why pollutant measures haven't been done. If any are planned for the future and if so, when?

Page V-10

Given the carbon monoxide information stated on this page, we request that studies and readings be done for Kapaa

Quarry Road, Kalaniana'ole Highway and vicinity. The wording "most likely" is too vague. Public health is at stake.

Page VII-7

Figure 8 gives a distorted view of the proposed site. The project area is very visible from Kailua Road.

Page VII-1

We request that current studies be done on surface water and leachate quality.

Page VII-2

Please quote us the source and figures that qualify the statement "facilities are designed to accommodate future expanded services requirements to meet the needs of a growing population in the Koolau-poko District." According to the general plan, Koolau-poko is not slated for vigorous growth.

Page VII-4

The second paragraph appears to be an incorrect statement since Kapaa IV, a new landfill, is proposed for the adjacent area.

Page IX-1

Please explain the method used in determining the last sentence on this page.

Traffic Impact Assessment

Page 1

Please explain how many and what hours of the day will the trailer trucks be on the streets and highways in a 24-hour period.

Page 5

We do not feel that the reality and impact of closing Quarry Road to the public has been fully examined. What and who will define and monitor local traffic? How will the public gain access to the Pahukini Heiau, the model airplane park and the future park at Kapaa landfill? Also, no mention was made of traffic going from Kalaniana'ole Highway to Saddle Road and vice versa and its diverted impact.

Mr. John Whalen
February 8, 1988
Page 3

Air Quality Study

Page 9

Please explain route and times of day that the "average vehicle spuds" will be 1 mph and 15 mph? What vehicles are referred to?

Appendix D

Page 6

In light of the recent flood, we feel that the last sentence, i.e., 100 year flood needs to be re-evaluated and updated and that data quoted in this section is out dated and more current studies should be quoted or conducted.

A project of this magnitude, impact and permanence requires a very thorough review before any approval is given. For these reasons, the Kailua Neighborhood Board approved the following motion at its February 4, 1988 meeting:

"That a letter be written from the Board to John Whalen, Director of Department of Land Utilization, stating that until our concerns and questions can be addressed, the entire project be put on hold and returned in a new updated ESS."

This correspondence is the Board's letter that is referred to in the above motion.

Thank you.

Sincerely,



Ed Bybee
Chairperson

EB:cm

cc Division of Refuse,
Department of Public Works
Kauai Nui Heritage Foundation
Senator Clayton Hee
Council Member Dennis O'Connor
Council Member David Kahanu

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

490 SOUTH KING STREET
HONOLULU, HAWAII 96813



FRANK F. FAHI
MAYOR

ALFRED J. THORDE
DIRECTOR OF PUBLIC WORKS

March 18, 1988

R 88-358

Mr. Ed Bybee, Chairperson
Kailua Neighborhood Board No. 31
c/o Kailua Satellite City Hall
629-A Kailua Road
Kailua, Hawaii 96734

Dear Mr. Bybee:

Subject: Draft Environmental Impact Statement (DEIS) for the Kapaa Refuse Transfer Station

We have received the comments from your Board No. 31 dated February 8, 1988 and we respond as follows:

Page I-2: "Aesthetically compatible with the existing area" is intended as using colors and exterior materials that will blend in with the existing terrain and vegetation. We refer you to pages VII-9 and 10 for a more graphic description of the proposed colors to be used.

Page I-3: Construction contracts include compliance requirements by the general contractor which make it mandatory that all State Department of Health Rules & Regulations applicable to Noise, Air Quality, and Surface Runoff be adhered to. Further, the City also imposes their own requirements for grading and mass excavation quantities.

Page V-2: The reference to treated process water is no longer applicable and its inclusion was the error of the EIS preparer. This will be rectified in the Final EIS; we regret any misunderstanding that occurred due to this error.

Page V-9: Discussions via telecon March 8, 1988 with the State Department of Health, Environmental Health Division provide the following information:

1. The State Department of Health Air Monitoring network is currently financed by federal dollars and siting of these air monitoring stations are limited to areas where permitted stationary sources of air pollution will have an impact on the ambient air quality.
2. Kailua is a residential community and has no major stationary sources of air pollution.

Mr. Ed Bybee
Page 2

3. For this reason, it does not have an air monitoring site.

Page V-10: Paragraph 2 on this page (V-10) refer to a traffic condition on Kalanianaʻole Highway at the intersection of Kapaa Quarry Road; the third paragraph starts with "Present concentrations of other regulated pollutants within the project area are probably quite low." Our project will have little air impact at this location during the time of the heavy morning rush hour when the concentration of carbon monoxide is greatest. The Board would be best served by seeking their studies and readings to be done by the State Department of Transportation who administers the State Highway in question, Kalanianaʻole Highway.

Page VII-7: We would not disagree that the view from Figure 8 is not visible from Kailua Road; our position is that with the specific attention paid to the details of landscaping and color selection, the transfer station will be less visible than the structures on the Corporation Yard at the present time.

Page VII-1: In view of the recommendations from the retained civil engineering consultants to manage truck washwater and other sources of runoff water, it is our position that studies to analyze surface water is not necessary. There is no leachate that results from the development of this project.

Page VII-2: The statement is misleading and will be corrected to read "should the facility need to be increased in capacity, the transfer station will be designed to accommodate future expansion." We did not intend to imply there will be "vigorous growth" on the Koolau-poko District.

Page VII-4: The statement on page VII-4 is correct. The proposed landfill is expected to handle only the noncombustible refuse and other refuse only when H-POWER is shut down. Since traffic should decrease considerably, the Honolulu private trucks will no longer be coming to the windward area.

Page IX-1: The "method" used in determining this sentence is the design criteria developed by the project architects who also are providing the detailed landscaping, color/materials selection for the exterior of the building, and department's responsiveness to concerns such as those expressed by your organization.

Traffic Impact Assessment

Page 1: About 7 transfer trailers are planned to be used daily for this development. Transfer trailers would generally be on the road between 8:30 a.m. and 4 p.m. Approximately 3-4 trips per transfer trailer per day has been estimated.

Page 5: The Kapaa Quarry Access Road will not be closed to public traffic. Only the skewed connection to the Quarry Access Road at the Mokapu end of the Kapaa Sanitary Landfill property will be closed; a new driveway connection to the Quarry Access Road is proposed (see attached site plan).

Mr. Ed Bybee
Page 3

Air Quality Study

Page 9: We refer your attention to the preceding page 8 which describes in paragraph 3, the traffic conditions south of the Kapaa Quarry Access Road and Kalanianaʻole Highway, at the traffic light intersection. The resulting queuing at the peak hour of 6:15 to 7:15 a.m. results in queue of some 60 meters and the resulting 1 mph upstream from the red signals, and 15 mph downstream from signals or turns.

Appendix D/Page 6: Your concern about reevaluating the 100-year criteria is well taken. The occurrence of the recent flood will ultimately have a bearing on design rainfall intensity as the data is analyzed and incorporated into applicable design standards. It is difficult to predict how the new data will affect existing storm frequency values; the current estimated rainfall as cited in Appendix D may or may not be exceeded by the inclusion of the recent data, depending on how the frequency distribution was established. The process of analysis, interpretation and incorporation of changes to current criteria will invariably require time.

For the proposed project, the required design frequency is 10-years, which conforms with the "Storm Drainage Standards," City and County of Honolulu. The 10-year design requirement is a standard basis of providing typical on-site drainage features in consideration of relative frequency of rainfall and economics. Untypical design requirements as may be found in off-site improvements may entail considering a 100-year storm; however, there are no such requirements in this project.

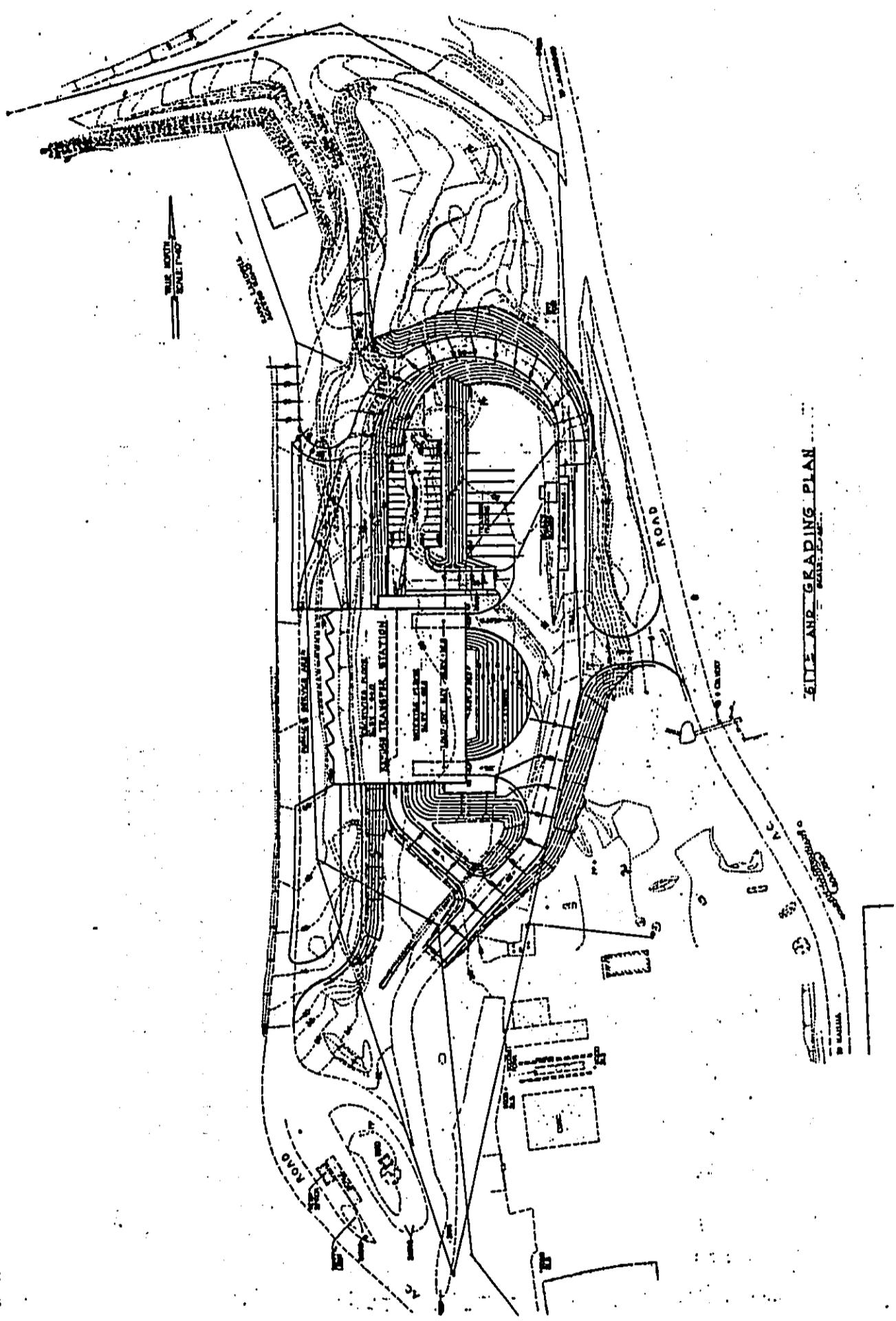
We trust that we have adequately responded to your Board's concerns and we thank you for your continuing concern.

Sincerely,


ALFRED J. HIEDE
Director and Chief Engineer

Attachment

Figure 3
Site Plan



Alpha -
None is the
copy of our review
of the draft EIS
as you requested -

RECEIVED
DEPT OF PUBLIC WORKS

FEB 11 10 09 AM '88

TO

880821

EW

Response

February 3, 1988

Department of Land Utilization
City and County of Honolulu
650 S. King Street, 7th floor
Honolulu, HI 96813

RE: Environmental Impact Statement for the proposed Kapaa Refuse
Transfer Station, Kailua, Oahu.

We have reviewed the December 1987 DRAFT ENVIRONMENTAL
IMPACT STATEMENT FOR THE KAPAA REFUSE TRANSFER STATION, with the
following comments:

GENERAL COMMENTS:

1. "Environmental Aspects of Potential Surface Water Runoff and
Leachate Migration from the Proposed Kapaa Refuse Processing and
Transfer Station, Windward Oahu, Hawaii," by Gordon Dugan Phd,
dated August, 1987.

We feel that in light of the most recent flood disaster
involving the Kawaiinui Marsh and its surrounding environs, that
the data including: WARC Water movement and Quality Studies,
Biological Aspects, and even the reference material can not be
gathered as valid with dates and figures used therein from data
gathered for the most part from the years 1969-1980. It is now
obvious that the "100 year, 24 Hr. frequency-duration storm for
the landfill area" stated as "13 in." is invalid as of the
January 1988 storm-flood occurrence in the marsh area. We feel
that an update on the possible generation and movement of run-off
from the facility, needs to be done now. The study done in 1983
was the latest data we have to determine if there has in fact
been any change in the potential surface water run-off and
leachate migration to Kawaiinui Marsh. Dr. Bruce Anderson of the
Department of Health stated at the Kailua Neighborhood Board
meeting January 1988, "The marsh waters have not been tested for
years."

2. There seems to be no mention of the cumulative impact of
expansion of the City's Kapaa Quarry Maintenance Yard and the Kapaa
Refuse Transfer station within the context of the EIS. We see no
discussion of appropriate measure to contain and or decontaminate
runoff BEFORE it is discharged into the Marsh. Consideration
should also be given in the design of the proposed facility to
contain accidental spills of toxic and hazardous materials at the
waste transfer station.

3. Koolaupoko is not slated to grow as fast as Ewa and Central
Oahu, so why is the Kapaa Refuse Transfer Station planned for
this area instead of where growth is occurring and expected to
more greatly occur in the near future?

4. PAGE 1-3 (last paragraph) states: "The Keeshi Refuse Transfer
Station alternative was rejected because it would require
extensive Koolau crossing by collection vehicles which would
adversely impact traffic. We need data to back this statement up.
And what is the correlation with the statement from VII-f page
VII-3 "Impact on traffic" which states "The load reduction of 70x
by tonnage will be a result of private collectors transporting
their refuse directly to H-Power plant or Leeward Landfills?"

5. P III-8 Facility Operations. We are concerned that a drop off
point for recycled items should be in place for the transfer
station from DAY ONE! H-Power can not exist according to the
experts without recycling. Recycling should also be addressed
under page VII-6 Paragraph 1. "The functions of the Refuse
Transfer Station."

6. VIII-1: THE RELATIONSHIP BETWEEN LOCAL SHORT TERM USES OF MAN'S
ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG TERM
PRODUCTIVITY AND IRREVERSIBLE/IRRETRIEVABLE COMMITMENTS OF
RESOURCES.

