FINAL ENVIRONMENTAL IMPACT STATEMENT
FOR
CONSTRUCTION OF A ROADWAY ENTRANCE
TO LEEWARD COMMUNITY COLLEGE
WAIPIO AND WAIWA, EWA, OAHU

D.A.G.S. Job No. 02-10-1553.2

NOVEMBER, 1974
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>SECTION</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. PROJECT DESCRIPTION AND OBJECTIVES</td>
<td>1</td>
</tr>
<tr>
<td>A. Project Description</td>
<td>1</td>
</tr>
<tr>
<td>B. Project Objectives</td>
<td>3</td>
</tr>
<tr>
<td>II. PROBABLE IMPACT ON THE ENVIRONMENT</td>
<td>5</td>
</tr>
<tr>
<td>A. Description of the Existing Conditions</td>
<td>5</td>
</tr>
<tr>
<td>B. Environmental Impact</td>
<td>13</td>
</tr>
<tr>
<td>III. UNAVOIDABLE SIGNIFICANT ADVERSE EFFECTS</td>
<td>16</td>
</tr>
<tr>
<td>A. Construction Period</td>
<td>16</td>
</tr>
<tr>
<td>B. Long-term Use Impact of the Roadway</td>
<td>17</td>
</tr>
<tr>
<td>IV. ALTERNATIVES TO THE PROPOSED PROJECT</td>
<td>19</td>
</tr>
<tr>
<td>V. RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY</td>
<td>21</td>
</tr>
<tr>
<td>VI. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES</td>
<td>22</td>
</tr>
<tr>
<td>FOOTNOTES</td>
<td>23</td>
</tr>
<tr>
<td>DISPOSITION OF RESPONSES TO DRAFT ENVIRONMENTAL IMPACT STATEMENT</td>
<td>24</td>
</tr>
<tr>
<td>APPENDICES</td>
<td>A-1 to D-1</td>
</tr>
</tbody>
</table>
I. PROJECT DESCRIPTION AND OBJECTIVES

A. Project Description

The project proposes a four-lane roadway with a 60-foot right-of-way, located between Waipio Point Access Road and the southwesterly boundary of Leeward Community College. More specifically, the proposed roadway will be mauka (north) of the existing unpaved maintenance road for the jet fuel line, will intersect Waipio Point Access Road just mauka of the Waipahu Health Center, and will establish a connection between Waiawa Street and Waipio Point Access Road. The total length of the roadway will be approximately 0.7 miles. (See Figure 1, Location Map and Figure 2, Project Map, on pages 1a and 1b.)

Four travel lanes, each about 10 feet wide are planned. On-street parking will depend on traffic volumes. Principal design features are identified as follows:

- Design Speed: 30 m.p.h.
- Minimum Radius of Curvature: 250 feet
- Maximum Superelevation Rate: 6 percent
- Vertical Alignment: Maximum Gradient = 7.0 percent
  Minimum Gradient = 0.5 percent

Utilities will be installed within the roadway's right-of-way; these will include street lighting, electric lines, water line, drainage lines, sewer line, fire hydrants, and telephone lines. Utility lines will be placed underground. Portions of the storm drainage system and sewer system will be constructed outside of the right-of-way.
FIGURE 2 - LEGEND

Places
A  Leeward Community College
B  U.S. Navy
C  Waipahu High School's Athletic Field
D  Waipahu High School
E  Waipahu Health Center
F  Horita Realty
G  Agricultural Area
H  Waiawa Peninsula Ponds (Part of the Pearl Harbor Wildlife Refuge)
I  Pearl City Sewage Treatment Plant
J  Waiawa Stream
K  Existing Single Family Residential Area
L  Middle Loch

Roadways:
1  H-1 Interstate Highway
2  Waiawa Interchange
3  Farrington Highway
4  Kamehameha Highway
5  Waiawa Street
6  Waipio Point Access Road
7  Cane Haul Road (unpaved)
8  U.S. Navy's Maintenance Road for jet fuel line road
9  Old Railroad Right-of-Way (unpaved dirt road)
10  U.S. Naval Patrol Road (unpaved)
11  Lehua Avenue
12  Private dirt road

Red Line  Indicates Project Beginning and End
FIGURE 13
TYPICAL ROAD HALF SECTION
Scale: 1/4" = 1'-0"

* MAY VARY - TO BE VERIFIED
BY SOILS TEST DATA DURING CONSTRUCTION
Full-width sidewalks will be constructed along the length of the roadway. Trees will be planted in tree wells within the sidewalk area. Retaining walls will also be constructed along portions of the proposed roadway which are necessary to minimize the effect of the cut and to protect existing structures and utility lines in those areas which lie above the roadway. A chain link fence will be constructed above the retaining wall to prevent pedestrian accidents on those portions of the retaining wall over four feet high.

A 30-feet roadway will be constructed on the last 550-foot segment at the Diamond Head end of the proposed project. This portion will be developed with curbs, gutters, sidewalks, street trees, a drainage system, and street lighting on the mauka side only. The primary reason for the construction of a 30-foot roadway is that adjacent land owners (for this portion of the proposed project) are not sharing the project’s construction costs.

The construction period for the project is estimated to be approximately one year. Specific work items during construction would include, but are not limited to, clearing, grubbing, grading, and construction of street improvements and utilities. Landscaping will also be provided within the right-of-way and wherever an area is cleared and grubbed.

The project’s estimated cost is approximately $2,820,000. Government funds for the proposed project were provided through
the following appropriations:

<table>
<thead>
<tr>
<th>ACT</th>
<th>SLH</th>
<th>ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>155</td>
<td>1969</td>
<td>E-47</td>
</tr>
<tr>
<td>197</td>
<td>1971</td>
<td>C-12</td>
</tr>
<tr>
<td>197</td>
<td>1971</td>
<td>E-128</td>
</tr>
<tr>
<td>176</td>
<td>1972</td>
<td>C-21</td>
</tr>
</tbody>
</table>

B. Project Objectives

This proposed project is being coordinated through several agencies for funding purposes. Each agency has an objective to meet which the proposed roadway seems to satisfy. These objectives are:

1. To meet the need for a second access to Leeward Community College. At present, the only access is across the divided Farrington Highway. Congestion and potential hazards are created especially during morning hours when vehicles from the Honolulu direction must make a left turn into the present access road; the traffic signal delays create a back-up of vehicles on Farrington Highway. During afternoon hours, Ewa-bound vehicles exiting from the college produce a back-up on the access road. A second ingress-egress to Leeward Community College is expected to reduce present and future congestion at the existing access road. The proposed project, when constructed, would allow the college's internal
roadway network to link with this second entrance.

2. To provide accessibility to parcels of land makai of the proposed roadway. The development of these parcels, designated as urban and expected to be zoned for medium density apartments, requires adequate vehicular access.

3. To provide public access to Waipahu High School's athletic field. During sports events, congestion and delays are evident when entering and leaving the area.
II. PROBABLE IMPACT ON THE ENVIRONMENT

A. Description of Existing Conditions

1. Land Use. The project area is presently cut across by several unpaved dirt roads (see Figure 2, Project Map and Figure 4, Geological Survey Map). A cane haul road lies between Waipahu High School and the school's athletic field and intersects Waipio Point Access Road makai of the Waipahu Health Center. An unpaved dirt road runs along the makai boundary of Leeward Community College and the U. S. Naval Reservation and connects to the U. S. Navy's unpaved dirt maintenance road (used for the jet fuel line). This dirt road eventually meets the cane haul road. Within the fenced perimeters of the U. S. Naval Reservation, there is an unpaved Naval Patrol Road. In addition to the unpaved dirt roads, there is a paved road leading from the cane haul road to the upper Waipahu High School's athletic field.

Lands adjacent to the proposed roadway are in diverse uses. On the mauka side of the proposed roadway, from a west to east direction, the land is used by Waipahu High School campus and athletic field, U. S. Naval Reservation (Navy Drum Storage area), and Leeward Community College. On the makai side, from a west to east direction, land usage includes Waipahu Health Center, vacant lots with scattered refuse and debris, and agricultural lots.
containing single family dwellings. The agricultural lots appear to be small (cultivated areas average two acres) growing truck farm crops and watercress.

2. Present and Proposed Projects in the Area. The State's Energy Corridor alignment\(^2\) (see Figure 1, Location Map) runs mauka of the proposed roadway except for sections where the alignment is within the cane haul road and follows the boundary of the Navy property. The Corridor, which is subterranean, contains 2 pipelines that are 16 and 10 inches in diameters. It is anticipated that 3 more pipelines will be installed within the Corridor as the need arises. The 10-inch line presently transports aviation fuel, the 16-inch line transports synthetic natural gas (SNG).

A residential-apartment development is planned for the vacant land adjacent to the Waipahu Health Center to implement the land use designation and proposed zoning of the parcel.

Also being planned is the Leeward Oahu Bicycle Route, Section 3\(^3\) (identified in Figure 5, Leeward Oahu Bicycle Transportation Plan, Principal Routes, 1973, Section 3, page 6a). Plans call for the bicycle route to follow the old railroad right-of-way.

Additionally, the State Department of Transportation
LEEWARD OAHU BICYCLE TRANSPORTATION PLAN
PRINCIPAL ROUTES
1973

Scale 1" = 1.2 miles

SECTION 4
PEARL CITY TO NANAKULI
15 MILES

SECTION 3
AIEA TO PEARL CITY
3 MILES

SECTION 2
MIDDLE STREET TO HALAWA STADIUM
3 1/4 MILES

LEGEND
--- Bicycle Route
— Special Spur
● Project Limits

FIGURE 5

Source: Leeward Oahu Bicycle Transportation Plan, Principal Routes, Oahu Transportation Planning Program 1973
noted in its review of the draft environmental impact statement:

"The State Department of Transportation is currently assessing the possibility of a ferry landing in the Pearl City Peninsula with vehicular access via the railroad right-of-way between Lehua Avenue and Waipio Access Road. The use of this roadway entrance to the College could be a possible alternate."

Ordinance No. 3842, Section II, City and County of Honolulu, states that a 60-foot roadway is to be established between Waipio Point Access Road and Lehua Avenue, which will traverse an area bounded on the mauka side by the H-1 Interstate Highway and Farrington Highway, on the makai side by the Pearl Harbor Middle Loch, on the Waipahu side by Waipio Point Access Road, and on the Pearl City side by Lehua Avenue. Appendix C provides further information on Waiawa Road Widening and Extension.

3. Geology. The rock type in the immediate vicinity of the proposed roadway is described as sedimentary Ra type, defined as:

"Unconsolidated noncalcareous deposits of alluvium. Consists of black to brown coarse detritus only slightly weathered, or in some areas it consists of black sticky mud called 'taro patch clay.'"

4. Topography. The topography of the area adjacent to the roadway varies. Some portions are gently sloping; however, the land is characterized by various grades, ranging from a 2 percent to 20 percent slope. Sloping
occurs in a northerly direction. Elevation of the area is between 10 and 60 feet above sea level.

To the south, the natural surface runoff pattern is toward Pearl Harbor. Drainage from the area flows into the Waikele and Waiawa drainage areas (see Figure 6, Pearl Harbor Drainage Basin, page 8a).

The average annual rainfall is 26 inches; average wind velocity is 12 miles per hour with prevailing winds from the east and northeast.

5. Flora and Fauna. The vegetation in the surrounding vacant areas is anthropogenic in origin; that is, the original vegetation cover has been removed. Successive uses of the area for cattle raising, sugar cane cultivation and diversified agriculture have removed the area's original vegetation. At present, vegetation within the proposed road alignment is sparse and dominated by koa haole (*Leuena glauca*).

Although no mammals were observed, it is not unlikely that mongoose, rats, mice, and possibly feral cats live within this area.

The proposed roadway is approximately 0.8 mile away from one of the Federal Pearl Harbor Area's Wildlife Refuge. This refuge area, identified as the ponds on Waiawa Peninsula (more commonly referred to as Pearl City Peninsula; see Figure 2, page 1b), includes the
following avifauna: aeo (Hawaiian Stilt), cattle egrets and migratory shorebirds. Concern for the avifauna in the adjacent area led to a field reconnaissance by a wildlife biologist (October 10, 1974) with the Department of Land and Natural Resources. This field reconnaissance confirmed the possibility that there may be alae keokeo (Hawaiian Coot) and alae ula (Hawaiian Gallinule) in the lower marsh lands on the extreme Diamond Head end of the proposed roadway alignment. It is noted, however, that the roadway alignment is not within this marsh area.

6. Air and Noise. Presently, there are no known sources of significant air emissions in the vicinity. (A review of land uses and activities within the immediate area provided this conclusion.) The proximity of major thoroughfares (Farrington Highway, H-1 Freeway, Kamehameha Highway) does suggest that the air emissions from vehicles are present and may be especially noticeable in the carbon monoxide count. There is no Department of Health air quality data for this specific area.

A more significant nuisance is the dust created by cars and trucks traveling on the unpaved dirt roads. This would be especially true for dust created by large trucks traveling on the cane haul road.

Noise is presently generated by several types of activities. These noise producing activities are:
7. **Aesthetic Quality.** Pearl Harbor's Middle Loch can only be viewed from the higher elevated slopes and multi-storied buildings of Leeward Community College since it is obscured from other vantage points by natural terrain and vegetation.

There have been considerable "dumping" of refuse, abandonment of automobiles and scattering of debris along the cane haul road and the unpaved dirt roads within the project area which give the roadsides an unsightly appearance.

8. **Water Quality.** Pearl Harbor has been studied and surveyed extensively in recent years. Several of the most recent reports have been reviewed; a portion of their findings on Middle Loch is contained in Appendix A. The existing water classification of Middle Loch, the discharges into Middle Loch and the present water quality of Middle Loch are briefly discussed below.

a. **Water Classification.** The waters of Middle Loch
are classified Class A and Class B waters. The Class B designation applies only to a limited area next to the boat docking facilities; the remaining waters are designated Class A. The objective of Class A waters is:

"It is the objective for this class of waters that their use for recreational purposes and aesthetic enjoyment not be limited in any way. Such waters shall be kept clean of any trash, solid materials or oils and shall not act as receiving waters for any effluent which has not received the best practicable treatment or control compatible with the standards established for this class."^6

b. Sources of Discharge. Middle Loch acts as the receiving body of water for several principal discharges which are listed below:

i. Waiawa Stream contributes the largest volume of discharge. The "Report on Pollution of the Navigable Waters of Pearl Harbor,"^7 describes this discharge: "Waiawa Stream discharges into Middle Loch from a drainage area of 26.4 square miles above the USGS gauge. Significant amounts of agricultural runoff and approximately 0.5 mgd of secondary treatment sewage effluent enter the stream. Mean flow over the 3-month period was 74.2 mgd." Discharges into Waiawa Stream itself are listed in the "Proceedings of the Conference
in the Matter of Pollution of the Navigable Waters of Pearl Harbor and Its Tributaries-Hawaii," as being:

- Army Radio Station Stabilization Ponds (normally no discharge) \( Q = 0.01 \text{ mgd} \)
- Animal Wastes (pigs and cattle) \( Q = 0.41 \text{ mgd} \)
- Pacific Palisades secondary STP effluent trickling filter \( Q = 0.653 \text{ mgd} \)
- Oahu Sugar Company's Waiawa Ridge surplus irrigation water (5 outlets)

ii. Approximately 14 mgd of spring water from the adjacent Waiawa Spring flows into Middle Loch (see Figure 4, page 5a).

iii. A third source of discharge is the effluent from Pearl City Sewage Treatment Plant. The Pearl City STP contributes 2.6 mgd of effluent to Middle Loch. Appendix A provides a breakdown of waste loading discharged by the STP.

iv. Although not monitored, small diffused sources of waste drain into Middle Loch. These would include waste from ships, storm drains and small individual raw sewage outfalls.

c. Water Quality. Middle Loch, like the entire Pearl Harbor estuary, has low water quality. Middle Loch's water quality is characterized by coliform and phosphorus
values which exceed the State's Water Quality Standards. Although the quantity of stream sediment (Waiawa Stream) is not known, it appears to be a substantial amount.

B. Environmental Impact

1. Geology, Topography and Climate. No impact is foreseen in these areas except that existing terrain will be affected by the roadway's cuts, retaining walls and other appertaining structures.

2. Flora and Fauna. Clearing and grubbing will eliminate the present vegetation within the roadway's right-of-way, the sewer and drainage easement, and other areas which are necessary for grading and construction purposes.

With regard to avifauna, it should be noted that the proposed roadway alignment, in itself, is not anticipated to destroy or significantly alter the habitat or feeding grounds of the existing avifauna. Indirect impacts of increased traffic and subsequent noise, especially during construction, may cause the avifauna to migrate. It is felt that the resulting traffic will create problems initially, but the affected wildlife can adjust to this altered environmental setting.

3. Land Requirements. Land must be acquired, in fee or by easement, from the following: State of Hawaii (Waipahu Health Center, Waipahu High School), City and County of
Honolulu (Waipahu High School), Herbert K. Horita Realty, Inc., and U. S. Department of the Navy. A detailed breakdown of land requirements is given below:

<table>
<thead>
<tr>
<th>OWNER</th>
<th>Proposed Roadway Acquisition</th>
<th>Original Lot Size</th>
<th>Approx. Land to be Acquired</th>
</tr>
</thead>
<tbody>
<tr>
<td>State of Hawaii</td>
<td>FEE</td>
<td>1.05 acres</td>
<td>0.002 acre</td>
</tr>
<tr>
<td>Waipahu Health Center</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State of Hawaii</td>
<td>FEE</td>
<td>18.87 acres</td>
<td>0.62 acre</td>
</tr>
<tr>
<td>Waipahu High School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City and County of Honolulu</td>
<td>FEE</td>
<td>25.97 acres</td>
<td>0.89 acre</td>
</tr>
<tr>
<td>Waipahu High School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Herbert K. Horita Realty, Inc.</td>
<td>FEE</td>
<td>18.94 acres</td>
<td>2.26 acres</td>
</tr>
<tr>
<td>United States of America</td>
<td>EASEMENT</td>
<td>43.81 acres</td>
<td>0.54 acre</td>
</tr>
<tr>
<td>Department of the Navy</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. **Air and Noise.** During construction, there will be an increase in air emissions and noise. This impact could be considered adverse; therefore, it is more appropriately discussed under Section III.

5. **Aesthetic Quality.** The roadway will not interfere with the present view of Middle Loch. Refuse, debris and abandoned automobiles within the project areas will be removed to an appropriate disposal site.