We feel a great concern about the statement, "the development
will not be highly visible to surrounding residents but will be
visually integrated with the surrounding areas." The proposed
project will be an enclosed concrete and metal frame structure of
approximately 33,000 square feet, and its location is so situated
that all living or traveling along the edge of the marsh will be
able to see and identify this man-made industrial structure which
is larger than a football field!

The EIS statement, "commitment of land for these purposes will
likely foreclose certain future use options of the land," is
worthy enough to want us to really think and consider its valued
use before build this project on this site.

We have noted strong opinions voiced by residents regarding the
potential visual impacts this project could have on adjacent
communities and viewing positions. We see that according to the
EIS great consideration has been taken to keep the structure low
and painted and roofed in "greens and grays" to blend more
effectively with the adjacent site." We appreciate this effort
and consideration.

We would like to see a feasibility study done on locating the
recycling-transfer station and H-Power functions all at one over
all site on this island. We feel the minimum land loss by this
combined approach justifies the longer distance to haul trash.
Economic offsets are also intrinsic to such a combination of
functions.

We would like to see it stipulated in the long-term usage plan
that this site will be restored to its original site conditions
and replanted eventually.

DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

430 SOUTH KING STREET
HONOLULU, HAWAII 96813



FRANK F. FAH
DIRECTOR

ALFRED J. THODE
DIRECTOR AND CHIEF ENGINEER

The Kawaiinui Heritage Foundation letter speaks of parks both at Kapaa Transfer and at the Kalaeo Landfill. Parks are not addressed by the Public Works department nor are they addressed in this EIS Draft.

IV ALTERNATIVE CONSIDERED

We would like to see back-up projections for tonnage and vehicle trips involved in trans-Koolau operation for Kaeahi Transfer Station both with and without the Proposed Kapaa Transfer Station.

V-9 AMBIENT AIR QUALITY

Since existing level of particulates within the transfer building and carbon monoxide levels immediately adjoining the transfer building are estimated to be quite high, what environmental protection plans and practices have been incorporated into the project to protect the employees thus exposed while working at the Transfer Station?

CONCLUSION:

We feel that without more up-to-date data of the proposed facilities impact on the marsh, and without more satisfactory answers to alternate locations we are unable to complete our evaluation of this EIS draft at this time. We will anxiously await more information, and will respond promptly.

Most sincerely,

Chance & Betty Wightman

Chance and Betty Wightman
League of Women Voters
Planning Committee

R 88-360

March 18, 1988

Chance and Betty Wightman
League of Women Voters
49 S. Hotel, Room 314
Honolulu, Hawaii 96813

Dear Mr. & Mrs. Wightman:

Subject: Draft Environmental Impact Statement for the Kapaa Refuse Transfer Station

We have received your organization's comments dated February 3, 1988 on the Draft Environmental Impact Statement (DEIS) prepared for the proposed Kapaa Refuse Transfer Station. We have reviewed the comments and respond as follows:

1. Since the transfer operations will be in the enclosed building, contaminants will not be present in storm runoff.

In the unlikely event of a spill within the enclosed building, sand or clay material would be placed on the spill and the host material is picked up for proper disposal. Although toxic or hazardous materials are not accepted at the transfer station, the facility will be designed to contain any accidental spills of hazardous waste.

Although the last study was done by the University of Hawaii with Resource Research Center in 1983, the study also set up a program to continue testing the marsh waters. Since 1982, the City has continued testing on a monthly basis with the results sent to the State Department of Health.

2. The subject of cumulative impacts due to the expansion of the City's Kapaa Quarry Maintenance Yard was described and discussed in a Negative Declaration document prepared by KFC Airport, Inc. in April, 1985. This document was prepared for the Building Department, City and County of Honolulu and describes "the Master Plan study undertaken to develop a Master Plan for the Kapaa Quarry Maintenance Yard, Koolapoko." The study described in the Scope of the Environmental Assessment, "Other planned activity within the site includes the future

construction of a refuse processing and transfer station. While this activity has no direct relationship to, and is not predicated on, the proposed improvements addressed herein for the Kapaa Maintenance Yard, it is considered and addressed in overview due to the potential for cumulative impacts (emphasis added). A separate environmental assessment will be prepared by the City and County of Honolulu, Department of Public Works, to specifically address the planned refuse processing and transfer station.

3. The single most compelling reason why a refuse transfer station is being proposed is that sanitary landfill sites are finite in their longevity. The Kapaa Refuse Transfer Station is to transfer refuse from the windward side to the ultimate disposal site, the H-Power Plant at Campbell Industrial Park, extending the life of the windward landfill.

4. The Keehi Refuse Transfer Station alternative was rejected not only because of the traffic impact but because the capacity of the Keehi Refuse Transfer Station would not be able to hold the load. The refuse transfer station would reduce traffic from the windward side of the island to Honolulu. Rather than having the City collection trucks and private haulers from the windward side of the island drive into Honolulu, the loads from several collection trucks can be consolidated into our transfer trailer. The loads from three City collection trucks can be hauled by one transfer trailer.

There is no correlation to the statement on page VII-3. That statement refers to refuse from Honolulu to the windward side of the island. Presently, the majority of Honolulu's private collectors' dispose their refuse at the Kapaa/Kalaheo Sanitary Landfill. When H-POWER is constructed, this refuse will be disposed of at H-POWER.

5. The station is designed so that recycling can begin immediately. The area designated "Public Service Area" shown on Figure 3 page III-5 is to be used by homeowners. Homeowners will go to this area to unload their refuse into bins. Separate bins can also be set aside for recycling.

6. Figures 11, 12, 13 and 14 provide conceptual view of the transfer station from selected northerly view points. Although to a certain extent, the structure will be visible, the visual impact will be lessened by the project's landscaping plan. Monkeypod, Formosa Koa and Swamp Mahogany trees will shield adequate portions of the structure and induce a breakup of the building image.

A combined transfer station/H-POWER Site idea will not be necessary since there will be no need to transfer refuse once at the H-POWER site. If, however, direct delivery to H-POWER by windward collection vehicles and residents appears more satisfactory to the public, we urge further consideration of key factors supporting the Kapaa Transfer Station Site.

Bearing in mind that windward communities are situated considerably away from H-POWER, the significant travel time to H-POWER, added truck and resident traffic, and associated higher costs of operation become primary considerations and key factors supporting the Kapaa Site.

The issue of the parks is addressed in a Department of General Planning report to the Planning Commission. A portion is attached as Attachment A.

IV. Alternative Considered

As stated earlier, the capacity of the Keehi Refuse Transfer Station would not be able to handle the additional load from the windward side of the island. Approximately 850 tons per day from the Honolulu private haulers will be diverted from the windward landfill to H-POWER. Should half of the private haulers use the Keehi Refuse Transfer Station, the facility will reach its capacity.

V.9 Ambient Air Quality

There appears to be a misunderstanding of the statements made by the air quality consultant on pp. V-9, 10. Barry D. Root states on pp. V-10, that the current high levels of carbon monoxide occur at the intersection of Kapaa Quarry Road and Kalaniana'ole Highway, and the existing Kapaa Landfill, not the proposed site. Root further states on pp. VII-4, "Once construction is completed, the proposed project will not in itself constitute a major direct source of air pollutants." Finally, Root concludes the section on pp. VII-4 that the decrease in truck traffic due to the transfer station function can result in an ameliorative effect on carbon monoxide levels at the intersection of Kapaa Quarry Road and Kalaniana'ole Highway.

Conclusion

We feel that the Draft EIS adequately describes the functions of the proposed project and the planned mitigative measures will insure that minimum impacts to the Kawaihuli Marsh will occur.

Thank you for your comments and continuing concern.

Sincerely,


ALFRED J. RIEHE
Director and Chief Engineer

Attachment

Robert J. Rawson, Jr., Chairman
and Members of the Planning Commission
Page 10
January 4, 1988

Park Designation on the DP Public Facilities Map

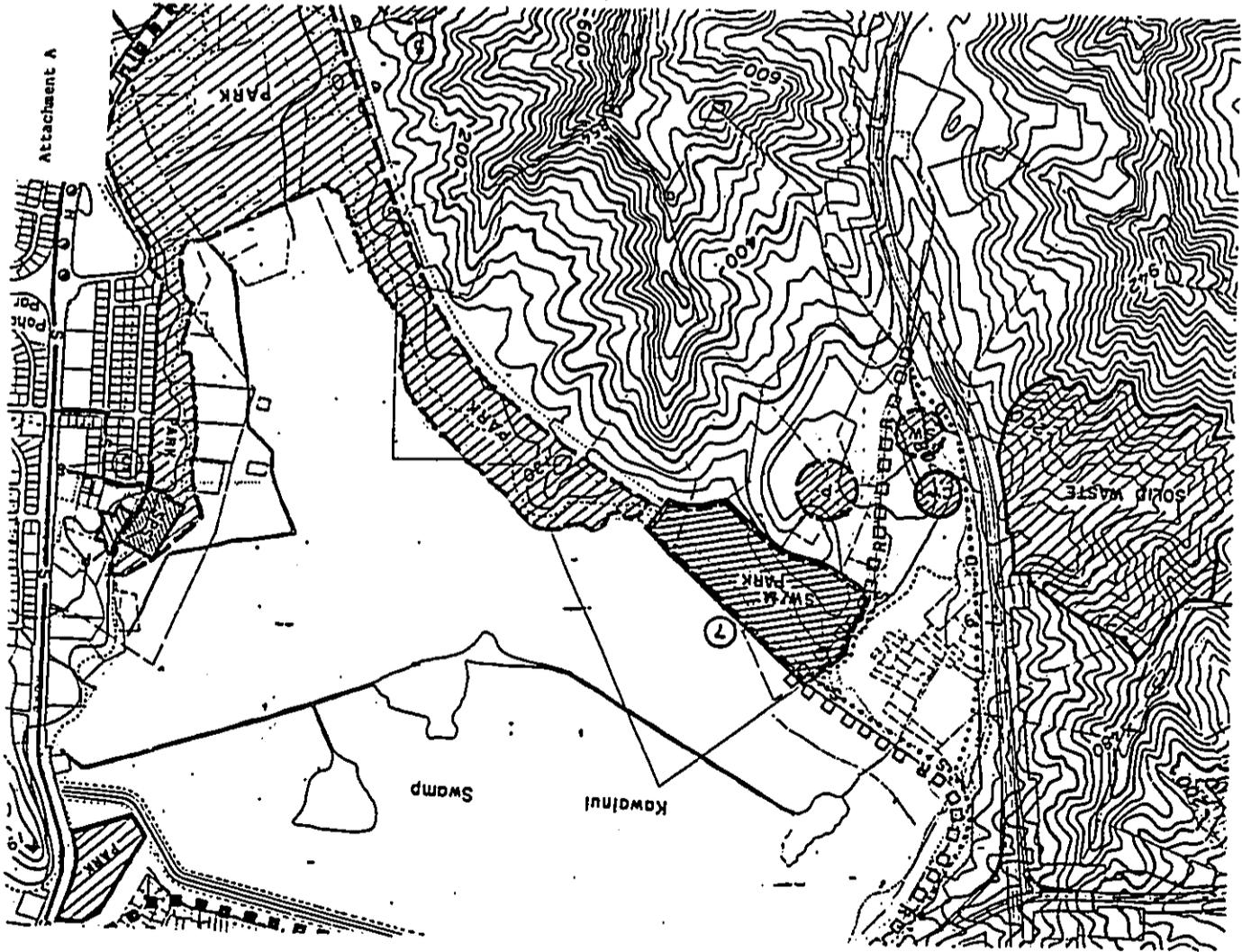
The Development Plan Public Facilities Map (DPPFM) park designation on the subject parcel is for the expansion of Kawainui Regional Park. The rationale for this designation is that it would continue the string of planned parks around the marsh perimeter to help preserve and protect Kawai Nui Marsh.

There is also a refuse transfer station designation (SH/M) on the DPPFM at this site which currently houses the existing City maintenance yard. Council has previously indicated that the site is suitable for all three uses. They feel that alternative uses and alternative sites should be indicated on the DPPFM to provide option and greater flexibility in determining the final placement of the various public facilities. Council feels that the final resolution of issues of priority when conflicting policies are involved rests with them.

Several actions taken by Council recently are pertinent to the amendment being considered and should clarify Council's policy for park expansion in this area.

1. An amendment deleting the park designation from a 28-acre parcel adjacent to and north of the City's maintenance yard was adopted on May 20, 1985 (Ord. 85-49).
The same parcel was redesignated on the DP Land Use Map from Preservation to Industrial use to allow the development of the Kapaa Industrial Park (May 29, 1987, Ord. 87-66).
2. An amendment to place a solid waste management facility modification symbol on the DPPFM to allow construction of the Kapaa Refuse Transfer Station at the City-owned parcel in Kapaa Quarry was adopted on May 29, 1987 (Ord. 87-66).
3. A resolution approving the Special Management Area Use Permit for improvements to the Kapaa Maintenance Yard was adopted by City Council on December 16, 1986 (Resolution 86-385).

These actions indicate that Council has shifted its priorities from park to maintenance yard and refuse transfer station (industrial type uses) in this area.



Robert J. Rawson, Jr., Chairman
and Members of the Planning Commission
Page 11
January 4, 1988

The Department of Parks and Recreation offered no written comments on the proposed amendment. On further investigation, DPR has indicated that it has no interest in the subject property because it feels that the maintenance yard and the refuse transfer station are the more appropriate uses of that property.

DPR was, at one time, interested in the adjacent property as an active regional type facility which would have consisted of ball fields, playcourts, recreation buildings, etc. However, this 28-acre parcel has since been redesignated to industrial use (see #1 above).

Kapaa Refuse Transfer Station

The City will locate its Kapaa Refuse Transfer Station adjacent and to the north of the Kapaa Quarry Maintenance Yard. The transfer station will also be within the boundaries of the former quarrying operation on City owned land.

Like the maintenance yard, there will be little or no impacts on the water quality of the Marsh. And as with the maintenance yard, precautions will be taken to insure minimal impacts.

In actuality, the Refuse Transfer Station is a separate issue from the maintenance yard. A policy decision committing the City to the refuse transfer station was made with the adoption of Ordinance No. 87-66 (May 29, 1987) which placed a symbol for a solid waste management facility on the Development Plan Public Facilities Map for Koolaupoko at the site of the old quarry.

Project Location

Several alternative sites have been investigated, including those further back in Kapaa Valley. Improvements to the existing maintenance yard was determined to be the best alternative for the following reasons:

1. Owners of the alternative sites objected to City acquisition of their properties, which indicated possible long delays in acquiring those properties. The present maintenance yard is in need of immediate upgrading and renovation.

GOOD SAMARITAN
POHAI NANI
GOOD SAMARITAN KAUIHALE

RECEIVED
DEPT OF PUBLIC WORKS
(808) 247-4211
FEB 2 4 30 PM '88
2-880 Namoku Street, Kaneohe, Hawaii 96744

88-0763

ENV
Refuse

February 1, 1988

John P. Whalen, Director
City and County of Honolulu, Dept. of Land Utilization
650 S. King St.,
Honolulu, Hawaii 96813

Dear Mr. Whalen:

Re: Environmental Impact Statement for Kapaa Refuse Transfer Station.

Thank you for the opportunity to review the Environmental Impact Statement for the above reference project.

Residents and management of Pohai Nani Good Samaritan Kaihale continue to be in support of the project.

Do not hesitate to contact me if additional comments need to be made.

Sincerely yours,


Gunter Brunk, M.P.A.
Executive Director

cc: Alfred J. Thiede
Director and Chief Engineer
Department of Public Works
650 S. King Street
Honolulu, Hawaii 96813

Encl.

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



FILED 7/15/88

ALFRED J. THIEDE
DIRECTOR AND CHIEF ENGINEER

R 88-380

March 18, 1988

Mr. Gunter Brunk, M.P.A.
Executive Director
Pohai Nani Good Samaritan
Kauhale
45-090 Namoku Street
Kaneohe, Hawaii 96744

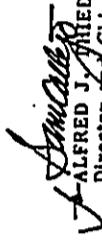
Dear Mr. Brunk:

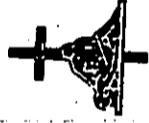
Subject: Draft Environmental Impact Statement for the Kapaa Refuse Transfer Station

We have received your comments dated February 1, 1988 on the Draft EIS prepared for the proposed Kapaa Quarry Refuse Transfer Station. We acknowledge the support of the residents and management of Pohai Nani Good Samaritan Kauhale for our project.

Thank you for your continuing support.

Sincerely,


ALFRED J. THIEDE
Director and Chief Engineer



In CHRIST'S love,
everyone is someone

THE LANI-KAILUA OUTDOOR CIRCLE
P. O. BOX 261
KAILUA, HAWAII 96731

880563

RECEIVED
DIVISION OF PUBLIC WORKS
JAN 16 2 01 PM '88

DEPT. OF LAND UTILIZATION
DIP 527
Rymer

Page Two
January 23, 1988
Dept. of Land Utilization

January 23, 1988

Department of Land Utilization
City & County of Honolulu
650 South King St.
Honolulu HI 96813

ATTENTION: Mr. John P. Whalen, Director
SUBJECT: Kapaa Refuse Transfer Station
Environmental Impact Statement

Gentlemen:

Thank you for the opportunity to comment on the Environmental Impact Statement for the proposed Kapaa Refuse Transfer Station.

We have several areas of concern regarding this project:

Visual Impact: We are not reassured by the response to our concerns expressed in our letter to the Department of Public Works on November 6, 1987. In that letter we suggested a site further back in Kapaa Valley so that the structure would not intrude on the view plane of Kawaihuli Marsh. The disclaimer that there will be landscaping and material design of the building to blend in with the surrounding area says nothing good about fitting in with the long planned park aspects of the area. Please think in terms of needed beauty and quiet for a park ambience, rather than what goes with junk cars and garbage. It would be tragic to close future options for park planning without full consideration for noise abatement and award-quality landscape screening of this structure.

Noise: Our understanding of your data suggests it will be very noisy around the facility, and that it will be easily heard a mile away. As you know, the Kawaihuli Directional Plan as well as the State Management Plan calls for "The Gathering Place", or an Interpretive Center and Campground on the pilot landfill area. Noise abatement procedures should be followed in order not to foreclose this future optional use of adjacent areas.

Traffic: It is unclear from maps shown in the EIS exactly how the Transfer Station traffic will flow from the Pali Highway and Mokapu Blvd., or where the proposed connector road exits. Such huge trailers have potential for horrendous accidents and need more definite projected routing.

Water Quality: The EIS states that washdown effluent from the facility and vehicles would inevitably find its way into Kawaihuli Marsh, and this is of concern to us. We feel this would adversely impact the water of the Marsh and its long-range use as a Regional Park.

The Lani-Kailua Outdoor Circle once again urges consideration of alternatives such as recycling for refuse disposal.

Yours truly,

John P. Whalen

Marian Heitman,
President

CC: The Outdoor Circle, Honolulu
Dept. of Public Works, City & County of Honolulu
Attention: Mr. Alfred Thiede, Director
Kailua Neighborhood Board No. 31, Kailua
Attention: Ms. Donna Wong

RECEIVED
JAN 27 4 12 PM '88
DIVISION OF REFUSE
COLLECTION & DISPOSAL

FEB 1 1988

THE LANI-KAILUA OUTDOOR CIRCLE
P. O. BOX 261
KAILUA, HAWAII 96734

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



FRANK F. FALK
DIRECTOR

ALFRED J. THORPE
DIRECTOR AND CHIEF ENGINEER

R 88-359

February 2, 1988

March 18, 1988

Mr. David Quintal
Keehi Refuse Transfer Station
c/o Dept. of Public Works
850 South King St.
Honolulu HI 96813

Mrs. Marian Heltman, President
The Lan-Kailua Outdoor Circle
P.O. Box 261
Kailua, Hawaii 96734

Dear Mr. Quintal,

Dear Mr. Quintal,

Subject: Draft Environmental Impact Statement, Kapaa Refuse Transfer Station

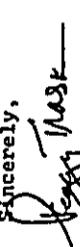
Thank you for the opportunity to tour your facility. Our group was most impressed with the efficiency shown by your men in handling a considerable amount of refuse, and by the well-kept condition of the physical plant. It is our hope that the proposed Kapaa Refuse Transfer Station will also be well-kept and efficiently operated.

We have received your organization's comments dated January 23, 1988 on the Draft Environmental Impact Statement (DEIS) prepared for the proposed Kapaa Refuse Transfer Station. We respond to the comments as follows:

1. **Visual Impact:** We had discussed with Ameron HC&D possible locations further in Kapaa Valley. However, they have informed us there is no room on their present site and they also plan to develop the site behind of the Kapaa Landfill for future quarry operations. We believe the proposed site is the best site for the project for the following reasons:
 - a. The facility will be adjacent to the existing refuse collection yard and the new Automotive Equipment Maintenance building.
 - b. The facility needs to be located close to the sanitary landfill where traffic is diverted from the scalehouse to either the transfer station or landfill.
 - c. The City owns the present site. Acquisition of an alternative site would be costly.
 - d. The land has already been extensively altered by the former quarrying operation and the present landfill activity. Alternative sites may require extensive grading and grubbing of virgin land.
 - e. Access and utilities are existing on the present site. An alternative site may require costly off-site work.

Again, our thanks.

Sincerely,


Reginald Trask,
Public Affairs Co-Chair
Lani-Kailua Outdoor Circle

Mrs. Marian Heitman
Page 2

2. Noise: Data shown in Appendix C of the EIS show that the noise level will be well below current standards. The noise from the transfer station will be less than what is presently being heard at the landfill, since the principal activity will take place within the enclosed building as opposed to the open space of the landfill.

3. Traffic: Traffic routing is discussed in Appendix A of the EIS. The refuse transfer trucks would most likely exit the Kapaa Refuse Transfer Station using Kapaa Quarry Access Road to Kalaniana'ole Highway. Its route to the H-power plant would most likely be Kalaniana'ole Highway to Kamehameha Highway to H-3 (when completed) or to Likiep Highway and on to the H-1 Freeway.

The size of these transfer trucks will be similar to the truck/trailers that haul rocks from the quarry.

4. Water Quality: Similar to our other transfer station at Shafter Flats, the facility will not be washed down. The transfer trucks/trailers will be washed approximately once per month and only on the outside. The washrack will be designed to convey the wash water to an oil separator structure before discharging onto the storm drainage system.

As stated in our previous letter, we will be looking into developing recycling programs; however, recycling by itself will not solve Oahu's disposal problem.

We trust that the response provided are satisfactory. We thank you for your comments and continuing concern.

Sincerely,


ALFRED J. FIEDE
Director and Chief Engineer

1 2 3 4 5 6 7 8 9 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

REFERENCES

1. City and County of Honolulu, Building Department, Kapaa Quarry Maintenance Yard Master Plan Study, prepared by KFC Airport, Inc., March 1985.
2. City and County of Honolulu, Department of Public Works, Engineering Report for the Kapaa Refuse Processing and Transfer Station, prepared by R.M. Towill Corporation, 1975.
3. Land Study Bureau, University of Hawaii, Detailed Land Classification-Island of Oahu, L.S.B. Bulletin No. 11, December 1972.
4. United States Department of Agriculture, Soil Conservation Service, Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, August 1972.
5. University of Hawaii, Department of Geography, Second Edition Atlas of Hawaii, University of Hawaii Press, 1983.

LIST OF PREPARERS

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Randall Okaneku - Traffic Engineer

Barry D. Root - Air Quality Study

Y. Ebisu & Associates - Noise Impact Study
Y. Ebisu

Gordon L. Dugan, Ph.D. - Surface Water Runoff

APPENDIX A

Traffic Impact Assessment for the Proposed
Kapaa Refuse Transfer Station

TRAFFIC IMPACT ASSESSMENT
FOR THE PROPOSED
KAPAA REFUSE TRANSFER STATION

PREPARED FOR
REFUSE COLLECTION & DISPOSAL DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY AND COUNTY OF HONOLULU

BY
AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS * SURVEYORS
HONOLULU, HAWAII

DECEMBER 16, 1987

TRAFFIC IMPACT ASSESSMENT
FOR THE PROPOSED
KAPAA REFUSE TRANSFER STATION

I. INTRODUCTION

The purpose of this study is to assess the traffic impacts resulting from the proposed Kapaa Refuse Transfer Station. The landfill capacity of the existing Windward sites has only a few years of life remaining. When the City's proposed garbage-to-energy or "H-Power" project comes on line, combustible solid wastes from the Windward district would be collected at the Kapaa site and transferred to large trailer trucks, which would then transport the solid waste to the H-Power plant. The Windward landfill will continue to be used for non-combustible solid wastes, such as demolition material, and as a backup waste disposal facility for the H-Power plant.

Access to the project site from Kalaniana'ole Highway would remain the same as under the existing conditions. The existing site access from the Mokapu Saddle Road direction would be closed and a new connector road would be constructed between the transfer station and Kapaa Quarry Access Road, immediately makai of the project site. Traffic from the transfer station bound for the landfills would continue to use the existing routes. Exhibit 1 shows the proposed Kapaa

Refuse Transfer Station site plan and conceptual traffic circulation plan.

II. EXISTING CONDITIONS

A. General

The existing landfill operation at Kalaheo Sanitary Landfill serves both City refuse trucks from the Windward district and private refuse collectors from both Honolulu and Windward Oahu. The general public is directed to the Kapaa Sanitary Landfill.

The proposed transfer station is located next to the new automotive equipment service yard, under construction at this writing, which would service primarily City refuse vehicles and equipment.

B. Traffic

Access to the existing facility at Kapaa is primarily from Kapaa Quarry Access Road which runs from Kalaniana'ole Highway, near Kailua Drive-In, to Mokapu Saddle Road, near Kalaheo High School. All refuse vehicles and the general public must check in at the weigh station at Kapaa before proceeding either to the Kapaa or Kalaheo sites.

A potential hazard exists at a skewed intersection at the north entrance to the Kapaa Weigh Station area. Vehicles from Mokapu Saddle Road, bound for the weigh station at Kapaa, conflict with vehicles from Kalaniana'ole Highway, bound for Kapaa Quarry.

The peak hours of traffic on the Kapaa Quarry Access Road occur between 6:15 AM and 7:15 AM and between 3:00 PM and 4:00 PM, with traffic volumes of 652 vehicles per hour (vph) and 416

vph, total for both directions. The 24-hour traffic volume on the Kapaa Quarry Access Road totals 5,843 vehicles for both directions.

The vehicular traffic mix consists of private vehicles, using Kapaa Quarry Access Road as a cutoff between Mokapu Saddle Rock and Kalaniana'ole Highway, as well as employee and truck traffic bound for the landfill or the quarry. Exhibit 2 shows traffic count data at the intersection of Kalaniana'ole Highway and Kapaa Quarry Access Road, obtained from the State Department of Transportation.

The segment of the Quarry Access Road between the Kapaa Site and Mokapu Saddle Road is subject to flooding. The roadway becomes inaccessible and is prone to deterioration from heavy truck traffic.

III. TRAFFIC GENERATION

When the proposed transfer station becomes operational, it is expected that the refuse load and the resulting traffic will be significantly reduced. The load reduction of 70% by tonnage will be a result of private collectors transporting their refuse directly to the H-Power plant. The City refuse load and general public refuse load are expected to remain relatively constant. The resulting average daily traffic is expected to be reduced by one-third. The solid waste loading and traffic generation for the existing condition and the projected conditions for the proposed transfer station are shown in Table 1.

TABLE 1. DAILY TRAFFIC COMPARISON (Monday - Saturday)

	<u>Average Daily Tonnage</u>	<u>Peak Daily Tonnage</u>	<u>Average Daily Vehicular Traffic</u>	<u>Peak Daily Vehicular Traffic</u>
<u>Existing Condition</u>				
Refuse Division Collection Trucks	174	211	31	38
Private Collection Trucks	1,027	1,246	221	268
General Public	<u>35</u>	<u>43</u>	<u>241</u>	<u>292</u>
Total	1,236	1,500	493	598
<u>Kapaa Transfer Station</u>				
Refuse Division Collection Trucks	174	211	31	38
Private Collection Trucks	160	246	35	53
General Public	<u>35</u>	<u>43</u>	<u>241</u>	<u>292</u>
Subtotal	369	500	307	383
Transfer Trailer Trucks			<u>18</u>	<u>30</u>
Total			325	413

The number of refuse personnel needed for a full-scale landfill operation is about the same as the number of personnel required for the transfer station operation.

The transfer station traffic demand would actually be less than the existing landfill traffic demand. Furthermore, the general public traffic would continue to check in at the new weigh station; however,

separate dumping areas would be established within the transfer station. Therefore, the proposed transfer station is expected to have a negligible impact on traffic operations on Kapaa Quarry Access Road.

IV. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

The proposed Kapaa Transfer Station traffic demand would be only about two-thirds of existing landfill traffic demand. The reduction in traffic is entirely in private collection trucks. The truck to general public vehicle mix would change from 1:1 to 1:3. The proposed transfer station would actually improve existing traffic conditions because of the reduction of total vehicular trips on the Quarry access road and the reduction of large vehicles in the traffic mix.