6. **Water Quality.** No significant impact is foreseen on Middle Loch's water quality. The drainage outlets to be constructed (see Figure 1, Location Map, pg.1a) will have a total discharge flow of approximately 775 cfs.
Outlet #1 = 110 cfs; Outlet #2 = 340 cfs; and Outlet #3 = 325 cfs. This flow is intermittent, occurring only during and after rains. A significant amount of this runoff already enters Middle Loch in sheet flows across the area. This proposed project would consolidate the storm waters from the existing drainage facilities, collecting surface runoff from the roadway, lands mauka of the project and vacant parcels makai of the project, and transport the runoff through the proposed drainage systems to the three outlets to discharge into Middle Loch. The quality of the storm water should not differ from its present characteristics and should not alter the existing water quality of Middle Loch.
III. UNAVOIDABLE SIGNIFICANT ADVERSE EFFECTS

A. Construction Period

Adverse effects are anticipated during the construction period. The impact will be temporary and can be mitigated and/or minimized by establishing controls on construction activities.

During construction, several effects will be noticeable by the residents in the vicinity:

1. Trucks and other construction equipment traveling through and working within the area will create fugitive dust and noise.

2. There will be increased traffic due to the construction activity along Waiawa Street and Waipio Point Access Road.

3. Earth moving activities may contribute to silting in Middle Loch if there is significant rainfall. It is noted that before a Grading Permit (City and County of Honolulu, Ordinance No. 3968) can be obtained, temporary erosion control measures and the sequence of construction operations must be submitted to the Chief Engineer of the City and County of Honolulu for approval.

4. Construction and site work in the vicinity of the Energy Corridor create the possibility of an accidental breakage of a pipeline within the Corridor.
The volatile nature of the fuels being transported places significant concern on this type of accident. The contractor is required to notify the owners of the pipelines, or their representatives, of the construction of the roadway near or over the pipelines. Representatives are then present during construction to take specific measures should a pipeline be ruptured.

In order to minimize the adverse effects of construction activities, the contractor will be required to adhere to certain pollution control requirements as provided in Appendix B (Section 1G - Environmental Protection).

B. Long-term Use Impact of the Roadway

The development of the roadway would produce the following continual impacts:

1. A greater intensity of usage than the existing unpaved roads, as indicated by the objectives that this roadway would satisfy.

2. Waiawa Street and Waipio Point Access Road would also receive more intense usage, as vehicles enter these streets from Farrington Highway.

3. The residents abutting the roadway may find that noise attributable to traveling vehicles will increase.
4. Approximately 4.3 acres will be required for the proposed project. This land would be committed to roadway use for a long-term period.
IV. ALTERNATIVES TO THE PROPOSED PROJECT

A. **No Action**

If the plans for the proposed roadway are aborted, the objectives cited in Section I.B. would not be fulfilled and the existing conditions discussed in Section II will remain unaltered.

B. **Satisfy Single Objective**

The proposed roadway would satisfy multiple objectives. An alternative consideration would be the construction of separate roadways to satisfy the needs of individual facilities. However, it should be pointed out that this project was pursued due to the economic savings and benefits which a single roadway would provide. It should also be noted that plans were originally developed for a roadway to serve the planned residential-apartment use parcel but were rejected by the City and County of Honolulu in favor of a through street which would be consistent with the City's Ordinance for the construction of a 60-foot wide roadway from Waipio Point Access Road to Lehua Avenue.

C. **Following the Existing Alignment**

The present unpaved maintenance road for the jet fuel line was considered for the proposed alignment. However, the existing road is narrow (10 to 15 feet) and constructing a
60-foot wide roadway along that alignment would not be feasible due to the proximity to the swamp areas.
V. RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Both the short-term and long-term uses of the proposed road will be to accommodate vehicles going to and from the facilities fronting the roadway. The road is designed to accommodate the present and future needs of the adjacent area.

The 60-foot right-of-way will be dedicated to the City and County of Honolulu after construction; the City would then be responsible for maintainence of the roadway. Plans and designs are being prepared so that the roadway will be constructed to meet the requirements of the City. At present, it is not known if the City will accept the 30-foot wide portion of the roadway. If the City does not accept this portion, the State will probably maintain it.
VI. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The basic commitment of resources proposed by this project will be the land within the road's right-of-way. The road will be a permanent structure and the commitment of land, labor and materials will be, for all practical purposes, irretrievable.
FOOTNOTES

1. Maximum Superelevation Rate - Superelevation is a traffic engineering term and is defined as the sloping of the pavement toward the center of curvature on a horizontal curve in the roadway to counteract the centrifugal force, keeping the vehicular movement toward the road's surface. The maximum superelevation rate refers to the maximum allowable sloping determined by the geometric design of the roadway and the weather conditions and terrain of the area.


MEMORANDUM

TO: KeNam Kim, Comptroller
    Department of Accounting and General Services

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

SUBJECT: Draft Environmental Impact Statement for the
         Proposed Construction of a Roadway Entrance to
         Leeward Community College

This Office has received a total of sixteen (16) responses
to the draft environmental impact statement indicated above. After
reviewing the comments received, we find that six (6) agencies pro-
vided relatively significant criticisms and recommendations which,
we feel, deserve your special consideration. These agencies are
identified as follows:

1. Department of General Planning, City and County of
   Honolulu.
2. U.S. Department of the Interior
3. Department of Health
4. Environmental Center
5. Water Resources Research Center
6. Department of Transportation

We suggest that individual responses be sent to them with a carbon
copy transmitted to this Office for our information and files.
After evaluating both the comments received and the subject document, this Office provides, for your consideration, the following recommendations for revision of the draft environmental impact statement.

1. Necessary revisions to the draft statement should be incorporated into the text of the final statement in order to achieve a comprehensive informational statement. The disposition of each comment received during the review period should be appended to the text of the final statement to document consideration of each comment.

2. Figure 1 should be replaced by a location map that clearly identifies:
   a. the proposed roadway;
   b. the names of existing roadways that are mentioned in the text;
   c. and, the existing structures and landmarks that are used in the text.
   d. This Office also suggests that a scale be provided for Figure 1.

3. The primary objective of the proposed project is apparently unclear to some of the reviewers, as evidenced by the letters from the Environmental Center and the Water Resources Research Center. After evaluating the section on objectives, this Office, too, finds some sections unclear. We offer the following questions and recommendations for your serious consideration.

   The use of the words primary and principal (pages 4 and 5) makes the statement of objective somewhat confusing. Is the principal objective of providing an access road to Waipahu High School, another primary objective or is it secondary to the primary objectives of providing an access to Leeward Community College and future adjacent land uses?

   If only the objectives stated on page 4 (second access to Leeward Community College and access to adjacent future land uses) are taken as the primary objectives, the comments from the Environmental Center and the Water Resources Research Center are very well taken. The route designed for these two purposes does seem more accommodating to the potential development of residences rather than as an access to Leeward Community College. The reason for this conclusion is stated clearly on page two of the Environmental Center's comment (point 1, sentences 5, 6, 7) and point 1 of Water Resources Research Center's comment.
This Office strongly suggests that this section be rewritten to clearly state your objectives, making clear distinction between primary and secondary ones. Also, the design of the proposed roadway should be assessed to describe the manner in which the stated objectives will be met. This discussion should state both the negative aspects of the design (such as those stated by the Environmental Center) as well as the benefits of the selected route.

Also, please note the Department of Transportation's comment #2. If the design of the proposed facility will accommodate the Department of Transportation needs, the statement of objectives should state this.

4. The draft EIS states that the availability of the new roadway and utilities will allow for the development of residential units adjacent to the proposed facility. However, there is no elaboration of the environmental consequences of the anticipated housing development. As the availability of a roadway is one of the critical factors in allowing urbanization to proceed, this Office has determined that an assessment of the environmental consequences is necessary. The EIS must go beyond stating that the project "would allow the development of adjacent parcels into higher land uses..." The final environmental impact statement should focus on the long-range secondary impacts (such as resulting air pollution, increased surface runoff, increased demand on public utilities and services, etc.) which will result from the residential development.

5. Energy Corridor. The possibility of accidentally hitting and rupturing the state's energy corridor was mentioned in the environmental impact statement, page 17 point 5. However, we note that no contingency plan was provided in case of this accident occurring. This Office recommends that such a plan be formulated, adopted and discussed in the final environmental impact statement.

6. The section on Land Use should be expanded to include the amount of land to be acquired from each of the following parcels: The U.S. Navy, the two (2) large estates, Waipahu High School, and Waipahu Health Center.

7. The information provided by both the City and County of Honolulu's Department of General Planning and the Department of Transportation Services regarding the design of the proposed facility should be incorporated into the final statement.

The clarification on the design of the proposed facility provided by the Department of Transportation Services...
is extremely important. We are looking forward to appropriate changes in the final statement.

8. The information provided on the Geologic Structure of Pearl Harbor seems irrelevant to the subject of the environmental impact statement. We recommend that the first paraphrased portion of this section be deleted. The section on water quality, pages 12 and 13 contains much detail and background information that we feel is unnecessary. We recommend that this portion be condensed to provide only enough information that is pertinent to the conclusion provided on page 15.

9. Miscellaneous Information

a. The technical term, "maximum superelevation rate - 6%" (page 1) should be defined for the benefit of those reviewers who are not familiar with engineering terms.

b. Will sidewalks be constructed on both sides of the proposed roadway?

c. Regarding the installation of chain link fences, what is the hazardous situation that makes it necessary to install the fence? Perhaps a discussion on the design of the retaining and safety structures, the existing topographic condition and the existing use of the site will provide enough information to the reader to make one understand the need for the safety fence.

This Office hopes that the recommendations provided above will be useful in revising the draft statement. Should your department have questions regarding the comments made, please do not hesitate to call us.

Thank you for the opportunity to review this statement.

cc: Environmental Communications
List of Agencies Responding to the Draft Environmental Impact Statement for Leeward Community College Access Road.