The through traffic currently using the Quarry Access Road as a cutoff between Mokapu Saddle Road and Kalaniana'ole Highway should be diverted to the new H-3 Freeway upon its completion. Therefore, traffic in the vicinity would be strictly local traffic destined for the transfer station, Ameron HC&D Kapaa Quarry, or the municipal landfill.

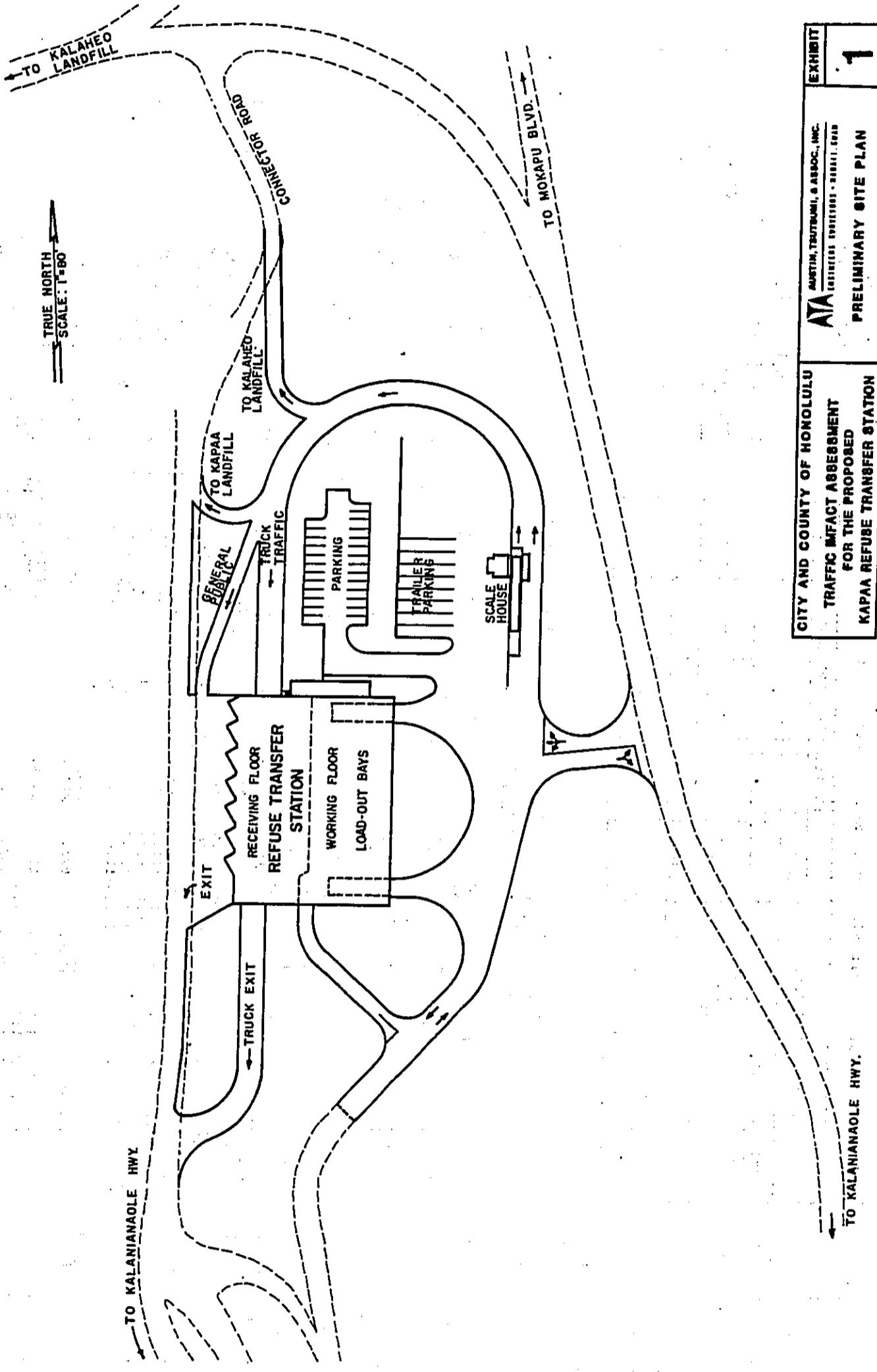
The proposed Kapaa Refuse Transfer Station is not expected to have a significant impact on existing traffic operations.

B. Recommendations

1. The existing access driveway to the Kapaa site from the Mokapu Saddle Road direction should be closed and replaced by a new connector road between Kapaa Quarry Access Road and the transfer station site. This eliminates the existing

conflict between northbound quarry traffic and southbound Kapaa traffic at the existing Kapaa access driveway.

2. Truck traffic traveling to and from the transfer station should avoid using the Mokapu Saddle Road access and should use the Kalaniana'ole Highway access. The north end of the Quarry Access Road is not an all-weather road. Furthermore, its intersection with Mokapu Saddle Road is unsignalized and trucks may experience long delays waiting to enter mainline traffic.



TRUE NORTH
SCALE: 1"=80'

<p>CITY AND COUNTY OF HONOLULU TRAFFIC IMPACT ASSESSMENT FOR THE PROPOSED KAPAA REFUSE TRANSFER STATION</p>	<p>AIA MARTIN, TRUTRUMI, & ASSOC., INC. ENGINEERS ARCHITECTS - SURVEYORS</p> <p>PRELIMINARY SITE PLAN</p> <p>EXHIBIT 1</p>
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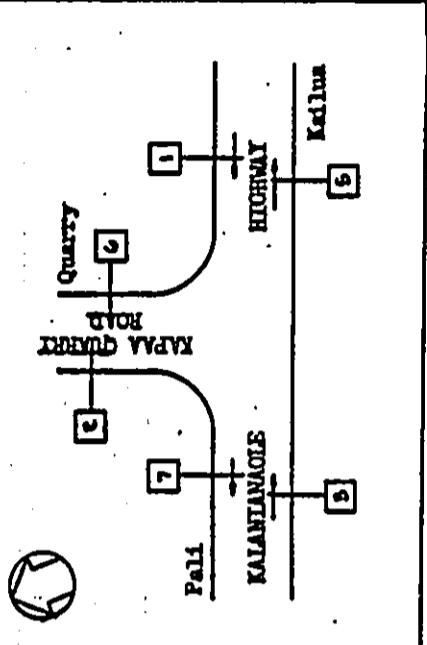
24-HOUR TRAFFIC COUNT-STATION SUMMARY

HAWAII STATE DOT, HIGHWAYS DIVISION

TRAFFIC BRANCH

Station No: 33-A Count Type: Group: Old No:
 Location: Kalaniana'ole Highway at Kapaa Quarry Road

STATION CHARACTERISTICS	INTERSECTION APPROACHES			
	LEG 1	LEG 2	LEG 3	LEG 4
Traffic Control				
Width of Approach (Ft)				
No. of Lanes at Approach	2	1	2	
Separate Turning Lane (Lt,Rt,Lt/Rt)	Right	Right	Left	
Parking (AM, PM, All Day, None)				
Bus Stop (NS:Near Side/FS:Far Side)	None	None	None	None



STATION NO.: 33-A STATION DESCRIPTION: KALANIANA'OLE HIGHWAY AT KAPAA QUARRY ROAD
 POLLING DATE: JANUARY 14-15, 1986 (TUE-WED)
 CHANNEL A: (2) ON KAPAA QUARRY RD IB FROM QUARRY - MR #5674
 CHANNEL B: (6) ON KAPAA QUARRY RD OB TO QUARRY - MR #2786

TIME-AM	CH-A	CH-B	TOTAL	TIME-AM	CH-A	CH-B	TOTAL	TIME-PH	CH-A	CH-B	TOTAL	TIME-PH	CH-A	CH-B	TOTAL
12:00-12:15	4	12	16	6:00-6:15	51	13	64	12:00-12:15	34	28	62	6:00-6:15	28	63	91
12:15-12:30	3	5	8	6:15-6:30	94	19	113	12:15-12:30	37	38	75	6:15-6:30	29	74	103
12:30-12:45	2	5	7	6:30-6:45	150	40	190	12:30-12:45	30	38	68	6:30-6:45	27	90	117
12:45-1:00	2	9	11	6:45-7:00	151	35	186	12:45-1:00	37	37	74	6:45-7:00	15	70	85
1:00-1:15	3	5	8	7:00-7:15	111	52	163	1:00-1:15	52	60	112	7:00-7:15	23	33	56
1:15-1:30	1	4	5	7:15-7:30	80	30	110	1:15-1:30	34	37	71	7:15-7:30	27	24	51
1:30-1:45	1	2	3	7:30-7:45	54	42	96	1:30-1:45	52	44	96	7:30-7:45	13	37	50
1:45-2:00	0	5	5	7:45-8:00	78	33	111	1:45-2:00	52	44	96	7:45-8:00	12	27	39
2:00-2:15	0	1	1	8:00-8:15	93	27	120	2:00-2:15	47	52	99	8:00-8:15	10	24	34
2:15-2:30	1	2	3	8:15-8:30	71	23	94	2:15-2:30	42	35	77	8:15-8:30	8	23	31
2:30-2:45	0	1	1	8:30-8:45	68	28	96	2:30-2:45	36	35	71	8:30-8:45	10	18	28
2:45-3:00	0	1	1	8:45-9:00	52	31	83	2:45-3:00	38	38	76	8:45-9:00	4	17	21
3:00-3:15	1	3	4	9:00-9:15	69	34	103	3:00-3:15	54	49	103	9:00-9:15	11	16	27
3:15-3:30	2	3	5	9:15-9:30	55	32	87	3:15-3:30	44	56	100	9:15-9:30	10	16	26
3:30-3:45	0	1	1	9:30-9:45	66	37	103	3:30-3:45	58	58	116	9:30-9:45	14	18	32
3:45-4:00	2	1	3	9:45-10:00	54	36	90	3:45-4:00	42	55	97	9:45-10:00	6	16	22
4:00-4:15	0	2	2	10:00-10:15	40	31	71	4:00-4:15	51	51	102	10:00-10:15	17	13	30
4:15-4:30	0	2	2	10:15-10:30	50	40	90	4:15-4:30	55	44	99	10:15-10:30	6	13	19
4:30-4:45	3	4	7	10:30-10:45	49	39	88	4:30-4:45	55	50	105	10:30-10:45	5	16	21
4:45-5:00	4	7	11	10:45-11:00	48	36	84	4:45-5:00	48	54	102	10:45-11:00	5	8	13
5:00-5:15	6	14	20	11:00-11:15	42	46	88	5:00-5:15	40	51	91	11:00-11:15	8	14	22
5:15-5:30	12	20	32	11:15-11:30	44	47	91	5:15-5:30	33	64	97	11:15-11:30	2	8	10
5:30-5:45	17	20	37	11:30-11:45	40	40	80	5:30-5:45	42	62	104	11:30-11:45	1	5	6
5:45-6:00	36	19	55	11:45-12:00	48	37	85	5:45-6:00	27	44	71	11:45-12:00	11	5	16
AM-TOTAL	1758.	976.	2734.	PH-TOTAL	1328.	1781.	3109.	CH-A CH-B TOTAL	1328.	1781.	3109.	CH-A CH-B TOTAL	1328.	1781.	3109.
6:00-12:00 TOT	1658.	828.	2486.	12:00-6:00 TOT	1026.	4:00	2159.	CH-A CH-B TOTAL	1026.	4:00	2159.	CH-A CH-B TOTAL	1026.	4:00	2159.
AM-PEAK HR TIME	6:15-7:15			PH-PEAK HR TIME	3:00-4:00			CH-A CH-B TOTAL	3:00-4:00			CH-A CH-B TOTAL	3:00-4:00		
SPEAK-HR TOTAL	506.			SPEAK-HR TOTAL	198.			CH-A CH-B TOTAL	198.			CH-A CH-B TOTAL	198.		
AM D-Z (PEAK-HR)	77.6			PH D-Z (PEAK-HR)	47.6			CH-A CH-B TOTAL	47.6			CH-A CH-B TOTAL	47.6		
AM D-Z (MN-12M)	64.3			PH D-Z (12M-MN)	42.7			CH-A CH-B TOTAL	42.7			CH-A CH-B TOTAL	42.7		
AM K FACTOR	35.7			PH K FACTOR	11.2			CH-A CH-B TOTAL	11.2			CH-A CH-B TOTAL	11.2		

CITY AND COUNTY OF HONOLULU
 TRAFFIC IMPACT ASSESSMENT
 FOR THE PROPOSED
 KAPAA REFUSE TRANSFER STATION

AUSTIN, TSUTSUMI, & ASSOC., INC.
 ENGINEERS SURVEYORS - HAWAII, GUAM
 STATE DOT TRAFFIC COUNT

EXHIBIT
 2

APPENDIX B

**Air Quality Study for the Proposed
Kapaa Refuse Transfer Station**

AIR QUALITY STUDY
FOR THE
PROPOSED KAPAA REFUSE TRANSFER STATION
KOOLAUPOKO, OAHU, HAWAII

Prepared by
Barry D. Root
Kaneohe, Hawaii

November 16, 1987

1. PROJECT DESCRIPTION

The proposed project will involve site preparation and construction of a refuse transfer station for solid wastes. Specifically, an enclosed concrete and metal frame structure of approximately 28,000 square feet is planned. The proposed construction site is located within the present Kapaa Sanitary Landfill area just off the Kapaa Quarry Road in the Koolaupoka District of Oahu as shown in Figure 1.

The transfer station will be used to consolidate shipments of solid waste from the windward side of Oahu to the planned H-POWER plant in Campbell Industrial Park. The H-POWER project is slated for completion by 1991.

The purpose of this study is to describe existing ambient air quality in the project area and to estimate the magnitude of any change in air pollutant concentrations resulting from actions related to the proposed project.

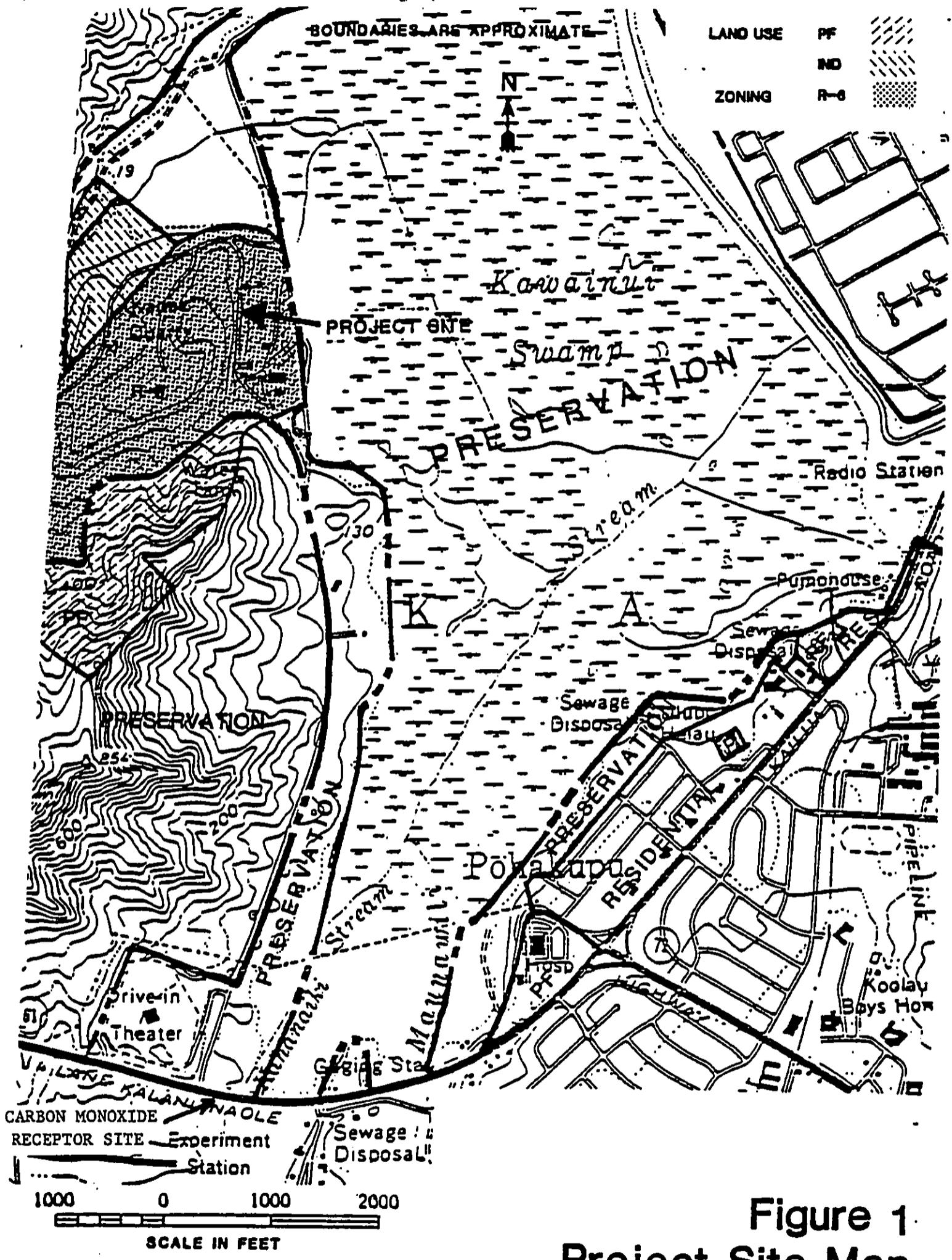


Figure 1
Project Site Map

2. AIR QUALITY STANDARDS

State of Hawaii and National Ambient Air Quality Standards (AQS) have been established for six classes of pollutants as shown in Table 1. An AQS is a pollutant concentration not to be exceeded over a specified sampling period which varies for each pollutant depending upon the type of exposure necessary to cause adverse effects. Each of the regulated pollutants has the potential to cause some form of adverse health effect or to produce environmental degradation when present in sufficiently high concentration.

National AQS have been divided into primary and secondary levels. Primary AQS are designed to prevent adverse health impacts while secondary AQS refer to welfare impacts such as decreased visibility, diminished comfort levels, damage to vegetation, animals or property, or a reduction in the overall aesthetic quality of the atmosphere. State of Hawaii AQS have been set at a single level which is in some cases significantly more stringent than the lowest comparable national limit. In particular, the State of Hawaii one hour standard for carbon monoxide is four times more stringent than the National standard.

National AQS are based on 40 CFR Part 50, while State of Hawaii AQS are set in Chapter 11-59, Hawaii Administrative Rules.

TABLE 1

SUMMARY OF HAWAII AND NATIONAL AMBIENT AIR QUALITY STANDARDS
(Micrograms per Cubic Meter)

POLLUTANT	SAMPLING PERIOD	AMBIENT AIR QUALITY STANDARDS		
		NATIONAL		HAWAII
		Primary	Secondary	
Particulates	Annual Geometric Mean	75	60	60
	Maximum 24-Hour Average	260	150	150
Sulfur Dioxide	Annual Arithmetic Mean	80	—	80
	Maximum 24-Hour Average	365	—	365
	Maximum 3-Hour Average		1300	1300
Nitrogen Dioxide	Annual Arithmetic Mean		100	70
Ozone	Maximum 1-Hour Average		240	100
Carbon Monoxide	Maximum 8-Hour Average		10	5
	Maximum 1-Hour Average		40	10
Lead	Calendar Quarter		1.5	1.5

- Notes: 1. Carbon monoxide standards are in milligrams per cubic meter.
2. National standards based on 40 CFR Part 50; Hawaii standards based on Title 11, Administrative Rules, Chapter 59.

3. PRESENT AIR QUALITY

There are no available long term air pollutant measurements for the project site or its immediate vicinity. Particulates have been measured for several years in Waimanalo, on the windward coast of Oahu, but this station was selected primarily to sample background concentrations upwind of Oahu and readings are consequently quite low. Particulate levels at Waimanalo typically range from 20 to 40 with an average of 30 micrograms per cubic meter, a level well below all existing air quality limits. Particulate levels in the vicinity of the present Kapaa Landfill are likely to be much higher than background levels, however, because dirt moving activities and heavy vehicles moving over unimproved roadways create a significant amount of fugitive dust. It is not possible to estimate whether current levels exceed allowable AQS, but it is possible that they do.

Carbon monoxide levels at the intersection of Kapaa Quarry Road and Kalaniana'ole Highway are presently estimated to be above State of Hawaii one and eight hour limits, and may exceed Federal eight hour limits as well under worst case atmospheric dispersion conditions. The nearest carbon monoxide monitoring station is in urban Honolulu in the Department of Health building at Punchbowl and Beretania Streets. State of Hawaii one hour AQS were exceeded at that location three times last year, but levels were not above the eight hour Hawaii limit and Federal standards were not violated. Heavy traffic volume at the main intersection serving the project makes it one of the significant potential carbon monoxide hotspots on Oahu, however, and it is possible that carbon monoxide levels in the vicinity of this intersection could exceed allowable limits several times a year.

Present concentrations of other regulated pollutants within the project area are probably quite low. Refuse collection trucks used on the windward side of Oahu are primarily diesel-powered. Diesel emissions contain significant amounts of nitrogen dioxide, but the percentage of refuse trucks within the daily traffic volume at the primary intersection of concern is small and nitrogen dioxide emissions from gasoline-powered vehicles are very low. On the other hand, carbon monoxide emissions from diesel trucks are little more than those of a single automobile, and refuse trucks consequently make a small contribution to vehicle-related carbon monoxide levels.

Within the existing Landfill there are also likely to be some objectionable odors generated during normal daily operations. There are presently no objective methods for measuring these odors, and no quantitative standards for evaluating their potential environmental impact.

In summary, existing levels of particulates within the project site, and carbon monoxide levels near the primary intersection serving the project site are estimated to be quite high, but levels of other regulated pollutants are most likely well within allowable limits.

4. DIRECT AIR QUALITY IMPACT OF PROJECT CONSTRUCTION

During the site preparation and construction phases of this project it is inevitable that a certain amount of fugitive dust will be generated. Field measurements of such emissions from apartment and shopping center construction projects has yielded an estimated emission rate of 1.2 tons of dust per acre of construction per month of activity. This figure assumes medium level activity in a semi-arid climate with a moderate soil silt content. Actual emissions of fugitive dust from this project can be expected to vary daily depending upon the amount of activity and the moisture content of exposed soil in work areas.

One major generator of fugitive dust is heavy construction equipment moving over unpaved surfaces. This problem can be substantially mitigated by completing and paving roadways and parking areas as early in the development process as possible.

In fact, site preparation for this project should be relatively uncomplicated and the construction phase of the project should be of relatively short duration. By curtailing landfill operations and paving parking lots and roadways adjacent to the transfer station, the overall dust generating characteristics of the project site will be significantly reduced and present high levels of fugitive dust will have been substantially abated.

5. INDIRECT AIR QUALITY IMPACT OF PROJECT-RELATED TRAFFIC

Once construction is completed the proposed project will not in itself constitute a major direct source of air pollutants. By serving as an attraction for motor vehicle traffic in the area, however, the project could be considered to be a potential indirect air pollution source, but in the case of this particular project future levels of traffic entering and leaving the project site are expected to be lower than present levels. Because of a significant reduction in the daily volume of private haulers using the transfer station as compared to present landfill operations, daily traffic volume at the site is expected to drop from 493 to 307. This would reduce peak morning rush hour volume by an estimated 24 vehicles. While this decrease is not particularly significant it is possible to quantify the ameliorative effect it would have on carbon monoxide levels at the intersection of Kalaniana'ole Highway and Kapaa Quarry Road.

Motor vehicles, especially those with gasoline-powered engines, are prodigious emitters of carbon monoxide. Motor vehicles also emit some nitrogen dioxide and those burning fuel which contains lead as an additive contribute some lead particles to the atmosphere as well. The major control measure designed to limit lead emissions is a Federal law requiring the use of unleaded fuel in most new automobiles. As older cars are removed from the vehicle fleet lead emissions should continue to fall. In fact, effective January 1, 1986, the Federal Environmental Protection Agency has revised the allowable lead amount in gasoline to 0.1 gram per gallon. At the beginning of 1985 the standard was 1.1 grams per gallon. The EPA is also advocating a total ban on lead in gasoline to take effect as early as 1988.

Federal control regulations also call for increased efficiency in removing carbon monoxide and nitrogen dioxide from vehicle exhausts. By the year 1997 carbon monoxide emissions from the Oahu vehicle fleet then operating should be little more than half the amounts now emitted. At present, however, no further reductions in vehicular emissions have been mandated for years following 1995, and increases in traffic levels after 1995 will result in directly proportional increases in vehicle-related pollutant emissions.

6. CARBON MONOXIDE DIFFUSION MODELING

Even though traffic to and from the proposed new transfer station is expected to be lower than existing levels, traffic volumes at the major intersection serving the project are expected to continue increasing in coming years. Traffic volume at the intersection of Kalaniana'ole Highway and Kapaa Quarry Road increased by 6.4% over the last ten years. This value was used to create extrapolated traffic volume projections for this intersection for the year 1997.

In order to evaluate the air quality impact of projected increases in traffic at this intersection in view of the potential reduction in volume of traffic associated with the proposed project and the projected reductions in emission rates per vehicle described in the previous section, a detailed carbon monoxide modeling study was carried out. The study was designed to yield carbon monoxide concentration values which could be compared directly to allowable State and National Ambient Air Quality Standards.

Just one critical location was selected for analysis, a site to the south of the intersection along Kalaniana'ole highway. This intersection is presently signalized with a peak hour signal cycle of about 75 seconds, resulting in queue lengths of about 60 meters upstream from each red signal. Peak hour at this location is during the morning rush hour from about 6:15 to 7:15 AM. Current and forecast peak hour traffic volumes at this intersection indicate that highest traffic-related levels of carbon monoxide would be most likely to occur along the south side of Kalaniana'ole Highway.

Modeling was performed for a string of receptor sites located 10 meters from the edge of the highway and highest levels in all cases occurred at a single receptor site located about 33 meters south of the intersection. This site is marked in Figure 1.

Computations were made for current peak hour conditions and for study year 1997. Calculations for 1997 included peak hour traffic volume scenarios with and without the proposed project.

Using 1986 vehicle registration figures for Oahu, the existing peak hour vehicle mix in the project area is estimated to be 91.9% light duty gasoline-powered vehicles, 4.2% light duty gasoline-powered trucks and vans between 6000 and 8500 pounds, 0.5% heavy duty gasoline-powered vehicles, 0.5% diesel-powered automobiles, 0.1% diesel-powered light duty trucks, 1% diesel-powered trucks and buses, and 1% motorcycles. The same vehicle mix was assumed for 1997 emission rate calculations.

Average vehicle speeds were assumed to be 1 mph upstream from red signals and 15 mph downstream from signals or turns. An ambient temperature of 58 degrees F was assumed to simulate a cool winter morning with 20.6 percent of vehicles equipped with catalytic converters and 20.6 percent of vehicles without catalytic converters operating in the "cold start" mode and 27.3 percent of all vehicles operating in the hot start mode. The EPA computer model MOBILE3 was run using the above parameters to produce vehicular carbon monoxide emission estimates for each of the years studied. The low speed option of the model was employed to project emission rates for vehicle speeds of less than 5 mph and the national default options for misfueling rates were employed.

The EPA computer model HIWAY 2 was used to calculate carbon monoxide concentrations at each of the selected critical receptor sites for each scenario studied. Stability category 6 was used for determining diffusion coefficients. This stability category represents the most stable (least favorable) atmospheric condition that can be used in modeling calculations.

To simulate worst case wind conditions a uniform wind speed of one meter per second was assumed with the worst case wind direction from the northwest. For each receptor site concentrations were computed at a height of 1.5 meters in order to estimate levels that would exist within the normal human breathing zone.

Background contributions of carbon monoxide from sources or distant roadways not directly considered in the analysis were assumed to be zero in order to more clearly indicate the impact of project-related traffic. In fact, background levels at this location would not likely be more than 0.5 milligrams per cubic meter in 1987 and not more than 0.3 in 1997.

Results of the peak hour carbon monoxide study are presented in Table 2. Present peak hour carbon monoxide levels under the worst case assumptions used here are well above the allowable State of Hawaii one hour AQS for both the present and future case, with the decrease in trucks bound for the Landfill in future years accounting for a potential decrease of about 0.5 milligrams per cubic meter. All of the computed peak hour worst case carbon monoxide concentrations are well within the National one hour carbon monoxide limit.

Eight hour carbon monoxide levels are estimated by multiplying the peak hour values by a "meteorological persistence factor" of 0.6 which is recommended in EPA modeling guidelines to account for the fact that average one hour traffic volumes over an eight hour period are lower than peak hour volume and the fact that meteorological dispersion conditions are more variable (and hence more favorable) over an eight hour period than they are for a one hour period. Multiplying projected peak hour carbon monoxide levels by this factor yields the values that are shown in Table 3.

TABLE 2

RESULTS OF PEAK HOUR CARBON MONOXIDE ANALYSIS
(Milligrams Per Cubic Meter)

AT CRITICAL RECEPTOR SITE NEAR KALANIANAOLE HIGHWAY - KAPAA QUARRY
ROAD INTERSECTION

SCENARIO	YEAR	1987	1997
Without Transfer Station		25.0	12.6
With Transfer Station			12.1

STATE OF HAWAII AQS: 10
NATIONAL AQS: 40

Notes: See Figure 1 for location of critical receptor site.
See text, Section 6, for models and assumptions used
for producing these estimates.