County Agencies

1. Department of Public Works, City & County of Honolulu, (Aug. 13).
2. Building Department, City & County of Honolulu, (Aug. 27).
4. Department of General Planning, City & County of Honolulu, (Sept. 3).
5. Department of Land Utilization, City & County of Honolulu, (Sept. 10).
6. Department of Transportation Services, (Sept. 18).

State Agencies

2. Water Resources Research Center, University of Hawaii, (Sept. 9).
3. Environmental Center, University of Hawaii, (Sept. 9).
4. Department of Health, (Sept. 11).
5. Department of Transportation, (Sept. 16).

Federal Agencies

2. Department of the Army, (Aug. 27).
4. Corps of Engineers, Department of the Army, (Sept. 5).
5. Department of the Air Force, (Sept. 11).

Note: Date of letter is enclosed in parenthesis.
It is also noted that plans were originally developed for a roadway to serve the planned residential-apartment use parcel; this was rejected by the City in favor of a through street which would be consistent with the City's Ordinance for a 60-foot wide roadway to Lehua Avenue.

Item 5 - Pages 20 and 21 of the final environmental impact statement provide information on measures to be taken in reference to the pipelines in the Energy Corridor.

Item 6 - Land acquisitions are provided on page 19 of the final environmental impact statement.

Item 7 - The Department of Transportation's and Department of Transportation Services' comments are included in the final environmental impact statement.

Item 8 - The information on the Geologic Structure of Pearl Harbor is included in Appendix D rather than the text of the final environmental impact statement.

Item 9 - Elaboration has been included in the final environmental impact statement to provide the information requested.

We hope these responses have adequately covered the comments provided by your office. The final environmental impact statement should be transmitted to your office shortly.

Very truly yours,

KENAM KIM
State Comptroller

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

Dear Dr. Marland:

Subject: Draft Environmental Impact Statement for Proposed Construction of a Roadway Entrance Leeward Community College

Thank you for your cover letter of September 25, 1974, regarding the above indicated draft environmental impact statement. As suggested, we have sent written letters in response to the comments received to each agency, along with a carbon copy to your office.

In reply to your office's own comments, we offer the following:

**Item 1** - This has been accomplished.

**Item 2** - Figure la has been included and adequately identifies the areas and roadways mentioned in the text.

**Item 3** - The section of objectives of the proposed project has been revised and more clearly states the project's purposes.

**Item 4** - The scope of the draft environmental impact statement and the final environmental impact statement covers only the direct and indirect effect of the roadway. The impact of any future urban development in the area would be determined separately and the requirement for an environmental impact statement made at the appropriate time.
September 18, 1974

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

Dear Dr. Marland:

Subject: Draft EIS for the Construction of a Roadway Entrance to Leeward Community College Waipio and Waiawa, Ewa, Oahu

The second paragraph on page 1 indicates that the roadway is being designed for two travel lanes and two parking lanes. This assumption is erroneous because our primary intent is to provide for four travel lanes with ten-foot widths for each lane.

Parking will be permitted only if traffic volumes are less than anticipated.

Very truly yours,

GEORGE C. VILLEGAS
Director
Mr. George Villegas
Director
Department of Transportation Services
City and County of Honolulu
Honolulu, Hawaii 96813

Dear Mr. Villegas:

Subject: Draft Environmental Impact Statement for Proposed Construction of a Roadway Entrance
Leeward Community College

Thank you for your comments dated September 18, 1974, on the above indicated draft environmental impact statement. The preparation of the final environmental impact statement reflects the proposed project's plans for four (4) travel lanes with ten-foot widths for each lane.

We appreciate the information provided and will continue to coordinate this project with your Department.

Very truly yours,

KENAM KIM
State Comptroller

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

September 16, 1974

Dear Dr. Marland:

Subject: Draft Environmental Impact Statement  
Roadway Entrance to Leeward Community College Waipio and Waiawa, Ewa, Oahu

We have reviewed the subject statement and have the following comments to make:

1. The statement should include a plan which clearly shows the school boundary, the subject roadway and its termini, the surrounding land uses, and the appropriate labeling to correspond with the narrative;

2. The State Department of Transportation is currently assessing the possibility of a ferry landing in the Pearl City Peninsula with vehicular access via the railroad right-of-way between Lehua Avenue and Waipio Access Road. The use of this roadway entrance to the College could be a possible alternate;

3. Remove "(20 appearing in the first line on page 8; and

4. The word "transports" appearing in the eleventh line on page 17 should read "transported."

Sincerely,

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

Dear Mr. Wright:

Subject: Draft Environmental Impact Statement for Proposed Construction of a Roadway Entrance Leeward Community College

Thank you for your comments dated September 16, 1974, on the above indicated draft environmental impact statement.

Your comments and recommendations have been incorporated into the final environmental impact statement; more specifically, these include:

Item 1 - A new figure, an aerial photograph depicting the various land uses, the proposed roadway, etc., has been included in the final environmental impact statement.

Item 2 - The information provided by the Department of Transportation regarding the possible utilization of the proposed roadway for ferry landing activities has been incorporated into the statement.

Item 3 - The first line on page 8 has been revised to read "(2)", instead of "(20)."

Item 4 - The word "transported" has been included on page 17.

We hope these revisions provide adequate considerations to your comments.

Very truly yours,

KENAM KIM  
State Comptroller  

RR/si  
cc: Dr. Richard Maryland
DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 7th AIR BASE WING (PACAF)
APO SAN FRANCISCO 96565

DEEE (Mr Kimura, 4492158) 11 SEP 93/4

SUBJECT: Draft Environmental Impact Statement

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

We have no comments to render relative to the draft environmental impact statement for the Roadway Entrance to Leeward College project.

ALLAN M. YAMADA
Asst Dep Comdr for Civil Engg

NO RESPONSE NECESSARY.
September 11, 1974

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

Subject: Draft Environmental Impact Statement for Construction of a Roadway
        Entrance to Leeward Community College Waipio and Waiau, Ewa, Oahu

The following are our comments pertinent to the subject project in areas
of our official concern:

Noise and Radiation

If all items in controlling noise as set in Appendix B followed, noise
although a factor, will be minimized. While traffic does create noise, better
roads reduce levels from old ones.

Sanitation

No additional comments can be made on pollution control. The Environmental
Protection suction is well covered. No environmental sanitation problem is foreseen
on this proposed development.

Pollution Control

In addressing the Air Pollution potential of a project, effects on Ambient
Air Quality Standards must be presented. This can only be done with facts, figures
and projections on the affected development in the project area.

When making statements in an Environmental Impact Statement there has to be
facts to support these statements. Undocumented statements are of no value in determining
environmental impact.

Section 1G, Environmental Protection is good, but only good for the
construction phase of the project. What about the longer term effects? The
Environmental Impact Statement is a device by which the author(s) show that long term
effects have been considered and their consideration explained.
Honorable Walter E. Quisenberry  
Director  
Department of Health  
P.O. Box 3378  
Honolulu, Hawaii  96801  

Dear Dr. Quisenberry:

Subject: Draft Environmental Impact Statement for Proposed Construction of a Roadway Entrance Leeward Community College

We have received your comments dated September 11, 1974, on the above indicated draft environmental impact statement.

In response to your Department's comments on the air quality and long-term environmental impact sections, we have added more details in the final environmental impact statement which should provide the information requested. These specific revisions are on pages 14, 15 and 23 and are attached for your information.

Thank you for the comments provided on the draft environmental impact statement.

Very truly yours,

KENAM KIM  
State Comptroller

RK/si  
Attach.  
cc: Dr. Richard Marland
MEMORANDUM

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

FROM : GEORGE S. MORIGUCHI, DIRECTOR OF
LAND UTILIZATION

SUBJECT : DRAFT EIS FOR ROADWAY (WAIPIO AND WAIAWA,
D.A.G.S. JOB NO. 02-10-1553.2)

We have no objection to the above proposal, provided all
requirements of the Comprehensive Zoning Code and
Subdivision Rules and Regulations are met.

George S. Moriguchi
Director

GSM:rh

NO RESPONSE NECESSARY
MEMORANDUM

September 9, 1974

MEMO TO: Richard E. Hartland
          Interim Director, ORQC

FROM: Reginald H. F. Young
       Asst. Director, WRRC

SUBJECT: Draft EIS, Roadway Entrance to Leeward CC

Comments on the subject EIS resulting from WRRC review are listed below:

1. The primary objective of the proposed project does not fit the title for a roadway entrance to Leeward Community College. Although the present entrance to Leeward is congested this project, as described, does little to relieve the situation. The proposed 60-ft. right of way is almost 1/2 mile from the college buildings. The impact statement does not explain by what means students can reach the college from the proposed entrance.

   Description of the 60-ft. right of way and 30-ft. right of way include gutters, drainage, street lighting, electric and water lines, telephone lines, etc., which is more typical of streets put in for residential developments.

   The proposed project seems to be remotely connected with the Leeward College and should list that as a secondary objective instead of primary.

2. The impact statement has not considered the secondary impact which concerns the induced development caused by the accessibility to the area by a new road. New residential areas will add pollution to Middle Loch from street runoff, automobiles and runoff from lawns, etc. The area of land for percolation will be reduced thus possibly increasing the amount of runoff.

RHFY: jmn

cc: H. Gee
    J. Johnson
Dear Dr. Young:

Thank you for your comments of September 9, 1974, regarding the draft environmental impact statement for the Proposed Roadway Entrance to Leeward Community College. We have reviewed these comments and offer the following dispositions:

Item 1 - The draft environmental impact statement's title follows the Department of Accounting and General Services' identification of the proposed project.

Residential utilities are included in the roadway's right-of-way for the abutting proposed residential/apartment development (Ewa and Makai of the roadway). Costs incurred for their installation will be paid by the developer.