TABLE 3

RESULTS OF EIGHT HOUR CARBON MONOXIDE ANALYSIS
(Milligrams Per Cubic Meter)

AT CRITICAL RECEPTOR SITE NEAR KALANIANAOLE HIGHWAY - KAPAA QUARRY
ROAD INTERSECTION

SCENARIO	YEAR	1987	1997
Without Transfer Station		15.0	7.6
With Tranmsfer Station			7.3

STATE OF HAWAII AQS: 5
NATIONAL AQS: 10

Notes: See Figure 1 for location of critical receptor site.
See text, Section 6, for models and assumptions used
for producing these estimates.

For the 1987 scenario, worst case traffic and meteorological assumptions indicate that the Hawaii eight hour standard would be exceeded at the critical receptor site considered for both the present and future case. In fact the eight hour National standard could be exceeded by the present case as well. By 1997, however, projected eight hour levels fall within allowable National limits.

As seen from the modeling, the quantifiable air quality impact of the proposed project is very small. Nonetheless any measurable improvement in air quality that can be gained by implementing the proposed project as planned must be considered to be significant in view of the fact that potential worst case carbon monoxide levels in the vicinity of the major intersection serving the project are so high.



REFERENCES

1. U.S. ENVIRONMENTAL PROTECTION AGENCY, User's Guide to MOBILE3: Mobile Source Emissions Model, June, 1984.
2. U.S. ENVIRONMENTAL PROTECTION AGENCY, User's Guide to HIWAY 2, A Highway Air Pollution Model, May, 1980.
3. U.S. ENVIRONMENTAL PROTECTION AGENCY, Guidelines for Air Quality Maintenance Planning and Analysis, Volume 9: Evaluating Indirect Sources, January, 1975, revised September, 1978.
4. ENVIRONMENTAL COMMUNICATIONS, INC., Environmental Impact Statement Preparation Notice for the Kapaa Refuse Transfer Station, September, 1987.

APPENDIX C

Noise Impact Study for the Proposed
Kapaa Refuse and Transfer Station

NOISE IMPACT STUDY
FOR THE PROPOSED
KAPAA REFUSE AND TRANSFER STATION PROJECT

PREPARED FOR
ENVIRONMENTAL COMMUNICATIONS, INC.

BY
Y. EBISU & ASSOCIATES

SEPTEMBER, 1987

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I. SUMMARY

The existing and future noise levels in the vicinity of the proposed Kapaa Refuse and Transfer Station were evaluated for the purpose of determining the possible noise impacts which may occur as a result of operations at the proposed facility. Additionally, the projected changes in truck traffic noise levels along the north and south sections of the Quarry Access Road were evaluated.

The remoteness of the proposed location for the transfer station, and the similarity of the proposed use with existing operations at the Kapaa Sanitary Landfill reduce the risks of adverse noise impacts from the proposed transfer station. Calculated noise levels from the proposed transfer station at surrounding noise sensitive properties are below existing background ambient noise levels. Increases in noise levels resulting from heavy truck traffic along the Quarry Access Road are not expected to occur, since the project is not expected to cause a net increase in heavy truck trips along the Quarry Access Road. Increases in trailer truck trips are expected to be offset by decreases in private refuse collection truck trips. For these reasons, special noise mitigation measures are not considered necessary for this project.

II. PURPOSE

The purposes of this study were to evaluate the existing and future noise environment in the environs of the proposed Kapaa Refuse and Transfer Station project at the Kapaa Sanitary Landfill, and to determine if noise mitigation measures are required to mitigate adverse noise impacts attributable to the operations of the proposed station. Recommendations for the implementation of noise mitigation measures were to be provided as required.

III. NOISE DESCRIPTORS AND THEIR RELATIONSHIP TO LAND USE COMPATIBILITY

The noise descriptor currently used to assess environmental noise in general is the Day-Night Average Sound Level (Ldn). This descriptor incorporates a 24-hour average of instantaneous A-Weighted Sound Levels as read on a standard Sound Level Meter. The minimum averaging period for the Ldn descriptor is 24 hours (by definition). Additionally, sound levels which occur during the nighttime hours of 10:00 PM to 7:00 AM are increased by 10 decibels (dB) prior to computing the 24-hour average by the Ldn descriptor. A more complete list of noise descriptors is provided in APPENDIX B to this report.

TABLE 1, derived from Reference 1, presents current federal standards and acceptability criteria for residential land uses exposed to various levels of environmental noise. As a general rule, noise levels of 55 Ldn or less occur in rural areas, or urbanized areas which are shielded from high volume streets. In urbanized areas, Ldn levels generally range from 55 to 65 Ldn, and are usually controlled by motor vehicle traffic noise. Residences which front major roadways are generally exposed to levels of 65 Ldn, and as high as 72 Ldn when the roadway is a high speed freeway. Due to noise shielding effects from intervening structures, residences which are located within interior lots are usually exposed to lower noise levels of 60 Ldn or less.

For the purposes of determining noise acceptability for funding assistance from federal agencies (FHA/HUD and VA), an exterior noise level of 65 Ldn or lower is considered acceptable. This standard is applied nationally (see Reference 2), including Hawaii. Because of our open-living conditions, the predominant use of naturally ventilated dwellings, and the relatively low exterior-to-interior sound attenuation afforded by these naturally ventilated structures, an exterior noise level of 65 Ldn does not eliminate all risks of noise impacts. For these reasons, and as recommended in Reference 3, a lower level of 55 Ldn is considered

TABLE 1
 EXTERIOR NOISE EXPOSURE CLASSIFICATION
 (RESIDENTIAL LAND USE)

Noise Exposure Class	Day-Night Sound Level	Equivalent Sound Level	Federal Standard ⁽¹⁾
Minimal Exposure	Not Exceeding 55 Ldn	Not Exceeding 55 Leq	Unconditionally Acceptable
Moderate Exposure	Above 55 Ldn But Not Above 65 Ldn	Above 55 Leq But Not Above 65 Leq	Acceptable ⁽²⁾
Significant Exposure	Above 65 Ldn But Not Above 75 Ldn	Above 65 Leq But Not Above 75 Leq	Normally Unacceptable
Severe Exposure	Above 75 Ldn	Above 75 Leq	Unacceptable

Note: (1) Federal Housing Administration, Veterans Administration, Department of Defense, and Department of Transportation.

(2) FHWA uses the Leq instead of the Ldn descriptor. For planning purposes, both are equivalent if: (a) heavy trucks do not exceed 10 percent of total traffic flow in vehicles per 24 hours, and (b) traffic between 10:00 PM and 7:00 AM does not exceed 15 percent of average daily traffic flow in vehicles per 24 hours.

Source: Reference 1.

as the "Unconditionally Acceptable" (or "Near-Zero Risk") level of exterior noise. However, after considering the cost and feasibility of applying the lower level of 55 Ldn, government agencies such as FHA/HUD and VA have selected 65 Ldn as a more appropriate regulatory standard.

IV. GENERAL STUDY METHODOLOGY

Measurements of existing background ambient noise in the project environs were made in August, 1987 to determine the possible intrusiveness of the noise from the proposed transfer station operations at the noise sensitive properties across Kawainui Swamp. In conjunction with this effort, measurements of noise emanating from the existing Keehi Refuse Transfer Station were also made in August, 1987. These noise data were used to calibrate the noise prediction model, and to refine predictions of future noise levels and noise impact potential in the area surrounding the proposed Kapaa Transfer Station. The measured noise levels at the Keehi Refuse Transfer Station were increased by 7 dBA to depict the busiest period of future unloading operations. Worst case predictions of noise levels associated with future operations at the transfer station were then made at various distances from the proposed transfer station.

Existing and projected refuse truck traffic volumes on the Quarry Access Road were obtained from Austin, Tsutsumi & Associates, Inc. (Reference 4). Because an increase in heavy truck trips on the Quarry Access Road was not projected to occur as a result of the proposed transfer station, project related traffic noise impacts were not expected to occur.

V. EXISTING NOISE ENVIRONMENT

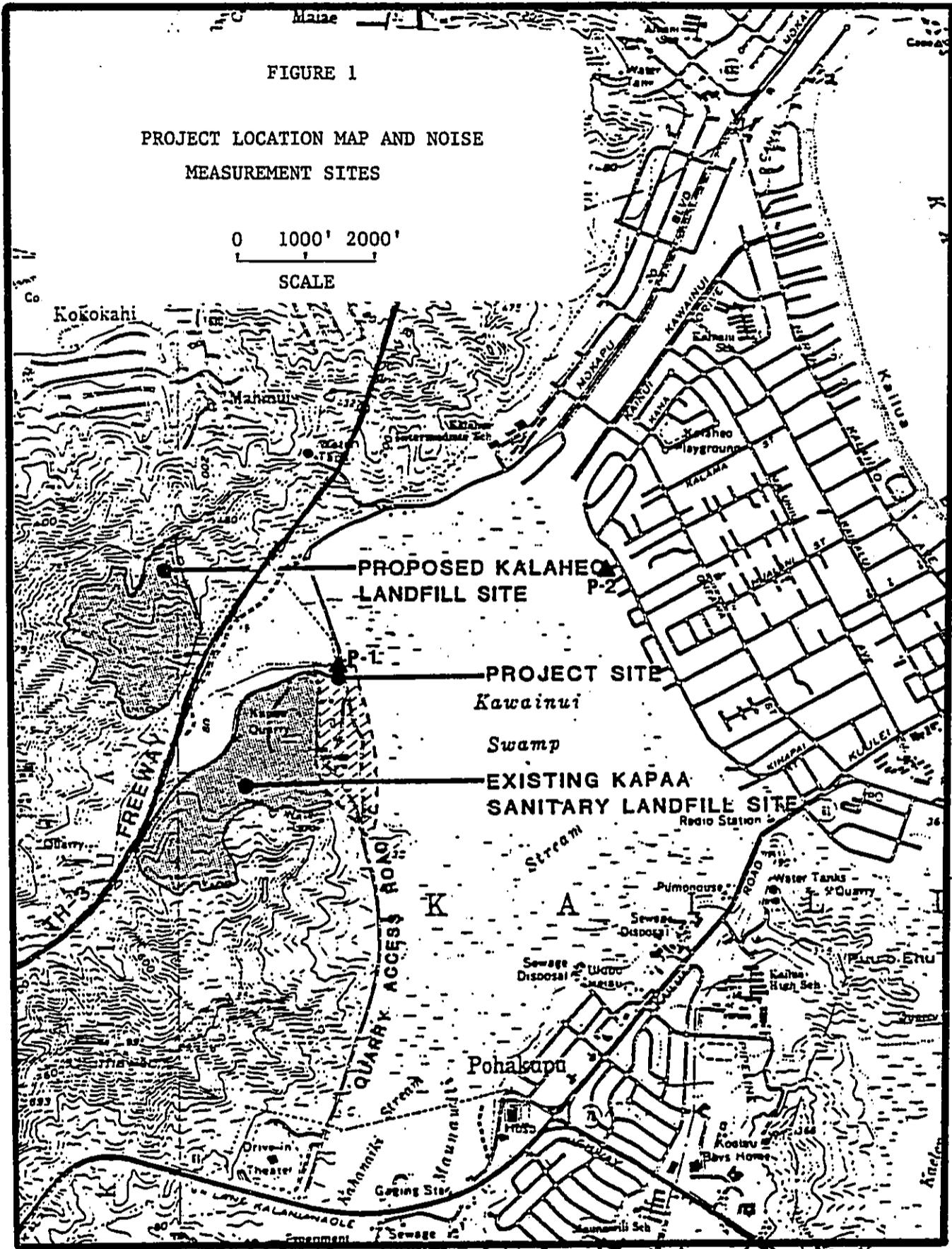
TABLE 2 presents the results of the background ambient noise measurements obtained in the environs of the project site, as well as noise measurements obtained at the Keehi Refuse Transfer Station. FIGURE 1 shows the locations of the background noise measurement sites in relationship to the project site. Background ambient noise levels in the project area were obtained during the quiet time of the day (6:00 PM to 7:00 PM), with resulting average noise levels of 47 to 52 dBA. Minimum background ambient noise levels ranged from 39 to 40 dBA, which are considered to be very quiet. From these measurements, background ambient noise levels in the residential areas to the east of the project site are estimated to be in the range of 45 to 55 Ldn.

TABLE 2

AUGUST, 1987 BACKGROUND AMBIENT AND SOURCE NOISE MEASUREMENTS

LOCATION	MAXIMUM (L _{max}) SOUND LEVEL (dBA)	AVERAGE (Leq) SOUND LEVEL (dBA)	MINIMUM (L _{min}) SOUND LEVEL (dBA)
1. SITE K-1 At Keehi Refuse Transfer Station; 50 FT from the entrance opening.	78	69	64
2. SITE K-2 At Keehi Refuse Transfer Station; inside the entrance opening and 40 FT from tipping stall.	91	85	75
3. SITE K-2 At Keehi Refuse Transfer Station; front end loader noise in pit area.	87	80	74
4. SITE P-1 At proposed project site location; on entrance road to Quarry.	66	52	39
5. SITE P-2 At neighborhood park, across Kawaiui Swamp from project site.	58	47	40

1 2 3 4 5 6 7 8 9 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



VI. FUTURE NOISE ENVIRONMENT AND POSSIBLE NOISE IMPACTS

During unloading operations at the proposed refuse transfer station, noise from the refuse vehicles at the tipping stalls and the front end loader in the refuse pit are expected to emanate from the wall openings of the transfer station. These wall openings include the entry and exit doorways (on the north and south faces of the building) to the tipping stalls, and ventilation openings along the west face of the building. Predicted worst case noise levels at 1,000, 2,000, 3,000, and 4,000 FT distances from the open sides of the proposed transfer station are 47, 39, 33, and 29 dBA, respectively. The noisiest (or open) sides of the facility were designed to face toward the north, south and west, and away from the noise sensitive residences toward the east. Because of the optimum orientation of the transfer station, the large distances (approximately 4,000 FT) to noise sensitive properties across Kawainui Swamp, the beneficial shielding effects of the mountains to the north, west, and south, and the remote location of the proposed facility, the noise from the proposed facility should not present risks of adverse noise impacts. For this reason, special noise mitigation measures should not be required.

A. REFERENCES

(1) "Guidelines for Considering Noise in Land Use Planning and Control," Federal Interagency Committee on Urban Noise, June 1980.

(2) "Environmental Criteria and Standards, Noise Abatement and Control, 24 CFR, Part 51, Subpart B," U.S. Department of Housing and Urban Development, July 12, 1979.

(3) "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety," Environmental Protection Agency, EPA 550/9-74-004), March 1974.

(4) Existing refuse traffic volumes to Kapaa Landfill and projected traffic volumes to Kapaa Transfer Station, via 9/9/87 transmittal from Austin, Tsutsumi & Associates, Inc.



APPENDIX B

TEXT

EXCERPTS FROM EPA'S ACOUSTIC TERMINOLOGY GUIDE

Descriptor Symbol Usage

The recommended symbols for the commonly used acoustic descriptors based on A-weighting are contained in Table I. As most acoustic criteria and standards used by EPA are derived from the A-weighted sound level, almost all descriptor symbol usage guidance is contained in Table I.

Since acoustic nomenclature includes weighting networks other than "A" and measurements other than pressure, an expansion of Table I was developed (Table II). The group adopted the ANSI descriptor-symbol scheme which is structured into three stages. The first stage indicates that the descriptor is a level (i.e., based upon the logarithm of a ratio), the second stage indicates the type of quantity (power, pressure, or sound exposure), and the third stage indicates the weighting network (A, B, C, D, E,....). If no weighting network is specified, "A" weighting is understood. Exceptions are the A-weighted sound level and the A-weighted peak sound level which require that the "A" be specified. For convenience in those situations in which an A-weighted descriptor is being compared to that of another weighting, the alternative column in Table II permits the inclusion of the "A". For example, a report on blast noise might wish to contrast the L_{Cdn} with the L_{Adn} .

Although not included in the tables, it is also recommended that "L_{pN}" and "L_{EPN}" be used as symbols for perceived noise levels and effective perceived noise level, respectively.

It is recommended that in their initial use within a report, such terms be written in full, rather than abbreviated. An example of preferred usage is as follows:

The A-weighted sound level (LA) was measured before and after the installation of acoustical treatment. The measured LA values were 85 and 75 dB respectively.

Descriptor Nomenclature

With regard to energy averaging over time, the term "average" should be discouraged in favor of the

term "equivalent". Hence, L_{eq} is designated the "equivalent sound level". For L_d , L_n , and L_{dn} , "equivalent" need not be stated since the concept of day, night, or day-night averaging is by definition understood. Therefore, the designations are "day sound level", "night sound level", and "day-night sound level", respectively.

The peak sound level is the logarithmic ratio of peak sound pressure to a reference pressure and not the maximum root mean square pressure. While the latter is the maximum sound pressure level, it is often incorrectly labelled peak. In that sound level meters have "peak" settings, this distinction is most important.

"Background ambient" should be used in lieu of "background", "ambient", "residual", or "indigenous" to describe the level characteristic of the general background noise due to the contribution of many unidentifiable noise sources near and far.

With regard to units, it is recommended that the unit decibel (abbreviated dB) be used without modification. Hence, dBA, PNdB, and EPNdB are not to be used.

Examples of this preferred usage are: the Perceived Noise Level (L_{pN} was found to be 75 dB. L_{pN} = 75 dB.) This decision was based upon the recommendation of the National Bureau of Standards, and the policies of ANSI and the Acoustical Society of America, all of which disallow any modification of (be) except for prefixes indicating its multiples or submultiples (e.g., deci).

Noise Impact

In discussing noise impact, it is recommended that "Level Weighted Population" (LWP) replace "Equivalent Noise Impact" (ENI). The term "Relative Change of Impact" (RCI) shall be used for comparing the relative differences in LWP between two alternatives.

Further, when appropriate, "Noise Impact Index" (NII) and "Population Weighted Loss of Hearing" (PHL) shall be used consistent with CHABA Working Group 69 Report Guidelines for Preparing Environmental Impact Statements (1977).

TABLE I: A-Weighted Recommended Descriptor List

Term	Symbol
1. A-Weighted Sound Level	L_A
2. A-Weighted Sound Power Level	L_{WA}
3. Maximum A-Weighted Sound Level	L_{max}
4. Peak A-Weighted Sound Level	L_{Apk}
5. Level Exceeded x% of the time	L_x
6. Equivalent Sound Level	L_{eq}
7. Equivalent Sound Level over Time (T) (1)	$L_{eq}(T)$
8. Day Sound Level	L_d
9. Night Sound Level	L_n
10. Day-Night Sound Level	L_{dn}
11. Yearly Day-Night Sound Level	$L_{dn}(y)$
12. Sound Exposure Level	L_{SE}

(1) Unless otherwise specified, time is in hours (e.g. the hourly equivalent level is $L_{eq}(1)$). Time may be specified in non-quantitative terms (e.g., could be specified a $L_{eq}(WASH)$ to mean the washing cycle noise for a washing machine.)

APPENDIX B (CONTINUED)

TABLE II: Recommended Descriptor List

TERM	A-WEIGHTING	ALTERNATIVE(1) A-WEIGHTING	OTHER WEIGHTING	(2) UNWEIGHTED
1. Sound (Pressure) (3) Level	L_A	L_{pA}	L_B, L_{pB}	L_p
2. Sound Power Level	L_{WA}		L_{WB}	L_W
3. Max. Sound Level	L_{max}	L_{Amax}	L_{Bmax}	L_{pmax}
4. Peak Sound (Pressure) Level	L_{Apk}		L_{Bpk}	L_{pk}
5. Level Exceeded x% of the time	L_x	L_{Ax}	L_{Bx}	L_{px}
6. Equivalent Sound Level	L_{eq}	L_{Aeq}	L_{Beq}	L_{peq}
7. Equivalent Sound Level Over Time(T) (4)	$L_{eq(T)}$	$L_{Aeq(T)}$	$L_{Beq(T)}$	$L_{peq(T)}$
8. Day Sound Level	L_d	L_{Ad}	L_{Bd}	L_{pd}
9. Night Sound Level	L_n	L_{An}	L_{Bn}	L_{pn}
10. Day-Night Sound Level	L_{dn}	L_{Adn}	L_{Bdn}	L_{pdn}
11. Yearly Day-Night Sound Level	$L_{dn(y)}$	$L_{Adn(Y)}$	$L_{Bdn(Y)}$	$L_{pdn(Y)}$
12. Sound Exposure Level	L_S	L_{SA}	L_{SB}	L_{Sp}
13. Energy Average value over (non-time domain) set of observations	$L_{eq(e)}$	$L_{Aeq(e)}$	$L_{Beq(e)}$	$L_{peq(e)}$
14. Level exceeded x% of the total set of (non-time domain) observations	$L_{x(e)}$	$L_{Ax(e)}$	$L_{Bx(e)}$	$L_{px(e)}$
15. Average L_x value	L_x	L_{Ax}	L_{Bx}	L_{px}

(1) "Alternative" symbols may be used to assure clarity or consistency.

(2) Only B-weighting shown. Applies also to C,D,E,..... weighting.

(3) The term "pressure" is used only for the unweighted level.

(4) Unless otherwise specified, time is in hours (e.g., the hourly equivalent level is $L_{eq(1)}$). Time may be specified in non-quantitative terms (e.g., could be specified as $L_{eq(WASH)}$ to mean the washing cycle noise for a washing machine).

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APPENDIX D

Environmental Aspects of Potential Surface Water Runoff and
Leachate Migration from the Proposed Kapaa Refuse
Processing and Transfer Station

Environmental Aspects
of
Potential Surface Water Runoff and Leachate Migration
from the Proposed Kapaa Refuse Processing
and Transfer Station, Windward Oahu, Hawaii

August, 1987

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Environmental Consultant

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INTRODUCTION

The Kapaa (Sanitary) Landfill, located adjacent to Kawainui Marsh, near Kailua town in Windward Oahu, as Shown in Figure 1, has been operated since 1964 by the Refuse Division, Department of Public Works, City and County of Honolulu. The facility has been receiving an average of approximately 1000 tons/day of solid waste (refuse). The landfill area consists of two completed sites, and one which is nearing completion.

The City and County of Honolulu's concern about the possible generation and movement of leachate from the landfill facility to the 750 acre kawainui Marsh has prompted the funding of several studies.

Two of the previous studies, Bowles and Mink (1977), and EMCON Associates (1977) involved the possible generation and movement of leachate from the facility. A previous study by Burbank (1972) had investigated the relationship between the existing landfill operations and marsh water quality, while the University of Hawaii Water Resources Research Center (WRRC) (Chun and Dugan 1981; Dugan and Chun 1983) reported on an extensive baseline study followed by a lower level monitoring operation of the Kapaa Landfill and Kawainui Marsh area. The WRRC baseline study involved the use of six surface water stations and six water wells, all of which were strategically located throughout the landfill and marsh area. Water levels of the surface water and water well stations were monitored throughout the study and water samples were collected and analyzed for an array of constituents. The City and County of

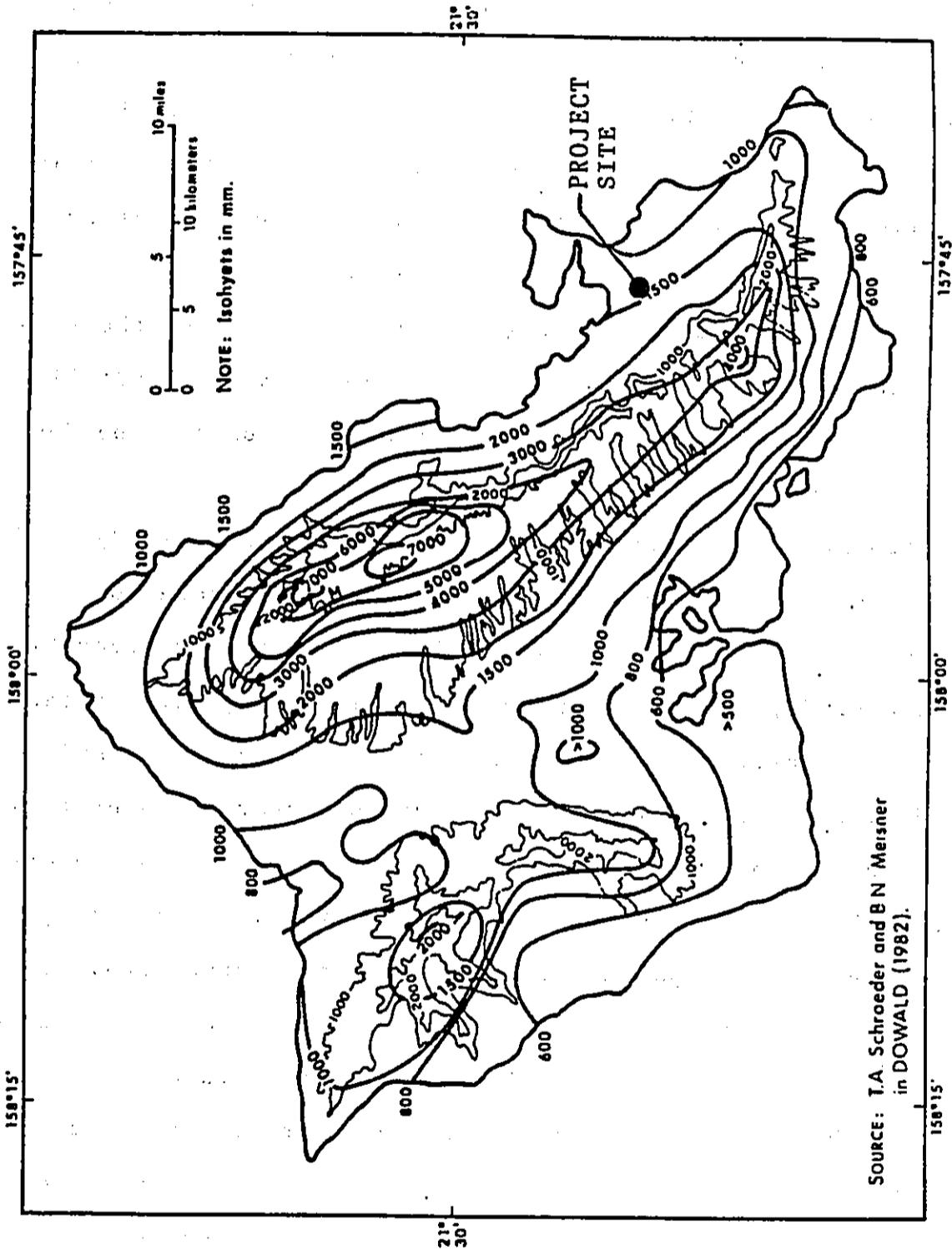


Figure 1. Site Location of Proposed Kapaa Refuse Processing and Transfer Station, Windward Oahu, Hawaii

From Figure 2, Page 5, reference: Giambelluca et al. 1984)

1 2 3 4 5 6 7 8 9 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

Honolulu also funded a detailed vegetative study of Kawainui Marsh (Smith 1978) which complemented two previous biological studies of Kawainui Marsh by Bienfang (1974) and Ford (1975).

The aforementioned studies involve the operation of the Kapaa Landfill, which includes the depositing, compaction, and daily covering of the approximately 1000 tons/day of municipal solid waste (refuse), whereas the present concern involves potential surface water runoff and leachate migration to Kawainui Marsh, as a result of the operation of the proposed Kapaa Refuse Processing and Transfer Station, located approximately 3/8 mile mauka of Kawainui Marsh (Figure 2). The latter does not involve on-site deposition of solid waste, but rather it is only a receiving, temporary storage (as necessary), and transfer location.

Potential surface water and leachate quality concerns would consequently be incidental. For example accidental spillage of refuse to and from the station (from which leached constituents could be extracted by storm water for potential transportation by surface and/or subsurface flow to the marsh); or washdown water that may be produced at the station during the washdown of station facilities and trucks. Good house-keeping and diligent policing of the spilled refuse will control the former, and properly designed evaporation/holding ponds would decrease the chance of excess washdown water reaching the marsh, except during times of significant storm events, at which time a considerable dilution would take place.