One of the major purposes of the proposed project is to serve as a second access roadway entrance to Leeward Community College. The proposed 30-foot right-of-way, which will connect to an existing cul-de-sac in the southwest corner of the Leeward Community College property, will be constructed by the Department of Accounting and General Services to fulfill the stated purpose.

Item 2 - The scope of the draft environmental impact statement covers only the direct and indirect impact of the roadway as a secondary access road for the Leeward Community College. The impact of any future urban development in the area would be determined separately and the requirement for an environmental impact statement made at the appropriate time.
Dr. Reginald H. F. Young

It is also noted that plans were originally developed for a roadway to serve the planned residential/apartment use parcel; this was rejected by the City in favor of a through street which would be consistent with the City's Ordinance for a 60-foot wide roadway to Lehua Avenue.

Very truly yours,

KENAM KIM
State Comptroller

cc: Dr. Richard Marland
MEMORANDUM

TO: Richard E. Marland, OEQC
FROM: Jacquelin N. Miller, Environmental Center
RE: Draft EIS for Construction of a Roadway Entrance to Leeward Community College, Waipio and Waiawa, Ewa, Oahu

The Environmental Center has been assisted in the review of the above cited EIS by Anthony Russo, a faculty member of Leeward Community College and member of the Environmental Center Policy Committee.

Page 1, para. 3.

Consideration should be given to the underground installation of utilities. This should be feasible from the engineering standpoint based on the Geology report given on page 8. The anticipated medium density apartments and residential development cited on page 5 and presumably just makai of the proposed road (although not defined in the text) certainly would dictate underground utilities from the environmental-esthetic view.

Page 4, para. 2.

The cited 550 foot segment which will be 30' wide rather than 60' is not clearly shown on figure 1 if in fact it even exists. There is no scale on figure 1 to facilitate locating such a segment if one could find adequately labeled
reference points from which to begin. Similarly Lehua Avenue is not labeled on figure 1 hence one cannot evaluate the proposed 30' segment with respect to the cited "future project" of expanding the 30' segment to 60'.

Page 4, para. 5.

We would suggest that the section on Objectives be separated from the initial project and area description to facilitate a clearer review of the area involved and the specific objectives of the project.

The primary objectives as stated are:

1. Second access to Leeward Community College.

   Certainly traffic congestion at Leeward College is of serious and immediate concern. Unfortunately neither the present access nor the proposed access is shown on the figure cited. We judge that the proposed new access will be approximately 1 mile Eva of the present access intersection. Nowhere in the EIS is there a breakdown of traffic patterns to and from the Diamond Head direction and similarly from the Eva direction. It is our opinion that perhaps as high as 75% of the traffic into and out of Leeward College comes from the Pearl City-Honolulu Diamond Head direction. A new access road which requires drivers to traverse 1 mile in an Eva direction prior to crossing Farrington Highway then return that mile to reach their Leeward College destination does not appear to be the best possible design to meet the stated objective. Similarly, drivers returning to the Diamond Head direction must make the 2 mile detour again at the end of the day thus adding a total of 4 miles additional driving for each driver from the Diamond Head side using the proposed new Leeward entrance.

2. To provide the overall transportation requirements for adjacent future land uses.

   The proposed road will provide the necessary access to promote the apartment residential development of the area.

Page 6. II. Probable Impact on the Environment

It is almost impossible to follow the text description of cane haul and unpaved dirt roads with the map cited (figure 3), thus the evaluation of this section of the EIS is extremely difficult. We assume from the sentence in paragraph 3 that the State's Energy Corridor crosses the proposed road. It is difficult to be sure because of the poor quality of figure 1. Will this crossing create additional expense and disruption of road access when the anticipated three additional pipelines (page 8, para. 1) are installed within the corridor. It would appear that an alignment makai of the proposed route would eliminate this crossing of the Energy Corridor.
Page 8

The geologic structure of the Pearl Harbor area seems unnecessary except where it applies to the specific area under discussion. If the discussion of the bicycle plan is to be meaningful and evaluated in connection with the proposed roadway, then a map should be included in the final EIS illustration indicating precisely the relative locations of the proposed roadway and bicycle way; figure 4 is inadequate. Otherwise the discussion and accompanying illustration on the bikeway seems rather useless.

Page 12

Second sentence in Water Quality section doesn't make sense. Grammatical errors in verb tense are prevalent here and throughout the EIS.

Page 14 B. Environmental Impact

Item 2. What effect will the elimination of the existing unpaved portion of Waiawa street have on the local users of this street?

Item 4. What will be the effect of the loss of land with regard to Waipahu High School and Waipahu Health Center? How much land will be taken?

Aesthetic Quality

Second sentence in this paragraph doesn't make sense. Will debris be removed if it is in the work area or will it be removed if a disposal site is near the work area?

Page 15

The discussion with regard to Water Quality seems adequate assuming that greater sediment loads, due to the channelization of run-off, are not carried into Middle Loch. In the interest of clarity it would be appropriate to restructure the fourth sentence in this paragraph on Water Quality which describes the drainage flow as intermittent and occurring "only during and after rains..." One cannot help but wonder when the "after stops" and the "before begins".

III. Unavoidable Significant Adverse Effects

Item 3. Sediment basin traps should be required if there exists the possibility of greater siltation in Middle Loch during construction.

IV. Alternative to the Proposed Project

New Alignment

There is no discussion of alternate alignments or other means for meeting the objectives cited in Section I. Specifically the possible con-
struction of a direct access link from the Ewa bound Farrington Highway to the existing Leeward access road. It would appear from figure 1 that access to the Waipahu High School Athletic field would be more readily achieved by entering from the Mauka end of the field. However, since the existing roads are so ill-defined on this figure it is difficult to make an intelligent evaluation of this problem. A much more thorough analysis of the cited alternative alignment which would follow the existing unpaved portion of Waiawa street should be presented.

The suggested negative effect of "bisecting" the property designated for residential-apartment use is not explained. It is conceivable that in fact a central road might be an advantage to such a development by allowing better access to existing main thoroughfares.

Page 19 Short term and Long term Environmental Impacts

Initially the new roadway will relieve some of the congestion at Leeward College and will facilitate movement from the parking lots. However, when the adjacent area is developed into the proposed medium density, apartment-residential configuration, the primary benefit of the roadway will be to the residents at the expense of poorer access to Leeward College. It would be expected that students coming from the Diamond Head direction would shortly return to using the existing entrance thus bringing the traffic problem back to its original congested state.

Conclusion

This Environmental Impact Statement is titled as relating to the "Construction of a Roadway Entrance to Leeward Community College." Either the title or the alignment of the proposed project should be redefined. In its present alignment, the road will serve primarily the private development of a medium density apartment complex not Leeward College, nor the suggested access to Waipahu Athletic field. It will do little on the short term basis to alleviate the existing traffic congestion at Leeward College and will increase congestion over the long term period.

Appendix A

The conclusion reached on Page 15 in the section on Water Quality with reference to the quality of the storm water entering Middle Lock seems adequate except for the possible sedimentation effects cited previously. The inclusion of the various tables, figures, and discussion of sedimentation and biological conditions in Pearl Harbor and adjacent streams as zeroxed from the Navy data base information seems totally irrelevant to the construction of an entrance to Leeward College. Nowhere in the text, is the information cited in Appendix A evaluated in terms of its pertinence to the proposed project.

cc: A. Russo
Ms. Jacquelin Miller
Environmental Center
Maile Building 10
2540 Maile Way
University of Hawaii
Honolulu, Hawaii 96822

Dear Ms. Miller:

Subject: Draft Environmental Impact Statement for Proposed Construction of a Roadway Entrance Leeward Community College

Thank you for transmitting the comments of Anthony Russo, regarding the above draft environmental impact statement. Your memorandum of September 9, 1974, has been reviewed and appropriate revisions to the final environmental impact statement have been included. An item by item disposition of your comments has been provided below:

Page 1, paragraph 1 - Recognizing that specific engineering purposes are not suitable for general review purposes, a new figure (as well as the old Figure 1) is contained in the final environmental impact statement.

Page 1, paragraph 3 - Underground installation of utility lines are being planned.

Page 4, paragraph 2 - As indicated in the response to Page 1, 1., a new figure has been included in the final environmental impact statement. Additionally, the future 60-foot right-of-way roadway to Lehua Avenue is identified in Appendix C.

Page 4, paragraph 5 - The section on the objectives of the roadway has been revised.
Page 6. II. - As previously stated, a new figure has been provided to clarify the structures and dirt roads within the vicinity. As a point of information, please be aware that the Energy Corridor easement was set after the proposed road alignment. Crossings by future energy pipelines will be the responsibility of the State and the participants in the Energy Corridor.

Page 8 - The geologic description of Pearl Harbor has been incorporated in Appendix D rather than remaining in the text of the environmental impact statement. The new figure shows the planned bicycle way (old railroad right-of-way).

Page 12 - The sentence cited has been corrected and also several others containing typographical or grammatical errors.

Page 14.B. Item 2 - It is anticipated that the proposed roadway will relieve the unpaved portions of Waiakea Street of vehicular travel. However, some side roads (dirt) will probably remain in use.

Page 14.B. Item 4 - The amount of lands to be acquired is considered to be minimal and not have a significant effect on the existing activities and uses. A list of owners and amount of lands to be acquired has been added (Table 1) to the final environmental impact statement.

Aesthetic Quality - The debris, if within the work area, will be removed by the contractor to an appropriate disposal site.

Page 15 - Storm surface runoff due to rainfall occurs during the rainfall period and continues to flow within the drainage system until such time that the last raindrop at the farthest point in the drainage basin from the outlet travels to the outlet.

III. Item 3 - As a requirement for the Grading Permit, City and County Ordinance No. 3968, the permittee is required to "submit temporary erosion control procedures for the Chief Engineer's approval prior to grading and including sequence of construction operations".

IV. Alternatives - The alternative suggested, providing a roadway from the mauka portion of the athletic field, has several very readily noticeable disadvantages: a new left turn or U-turn must be provided on Farrington Highway for those entering from the Diamond Head direction; the amount of
land that would have to be acquired from the athletic field, and the amount of traffic congestion which occur during athletic events; additionally, if a road is built between the field and high school, there would be traffic hazards to students going to and from the school and field. The section on alternatives has been expanded to elaborate more on the alternative of utilizing the existing dirt portions of the road.

Conclusion - The draft environmental impact statement’s title follows the Department of Accounting and General Services’ identification of the proposed project.

On a long-term basis, the proposed roadway will relieve congestion of the existing Leeward Community College entrance.

Appendix A - The materials and information contained in this appendix provides the reviewer with information on the present baseline quality of the receiving waters in Middle Loch. Because of its technical nature, it was included in the appendix for those whose interest and expertise can more fully utilize this information.

We recognize that the Office of Environmental Quality Control transmits a copy of the final environmental impact statement to the Center. This will further provide you the opportunity to review other revisions and comments provided on the draft environmental impact statement. We hope that Mr. Russo will also be afforded the opportunity to review the final environmental impact statement.

Very truly yours,

KENAM KIM
State Comptroller

RK/B1
cc: Dr. Richard Marland
Dr. Richard E. Marland, Interim Director  
Office of Environmental Quality Control  
State of Hawaii  
550 Halekauwila Street  
Honolulu, Hawaii 96813

Dear Dr. Marland:

We have reviewed the draft environmental statement for construction of a roadway entrance to Leeward Community College, Waipio and Waiau, Oahu, and have the following comment. If the proposed outlets shown on Figure 1 are below the mean higher high water mark, a Department of the Army permit, pursuant to Section 10 of the River and Harbor Act of 1899, will be required.

Thank you for the opportunity to review this statement.

Sincerely yours,

ELROY CHINN  
Acting Chief, Engineering Division
Dear Mr. Chinn:

Subject: Draft Environmental Impact Statement for Proposed Construction of a Roadway Entrance to Leeward Community College

Thank you for your comment of September 5, 1974, regarding the draft environmental impact statement for the Proposed Roadway Entrance to Leeward Community College.

As was indicated by your letter, a permit from the Department of the Army, pursuant to Section 10 of the River and Harbor Act of 1988, is necessary. An application to the Corps of Engineers will be prepared for processing in the near future.

Very truly yours,

[Signature]

KENAM KIM
State Comptroller

RK/61

cc: Dr. Richard Marland
MEMORANDUM

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

FROM : ROBERT R. WAY, CHIEF PLANNING OFFICER

SUBJECT: CONSTRUCTION OF A ROADWAY ENTRANCE TO
LIEWARD COMMUNITY COLLEGE
DRAFT ENVIRONMENTAL IMPACT STATEMENT

We have examined the subject draft environmental impact statement and offer the following observations for your consideration:

1. Section II of Ordinance No. 3842, effective November 30, 1971, calls for a 60-foot roadway to be established between Waipio Point Access Road and Lehua Avenue, within an area bounded on the mauka side by the Farrington and H-1 Interstate Highways and on the makai side by the Middle Loch of Pearl Harbor.

   Development of a segment of this planned roadway to a 30-foot right-of-way, we should like to note, would be inconsistent with Ordinance No. 3842 and the adopted Detailed Land Use Map for the area.

2. Additional information describing in detail the reasons or basis for constructing a portion of the roadway at a standard lower than that specified in Ordinance No. 3842, including an estimated timetable for development of the remainder 60-foot right-of-way linking to Lehua Avenue, should be provided. Such information, it is felt, would be beneficial towards a clear understanding on the extent of constructing this roadway as presently planned.
Dr. Richard E. Marland  
Page 2  
September 3, 1974

3. Discussion on a contingency plan for implementation in the event of pipeline leakage within the Energy Corridor during the construction period, not noted in the draft EIS, deserves to be included.

4. The location map (Figure 1) should contain a north arrow and a scale in distance.

Thank you for the opportunity to comment on this draft environmental impact statement.

[Signature]
ROBERT R. WAY  
Chief Planning Officer
Mr. Robert R. Way  
Chief Planning Officer  
Department of General Planning  
City and County of Honolulu  
Suite 2100  
190 South King Street  
Honolulu, Hawaii 96813  

Dear Mr. Way:

Subject: Draft Environmental Impact Statement for Proposed Construction of a Roadway Entrance Leeward Community College  

Thank you for your comments of September 3, 1974, on the above indicated draft environmental impact statement. Having reviewed these comments, we have provided the following dispositions:

Item 1 - The reason for the development of half the roadway (30 feet) at the Diamond Head-makai end of the roadway is due to the lack of a sponsor to absorb the cost of the makai side of the road. Normally, expenses for the roadway and improvements are shared by abutting owners; however, in this case, the abutting owners did not provide the monies which would have allowed full development of a roadway.

Item 2 - A timetable for the development of the remaining 60-foot right-of-way (in accordance with Ordinance No. 3870) has not been established and is indefinite at this time.

Item 3 - It is required that the contractor inform the owners of the pipelines or their representatives of the construction of the roadway near or over their pipelines. Representatives from the various owners are then present during construction to take specific measures should a pipeline be ruptured during construction.
Item 4 - A new figure, aerial photograph, has been incorporated for clarity; the old figure has been revised to include a scale and north arrow as suggested.

Very truly yours,

HENAM KIM
State Comptroller

RI/si
cc: Dr. Richard Marland
Office of Environmental Quality Control
550 Hakeauila Street, Room 301
Honolulu, Hawaii 96813

Gentlemen:

We have reviewed the Draft Environmental Impact Statement "Construction of a Roadway Entrance to Leeward Community College, Waipio and Waiau, Ewa, Island of Oahu, Hawaii" and offer the following comments:

Location Map, Figure 1 (page 2). We suggest the map should clearly identify major points of reference cited in the text.

Part II, Probable Impact on the Environment, Section A, Description of Existing Conditions, subhead Land Use (first paragraph, page 6). It is stated that: "At the community college end, Waiau Street begins as an unpaved dirt road..." This sentence should be expanded to indicate whether street improvements are planned. Same section, second paragraph, we suggest an additional statement be made to indicate that type and amount of property displacement that will occur as a result of the highway. Special attention should be given to natural wetlands and streams.

Part II, Section A, Flora and Fauna (page 10). We suggest this section be expanded to describe existing habitat for fish and wildlife, including habitat in agricultural lands. Information of existing wetlands, as mentioned above, are particularly important.

Part II, Section B, Environmental Impact, subhead, Flora and Fauna (page 14). It is stated that: "However, no indigenous or rare flora and fauna are known to exist in the area affected, so the impact is seen as minimal." We suggest this section should be expanded to include the source of the above findings. Furthermore, the project's impact on existing biota should be discussed. Although special interest has been placed on rare and indigenous species, the more common or exotic species should be considered for it often dominates much of the low elevation biota. The section should further note whether ground cover will be planted on denuded areas as a result of construction activities.
Part II - B. Water Quality (page 13). The paragraph examines the existing drainage system. We suggest this section should be enlarged to provide more detail of the system. Structures should be described and estimated runoff entering the system should be noted.

Part III, Unavoidable Significant Adverse Effects. Number 5, page 17. The discussion indicates that the energy corridor may be accidentally hit and a rupture may result. We suggest this section should be expanded to include a contingency plan should the above occur.

The above views and recommendations constitute the report of the U.S. Fish and Wildlife Service and do not necessarily represent the views of the Department of the Interior.

We appreciate the opportunity to comment on this impact statement.

Sincerely yours,

Michael L. Nishimoto
Acting Field Supervisor
Mr. Michael L. Nishimoto  
Acting Field Supervisor  
Fish and Wildlife Service  
U.S. Department of the Interior  
621 Millilani Street  
Honolulu, Hawaii 96813

Dear Mr. Nishimoto:

Subject: Draft Environmental Impact Statement for Proposed Construction of a Roadway Entrance to Leeward Community College

Thank you for your comments of August 30, 1974, regarding the draft environmental impact statement for the Proposed Construction of a Roadway Entrance to Leeward Community College.

We have reviewed and acted on your comments and provide the following dispositions:

Location Map, Figure 1: A new figure (as well as the old Figure 1) is contained in the final environmental impact statement. The new figure is an aerial photograph which visually provides the reviewer with the immediate and adjacent areas and identifies these areas.

Part II, Section A: A future roadway improvement (a 60-foot right-of-way to Lehua Avenue) is identified in Appendix C. A list of owners and amount of lands to be acquired has been included in Section II.B. of the final environmental impact statement. No lands within the natural wetlands or within streams will be acquired for the proposed roadway.

Part II, Sections A and B: Both sections discuss flora and fauna and have been answered together. The clearing of the original vegetation and the use of these lands for agricultural purposes (grazing, sugar cane and diversified agricul-
ture) has eliminated the indigenous flora of the area. It should be recognized that the scope of work for the proposed project excludes intensive field survey of the fish and wildlife, insects, etc. in the adjacent area. However, sections have been provided to discuss avifauna (pages 14 and 18 of the final environmental impact statement). Landscaping for denuded areas will be included as part of this project.