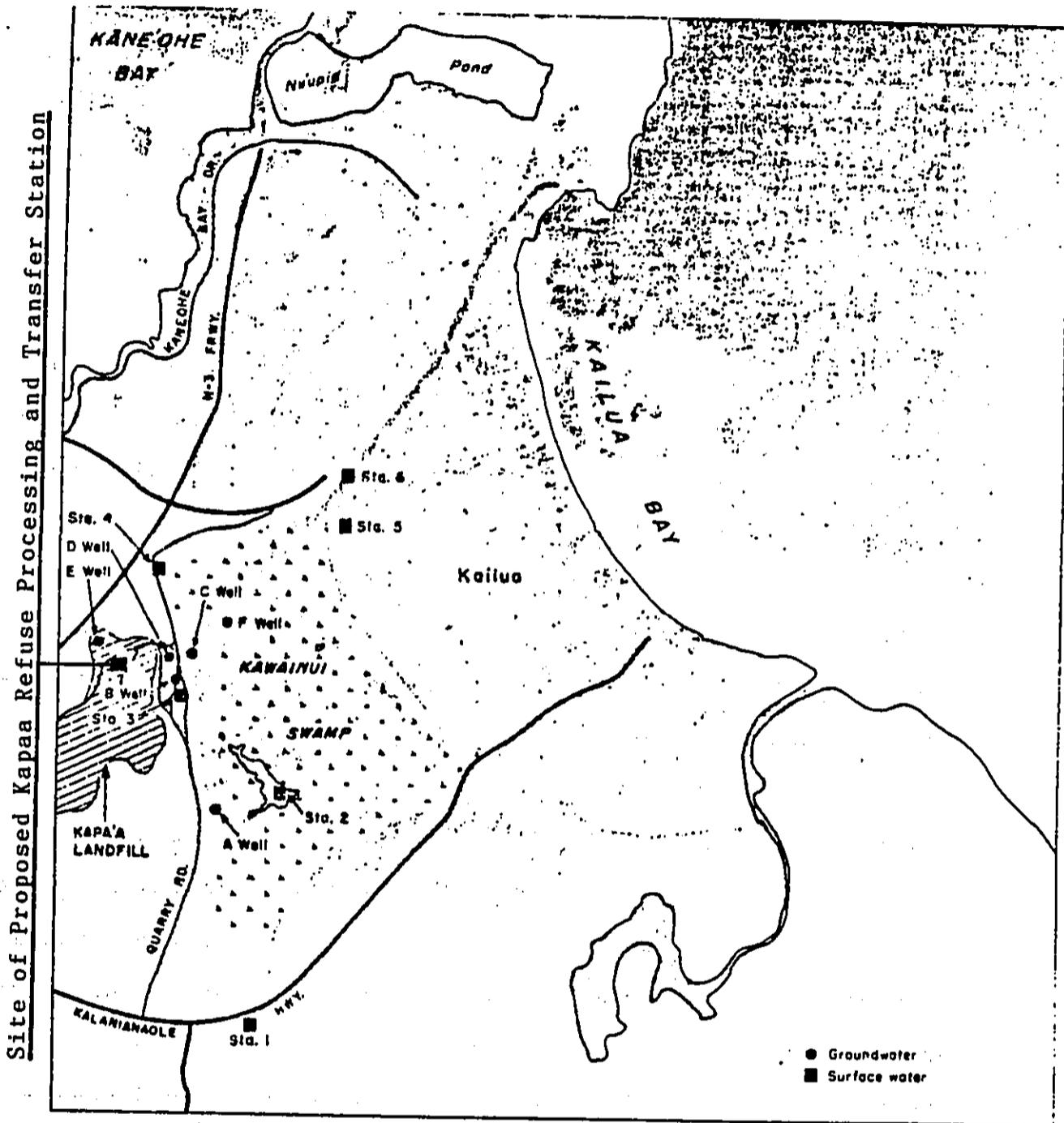


Figure 2. Surface Water and Well Water Sampling Sites near Kapaa Sanitary Landfill, Windward Oahu, Hawaii

From Figure 3, Page 14, reference: Chun and Dugan 1983.

PHYSICAL SETTING

The kapaa Landfill (adjacent to and mauka of Kawainui Marsh) is located in Maunawili Valley, an 18 sq mile basin that drains through Kawainui Marsh into Kailua Bay on the windward side of Oahu, Hawaii (Figure 1 and 2). The geologic features of this valley consist of Koolau Volcanic Series, which formed high cliffs along the south-western side of the basin, while the rocks of the Koolau and Kailua Volcanic Series formed two ridges that strike north-eastward and which separate the area from Waimanalo to the southwest, and Kaneohe to the northwest (Takasaki et al. 1969).

Deep in the valley, at the base of the high cliffs, older alluvium forms an apron, while the lower part of the valley is underlain by younger alluvium. This younger material forms Kawainui Marsh, the largest freshwater marsh in Hawaii.

It is postulated that Kawainui Marsh was once a freshwater lake that has been transformed by siltation into the marsh-like conditions that exist today. Along the front of this marsh area, as well as along the entire coastline, dune sand beach deposits and sparse outcrops of coralline limestone occur. The marsh is presently designated as a flood control-conservation area.

Maunawili Valley's groundwater, principally high-level and dike-confined, is located generally at elevations greater than 650 ft. The height of the basal water is less than 2 ft, with brackish conditions occurring near the shore. Groundwater probably moves north-eastward near the crest, due to geologic constraints, and discharges at numerous points as

springs at elevations of about 600 ft. These springs feed Kawainui Marsh and the area's two stream systems, Maunawili and Kahanaiki streams. The dependable yield of this groundwater reservoir was estimated by Takasaki et al. (1969) to be 6.7 mgd, of which approximately 2.7 mgd feeds the two stream systems.

At the inland margin of Kawainui Marsh groundwater in the dike compartment aquifer overflows into the marsh rather than flowing through the vertical face as occurs ordinarily in aquifer hydraulics. This is an important aspect inasmuch as leachate tends to flow along the water table surface instead of undergoing deep mixing in the aquifer. The surface of Kawainui Marsh is the surface of the general groundwater table in the region (Takasaki et al. 1969).

Of the two stream systems draining into Kawainui Marsh, Maunawili is the larger, with flow steadily increasing downstream to a maximum at the upper edge of the marsh. Takasaki et al., (1969) reported an estimated long-term average daily flow of 7.8 mgd for Maunawili Stream and 1.0 mgd for Kahanaiki Stream at the upper marsh edge, with a reported quantity of about 2.0 mgd being diverted from the area by Maunawili Ditch system which intercepted water from Makawao Stream, a tributary to Maunawili Stream. There are presently no continuous flow gages located on these streams. The median annual rainfall at the Kapaa Landfill is about 50 in., whereas, it is over 100 in. near the crest where the principal groundwater recharge occurs. The 100 yr, 24 hr frequency-duration storm for the landfill area is 13 in. (Giambelluca et al. 1984).

KAWAINUI MARSH

In considering the biological aspects of Kaiwainui Marsh, various aspects must be considered. The marsh is presently a flood-control facility for most of the Kailua area, and serves as a buffer zone and sink for sediment and nutrients that are produced by natural and human activities upstream of the marsh, including overland runoff. The marsh is also a receptacle for treated sewage effluent (although the major quantity of this effluent is scheduled to be diverted to the Kailua Wastewater Treatment Plant), and possibly leachate production from the landfill. Because of its size and location adjacent to an urban area, the marsh is desired by developers for housing, commercial ventures, and active recreation; and by conservationists for a wildlife sanctuary.

Biological Aspects

Kawainui Marsh has been altered, used and exploited since the discovery of the islands by Europeans, thus, no pristine vegetation exists. The vegetation that exists today is the result of past stresses to the system, and if the nature of these stresses change, the vegetation and other biological aspects of the marsh will adjust accordingly (Smith 1978).

The City and County of Honolulu funded study of the vegetative aspects of Kawainui Marsh by Smith (1978) was conducted to establish a vegetative baseline, and to gain insight, from a biological point of view, of the possible effects that further expansion (after 1978) of the Kapaa Landfill operation would have on the marsh ecosystem. Previous documents by

Bienfang (1974) and Ford (1975) had also addressed the environmental and biological conditions of the marsh ecosystem, but not in relation to the post 1978 expansion of the landfill operation. The biological aspects discussed herein will primarily focus on the vegetative (flora) considerations based on the report by Smith (1978), and on the fauna aspects reported by Ford (1975).

A sizeable portion of the permanently flooded area of the lower part of Kawainui Marsh is a floating bog, with layers of plants, roots, and peat floating over water. In general, wetlands, such as Kawainui Marsh, are not thought to be very sensitive to small environmental changes, inasmuch as they have an adaptive resistance to the harse conditions under which they exist. Thus, wetlands do not serve as sensitive bioindicators as could be the case for other ecosystems. In view of this, it is important to ascertain the plant species distribution in the marsh and to monitor these aspects over time (Smith 1978).

The entire Kawainui Marsh, inventoried by Smith (1978), can be segregated into two vegetation types, woody (forest) and marsh meadow. Both are considered secondary because they are composed of plants that had become established in previously disturbed areas; however, in general, the woody vegetation area was not considered to be in a position to be potentially affected by post 1978 landfill operation, nor the proposed refuse processing and transfer station. Thus, the main emphasis will be placed on the marsh meadow. No rare or endangered plants were found in Kawainui Marsh.

In the lower, permanently flooded portions of the marsh bulrush and sawgrass dominate; while California grass, with scattered strands of cattail and bulrush, dominate the upper, non-permanently flooded portion of the marsh (Smith 1978).

The biological aspects within Kaiwainui Marsh, in some ways, approach a "black box" concept, inasmuch as the actual biophysical-chemical relationships within the marsh are poorly understood at best. Only a portion of the inputs and outputs can be measured, nevertheless, it is generally agreed that water depth is the major factor in governing the distribution of wetland plants and that sedimentation is closely related. An increase in the nutrient load appears to have little effect on plant species distribution; however, little is known about the effects of heavy metal loadings and much less about nutrient decreases (Smith 1978).

Landfill operations typically produce leachate that contains significant to high concentrations of heavy metals, particularly iron. In the case of heavy metals, the concern is not particularly with the uptake within the plants themselves, but with the potential biomagnification (leading to toxicity) in the overall food chain. Water hyacinth and duckweeds are known to accumulate heavy metals, which are thus passed up the food chain.

Iron is usually the most prominent heavy metal constituent in landfill leachate; however, in the case of Kaiwainui Marsh Marsh iron-rich clays are contained in the incoming sediment. Thus, the fact that the plants did not show any iron

RESULTS OF WRRC WATER MOVEMENT AND QUALITY STUDIES

Although the previous hydrology/hydraulic studies by Bowles and Mink (1977) and EMCON Associates (1977) concluded that the present operation and proposed (post 1977) expansion of the Kawainui Landfill would not be expected to adversely affect the quality of the marsh water by way of leachate production and migration these studies were based on reviews of the existing literature on the hydrogeology of the region and on leachate production reported elsewhere. Burbank's (1972) study, which included field monitoring, also had found no evidence implicating the landfill operation as an influencing factor in the quality of the marsh water, but that study was of short duration and included only three sites--two surface water and one shallow well.

Despite strong evidence to the contrary up through 1977, the City and County of Honolulu elected to further explore the potential migration of leachate to the marsh. As part of this precautionary approach, the aforementioned WRRC project was funded which involved an intensive baseline water level and quality study (1978 through 1980) of six surface stations and six shallow water wells positioned to represent surface and subsurface water conditions throughout Kapaa Landfill and Kawainui Marsh from different landfill conditions (active and completed landfills and those not affected by landfill activity). The six surface water quality stations were located in the general vicinity of the Kapaa Landfill, while the six water wells were located in and around the landfill (Figure 2).

The baseline study was followed by a monitoring program, from 1981 through 1982 (Dugan and Chun 1983), at three of the baseline study's water wells and one surface water station using key water quality parameters.

The WRRC project (Chun and Dugan 1981) was designed to not only attempt to ascertain the quality and quantity, if any, of leachate migration into the marsh from the landfill, but to also define a baseline quality level against which future water quality data can be compared. In addition to serving as a valuable management device, the monitoring program was intended to increase what little is known of leachate production and migration from sanitary landfill operations in Hawaii.

For comparison purposes the highest median values during the baseline study of selected constituents from the project's positioned water wells are presented, along with the range and typical values of key constituents that are generally found in leachate from landfills, in Table 1. The values of the subsequent lower level monitoring program (Dugan and Chun 1983) were also quite similar to the baseline's median constituent values.

The one outstanding characteristic of leachate from landfill operations is a high Chemical Oxygen Demand (COD) concentration, or organic content, which has been reported to have a typical concentration of approximately 18,000 mg/L (Table 1); however, the highest median concentration of the six baseline monitoring wells was 38 mg/L which was essentially the same as the highest median concentration (39 mg/L) for the six baseline surface water stations.

TABLE 1. COMPOSITION OF LEACHATE FROM LANDFILLS IN COMPARISON TO THE HIGHEST MEDIAN VALUE FROM MONITORING WELLS A-F, KAPA'A LANDFILL, WINDWARD O'AHU, HAWAII

CONSTITUENT	LANDFILL LEACHATE COMPOSITION* (mg/l)†		MONITORING WELLS (A-F) HIGHEST MEDIAN VALUE
	Range	Typical	
5-Day Biochemical Oxygen Demand	2,000-30,000	10,000	--
Total Organic Carbon	1,500-20,000	6,000	--
Chemical Oxygen Demand	3,000-45,000	18,000	38 (F)
Total Suspended Solids	200- 1,000	500	77 (F)
Organic Nitrogen	10- 600	200	--
Ammonia Nitrogen	10- 800	200	8.4 (F)
Nitrate	5- 40	25	3.7 (A)
Total Phosphorus	1- 70	30	---
Ortho Phosphorus	1- 50	20	0.4 (B)
Alkalinity (as CaCO ₃)	1,000-10,000	3,000	577 (F)
pH	5.3- 8.5	6	---
Total Hardness (as CaCO ₃)	300-10,000	3,500	---
Calcium	200- 3,000	1,000	143 (A)
Magnesium	50- 1,500	250	94 (F)
Potassium	200- 2,000	300	9.3 (F)
Sodium	200- 2,000	500	386 (F)
Chloride	100- 3,000	500	715 (F)
Sulfate	100- 1,500	300	--
Total Iron	50- 600	60	23.3 (F)

*From *Engineering Principles* (Lovelace 1970, Part II, p. 332).

†Except pH.

From Table 8, Page 29, reference: Chun and Dugan 1981.

"No particular consistent correlation could be found to relate individual constituent levels of the surface water stations and monitoring wells to groundwater levels, rainfall, or seasonal and/or annual changes during the baseline study and subsequent monitoring period. There seemed to be a correlation between groundwater depth and quality and the surface water quality of Kawainui Marsh, which thus, suggests a significant interchange between groundwater quality and surface water quality in and around the Kapaa Landfill. If there is indeed a correlation between leachate production and the underlying groundwater quality, it was not apparent during the baseline and monitoring study phases. Thus, it was concluded that any correlation would have to be considered minor at best."

(Dugan and Chun 1983).

Consequently if the WRRRC studies (Chun and Dugan 1981; Dugan and Chun 1983) as well as the previous and complementary studies (Burbank 1972; Bowles and Mink 1977; EMCON Associates 1977; Smith 1978) involving the Kapaa Landfill could not identify detrimental water quality results within Kawainui Marsh, when up to an average of approximately 1000 tons/day of solid waste (refuse) was deposited in the landfill during 23 years of landfill operation, it is inconceivable that identifiable detrimental water quality problems would result in Kawainui Marsh as a result of the proposed operation of the Kapaa Refuse Processing and Transfer Station.

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