Part II-B. Water Quality: The planned structures of the drainage system includes box culverts, boulder rip-rap (at the drainage outlets), pipes, manholes, catchbasins and lined ditches. The drainage system and outlets proposed require that a Shoreline Permit and a Corps of Engineers permit (pursuant to Section 10 of the River and Harbor Act of 1899) be issued. Applications will be prepared and submitted for processing in the near future; these applications will describe more specific details on the drainage system.

Part III. Unavoidable Significant Adverse Effects: It is required that the contractor inform the owners of the pipelines (including those located within the Energy Corridor), or their representatives, of the construction of the roadway near or over their pipelines. Representatives are then present during construction to take specific measures if a pipeline is ruptured during construction.

Additionally, we will request that the Office of Environmental Quality Control provide your office with a copy of the final environmental impact statement to allow you to review these changes and the entire final statement.

Very truly yours,

KENAM KIM
State Comptroller

REK/Hi
cc: Dr. Richard Marland
TO:  Dr. Richard E. Marland, Interim Director
Office of Environmental Quality Control

FROM: Shelley M. Mark, Director

SUBJECT: Draft Environmental Impact Statement for Construction of a Roadway Entrance to Leeward Community College, Oahu

Our office has reviewed the subject draft and find it to be reasonably adequate in its consideration of environmental impacts due to the proposed project.

We were particularly pleased with the manner in which the proposed project was linked to several objectives and area plans.

We have no further comments to make at this time and appreciate this opportunity to review the draft.

NO RESPONSE NECESSARY.
August 28, 1974

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

Dear Dr. Marland:

SUBJECT: Draft Environmental Impact Statement  
for Construction of a Roadway Entrance to Leeward Community College, DAGS Job 
No. 02-10-1553.2

Thank you for sending us the draft impact statement for our review and comments. The project is not anticipated to have any adverse effects to potable groundwater resources in the area. However, we request that the project plans involving new or existing water and sewer facilities, as indicated on Page 1 of the impact statement, be coordinated with us prior to finalization.

Should you require further information on this matter, please contact Mr. Michael Shigetani at 548-5221.

Very truly yours,

Edward Y. Hirata  
Manager and Chief Engineer
Mr. Edward Y. Hirata  
Manager and Chief Engineer  
Board of Water Supply  
City and County of Honolulu  
630 South Beretania Street  
Honolulu, Hawaii 96813  

Dear Mr. Hirata:

Subject: Draft Environmental Impact Statement for Proposed Construction of a Roadway Entrance to Leeward Community College

Thank you for your letter of August 28, 1974, commenting on the draft environmental impact statement for the Proposed Construction of a Roadway Entrance to Leeward Community College.

As requested, those aspects involving the water and sewer facilities will be coordinated with the Board of Water Supply as the project plans are developed.

Very truly yours,

KENAM KIM  
State Comptroller

RK/si  
cc: Dr. Richard Marland
August 27, 1974

Dr. Richard E. Marland, Interim Director  
Office of Environmental Quality Control  
650 Halckauwila Street  
Honolulu, Hawaii 96813

Dear Dr. Marland:

Subject: Draft EIS on Construction of Roadway Entrance to Leeward Community College

We have no comments on the subject statement.

Very truly yours,

[Signature]

ERNEST T. YUASA  
Director and Building Superintendent

TH:jo  
cc: J. Harada
LETTER: Building Department, City and County of Honolulu, dated August 27, 1974.

NO RESPONSE NECESSARY.
August 13, 1974

Office of Environmental Quality Control
Office of the Governor
160 Mailekauwila Street
Honolulu, Hawaii 96813

Gentlemen:

Subject: Draft Environmental Impact Statement for Construction of a Roadway Entrance to Leeward Community College, Waipio and Waiawa, Ewa, Oahu

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

1. The designed runoff data for the proposed project should be coordinated with the Drainage Section of the Division of Engineering.

2. If the proposed roadway is to be turned over to the City and County, it must conform to City standards and plans must be reviewed by the Department.

Very truly yours,

KAZU HAYASHIDA
Director and Chief Engineer

CC: Division of Engineering
Mr. Kazuyoshi Hayashida  
Director and Chief Engineer  
Department of Public Works  
City and County of Honolulu  
Honolulu, Hawaii 96813  

Dear Mr. Hayashida:  

Subject: Draft Environmental Impact Statement for Proposed Construction of a Roadway Entrance Leeward Community College  

Thank you for your comments dated August 13, 1974, on the above indicated draft environmental impact statement. We have reviewed these comments and provide the following dispositions:  

Item 1 - The designed runoff data and other information regarding drainage will be coordinated with the Drainage Section of the Division of Engineering, Department of Public Works.  

Item 2 - The present plans call for the 60-foot right-of-way portion of the proposed project to be turned over to the City. For these purposes, it is recognized that compliance with the City standards is necessary and will be achieved.  

Very truly yours,  

KENAM KIM  
State Comptroller  

RK/si  
cc: Dr. Richard Marland
APPENDIX A

WATER QUALITY - MIDDLE LOCH
# TABLE I

SEWAGE ANALYSES

AVERAGES OF THREE 24-HOUR COMPOSITE SAMPLES

<table>
<thead>
<tr>
<th>STATION LOCATION</th>
<th>STATION DESCRIPTION</th>
<th>DISCHARGE</th>
<th>SAMPLE DATES</th>
<th>PHOSPHORUS (MG/l)</th>
<th>NITROGEN (MG/l)</th>
<th>TOTAL SOLIDS (MG/l)</th>
<th>COLIFORMS (ORG/100 ML)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE 08</td>
<td>Navy So. Ave.</td>
<td>Raw Sewage</td>
<td>May</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manhole</td>
<td></td>
<td>21,22,23</td>
<td>7.1</td>
<td>18.6</td>
<td>39.1</td>
<td>54.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1969</td>
<td></td>
<td></td>
<td></td>
<td>10.1 Millions</td>
</tr>
<tr>
<td>SE 06</td>
<td>Halawa STP</td>
<td>Primary</td>
<td>May</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chlorine Effluent</td>
<td></td>
<td>21,22,23</td>
<td>11.2</td>
<td>20.1</td>
<td>95.4</td>
<td><strong>None detected</strong></td>
</tr>
<tr>
<td></td>
<td>Contact Chamber</td>
<td></td>
<td>1969</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SE 10</td>
<td>Aiea Manhole</td>
<td>Raw Sewage</td>
<td>May</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>26,27,28</td>
<td>8.1</td>
<td>19.0</td>
<td>134.0</td>
<td>52.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1969</td>
<td></td>
<td></td>
<td></td>
<td>12.3 Millions</td>
</tr>
<tr>
<td>SE 07</td>
<td>Pearl City STP</td>
<td>Primary</td>
<td>May</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Effluent</td>
<td></td>
<td>21,22,23</td>
<td>8.6</td>
<td>18.4</td>
<td>107.9</td>
<td><strong>29,500</strong></td>
</tr>
<tr>
<td></td>
<td>Contact Chamber</td>
<td></td>
<td>1969</td>
<td></td>
<td></td>
<td></td>
<td>430 Millions</td>
</tr>
<tr>
<td>SE 09</td>
<td><strong>Waipahu</strong> Ditch</td>
<td>Raw Sewage</td>
<td>May</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>26,27,28</td>
<td>5.8</td>
<td>10.2</td>
<td>828.0</td>
<td>108.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1969</td>
<td></td>
<td></td>
<td></td>
<td>18.3 Millions</td>
</tr>
</tbody>
</table>

* Effluent appeared to be over-chlorinated.
** Chlorinator may not have been working.
*** Irrigation water mixed with raw sewage during sampling period.

Source: Report on Pollution of the Navigable Waters of Pearl Harbor U.S. Department of Interior October, 1973
<table>
<thead>
<tr>
<th>AREA OF DISCHARGE</th>
<th>SOURCE OF WASTE</th>
<th>VOLUME (MGD)</th>
<th>PHOSPHORUS (LBS/DAY)</th>
<th>TOTAL NITROGEN (LBS/DAY)</th>
<th>SOLIDS (LBS/DAY)</th>
<th>SUSPENDED</th>
<th>SETTLEABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Channel</td>
<td>Navy So. Ave. Sewer</td>
<td>3.5</td>
<td>207</td>
<td>543</td>
<td>1,141</td>
<td>558</td>
<td></td>
</tr>
<tr>
<td>Halawa Stream</td>
<td>Halawa STP</td>
<td>0.5</td>
<td>47</td>
<td>84</td>
<td>398</td>
<td>416</td>
<td></td>
</tr>
<tr>
<td>Aiea Bay</td>
<td>Aiea Sewer</td>
<td>0.5</td>
<td>34</td>
<td>79</td>
<td>559</td>
<td>325</td>
<td></td>
</tr>
<tr>
<td>Middle Loch</td>
<td>Pearl City STP</td>
<td>2.6</td>
<td>186</td>
<td>399</td>
<td>2,339</td>
<td>494</td>
<td></td>
</tr>
<tr>
<td>West Loch</td>
<td>*Naipahu Ditch</td>
<td>4.0</td>
<td>194</td>
<td>340</td>
<td>27,639</td>
<td>19,861</td>
<td></td>
</tr>
<tr>
<td>TOTALS</td>
<td></td>
<td>11.1</td>
<td>668</td>
<td>1,445</td>
<td>32,076</td>
<td>21,654</td>
<td></td>
</tr>
</tbody>
</table>

*Includes 2 mgd sugar mill wastes.

### TABLE III

**SUMMARY OF STREAM SURVEY DATA**

<table>
<thead>
<tr>
<th>STREAM</th>
<th>TEMP. (°C)</th>
<th>pH*</th>
<th>COLIFORMS-MF (ORG/100 ML)</th>
<th>TOTAL PO₄-P (MG/l)</th>
<th>SOLIDS (MG/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Halawa</td>
<td>21.1</td>
<td>8.0</td>
<td>1,200</td>
<td>0.079</td>
<td>24</td>
</tr>
<tr>
<td>Kalauao</td>
<td>20.5</td>
<td>7.8</td>
<td>1,500</td>
<td>0.035</td>
<td>11</td>
</tr>
<tr>
<td>Waimalu</td>
<td>20.7</td>
<td>7.6</td>
<td>3,500</td>
<td>0.032</td>
<td>13</td>
</tr>
<tr>
<td>Waiawa</td>
<td>20.5</td>
<td>7.6</td>
<td>5,900</td>
<td>0.430</td>
<td>13</td>
</tr>
<tr>
<td>Waikele</td>
<td>20.8</td>
<td>7.6</td>
<td>1,500</td>
<td>0.360</td>
<td>17</td>
</tr>
</tbody>
</table>

*Median values.

### TABLE IV

**PROJECTION OF MEAN DAILY STREAM LOADING OF FIVE STREAMS ENTERING PEARL HARBOR**

<table>
<thead>
<tr>
<th>STREAM</th>
<th>MEAN FLOW (MGD)</th>
<th>PHOSPHORUS (LBS/DAY)</th>
<th>SOLIDS (LBS/DAY)</th>
<th>SUSPENDED</th>
<th>SETTLEABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Halawa</td>
<td>8</td>
<td>5.3</td>
<td>1,601</td>
<td>467</td>
<td></td>
</tr>
<tr>
<td>Kalauao</td>
<td>5.1</td>
<td>1.5</td>
<td>238</td>
<td>152</td>
<td></td>
</tr>
<tr>
<td>Waimalu</td>
<td>14.4</td>
<td>3.8</td>
<td>661</td>
<td>356</td>
<td></td>
</tr>
<tr>
<td>Waiawa</td>
<td>74.2</td>
<td>266.1</td>
<td>2,862</td>
<td>1,541</td>
<td></td>
</tr>
<tr>
<td>Waikele</td>
<td>75.6</td>
<td>277.0</td>
<td>6,479</td>
<td>3,430</td>
<td></td>
</tr>
<tr>
<td>TOTALS</td>
<td>177.3</td>
<td>553.7</td>
<td>11,841</td>
<td>5,946</td>
<td></td>
</tr>
</tbody>
</table>

Source: Report on Pollution of the Navigable Waters of Pearl Harbor U.S. Department of the Interior October, 1973
Figure 5. Total metals (Ag-Cd-Cr-Cu-Ni-Pb-Zn).
Twenty highest stations.

Source: A Study of Sediments and Soil Samples From Pearl Harbor Area Naval Facilities Engineering Command, January 1973
The brown shades occur where a substantial amount of recent sedimentary material is being deposited. The gray shades occur where little recent material is being deposited or where stagnant and septic bottom conditions exist.

Source: A Study of Sediments and Soil Samples From Pearl Harbor Area Naval Facilities Engineering Command, January 1973
Source: A Study of Sediments and Soil Samples From Pearl Harbor Area Naval Facilities Engineering Command, January, 1973

Figure 21. Oxidation state based on color and odor.
### TABLE 10
ODOR CLASSIFICATION FOR SEDIMENT DESCRIPTION IN THE FIELD

<table>
<thead>
<tr>
<th>No.</th>
<th>Odor Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vegetable Odor</td>
<td>Odor like root vegetables</td>
</tr>
<tr>
<td>2</td>
<td>Aromatic Odor</td>
<td>Spicy or flowery odor</td>
</tr>
<tr>
<td>3</td>
<td>Oily Odor</td>
<td>Hydrocarbon odors such as oil, grease, gas</td>
</tr>
<tr>
<td>4</td>
<td>Fishy Odor</td>
<td>Odor of fresh or rotten fish</td>
</tr>
<tr>
<td>5</td>
<td>Earthy Odor</td>
<td>The odor of damp earth</td>
</tr>
<tr>
<td>6</td>
<td>Salty Odor</td>
<td>The odor of fresh sea water</td>
</tr>
<tr>
<td>7</td>
<td>Sulfur Odor</td>
<td>Hydrogen sulfide odor</td>
</tr>
<tr>
<td>8</td>
<td>Septic Odor</td>
<td>Stale sewage odor</td>
</tr>
<tr>
<td>9</td>
<td>Seaweed Odor</td>
<td>The odor of iodine or seaweed</td>
</tr>
<tr>
<td>10</td>
<td>Moldy Odor</td>
<td>Odor of a damp cellar</td>
</tr>
<tr>
<td>11</td>
<td>Grassy Odor</td>
<td>Odor of crushed or mown grass</td>
</tr>
<tr>
<td>12</td>
<td>Musty Odor</td>
<td>Odor of decomposing straw</td>
</tr>
<tr>
<td>13</td>
<td>Peaty Odor</td>
<td>The odor of peat</td>
</tr>
<tr>
<td>14</td>
<td>Chlorinous Odor</td>
<td>The odor of free chlorine</td>
</tr>
<tr>
<td>15</td>
<td>No Detectable Odor</td>
<td>Odors are not perceptible</td>
</tr>
</tbody>
</table>

**Oxidation State**

Three classifications for the oxidation state of the sediments based upon color and odor were made: (1) Aerobic consisting of brown hues and all odors except septic and sulfur; (2) anaerobic consisting of gray hues and septic or sulfur odors; (3) intermediate consisting of one color or odor on the aerobic side and one color or odor on the anaerobic side.

As shown in Figure 21, the areas with definite anaerobic conditions are the areas adjacent to the naval activities in Southeast Loch and the areas of Middle Loch where three sewage outfalls occur. The aerobic conditions occur in the lochs near fresh water sources of recent sediments. Intermediate conditions are found in the Main Channel and in Middle Loch near the sewage outfalls.

Source: A Study of Sediments and Soil Samples From Pearl Harbor Area Naval Facilities Engineering Command, January, 1973
Location ML: Fig. 15 and 16. Salinity: 34.98‰ (1230/18 June; depth, 1 foot).
The wooden piling just north of the Noise Measuring Facility in Middle Loch supports a large population of oysters (Crassostrea virginica) at and below the low tide level. The barnacle population (including Balanus amphitrite and B. eburneus) is also large. Most of these barnacles and oysters are alive. Figure 15 illustrates this littoral community schematically. The immediately sublittoral community contains several species of encrusting sponges and some large red bryozoans (Bugula neritina); in this zone the barnacles and sponges seem to be competing for the same space, with the apparent result that the barnacles are living within the structure of the sponges. A number of crabs (including Thalamita sp., Panopeus pacificus, and Metapograpsus messor) were observed, most of them larger than those seen in East Loch. The lower pile community could not be observed from the surface due to poor visibility (2-3 feet); suspended silt colors that water bluish brown. Dives at this location on 9 June revealed the remainder of its structure. At 6 feet and below anemones, perhaps 12 species of bryozoan, two species of tunicates, a pelecypod (Hiatera hawaiensis), an isopod (Cirrolana sp.), and one decapod were observed. The largest number of species represented were polychaetous annelids (including Cirratulus zebuensis, Demonax?

Figure 15. Schematic representation of community aspect, Station ML.

Figure 16. Intertidal community, Station ML.

Source: A Proximate Biological Survey of Pearl Harbor, Oahu June, 1972
sp., and Ceratonereis? sp. During the sample-collecting dives at Station ML, the water below about 6 feet was observed to become warmer and there was a suspended floc about ½ inch in diameter resembling tan snow flakes. The same phenomenon has been observed by one of the authors* in Kaneohe Bay. The zone from the low tide level to a depth of about 4 feet is occupied by a tangle of large terebellid worms (including Thelpeius setosus) associated with epizoons, including oysters, sponges, sabellids, balanoids. The terebellids occupy roughly the same zone as the vermetids found at stations K-9 and F-5. No littorine snails were observed in the supralittoral zone. A small brown caprellid amphipod (Caprella scabra) occurs in large numbers and is associated with a green algae and the bryozoan Bugula neritina. A second amphipod (Lembos sp. ?) was also observed. The number of species at this station, especially at depth, is high (second only to F-5). A civic sewage treatment plant about 700 yards northwest of this station is probably a contributing factor. Similarly, wastes from ships near Station F-5 could be contributing to the complexity of that station. Pole fishermen were observed in this area; they were said to be fishing for omaka (Caranx mate) or lae (Scomberoides santi-petri). On 9 June, a school of 6 to 8 maikoiko (Acanthurus leucopareius ?), each about 4 inches long, was observed, as was one Abudesdfuf abdominatis about 2 inches in length.

Waiaawa stream: The water of Middle Loch at the mouth of the stream and the stream itself is reddish brown due to a heavy silt loading, although rainfall in the Koolaus had been light for a few days before. When crossing the Waiaawa delta, the outboard stirred up bottom mud which was black, indicating anoxic conditions. The mangrove root (Rhizophora mangle) and mud bank communities were observed for a distance of approximately 1000 yards upstream. Unlike other tropical mangrove situations, the mangrove roots on the tidal flats and along the stream banks are remarkably barren except for occasional barnacles. Crabs and crab holes are visible along the mud banks. The oyster Crassostrea virginica is seen as occasional small communities on rock outcroppings, discarded concrete, and bridge pilings. Mud under the mangrove roots is potholed by the scouring of tilapia (Ti/apia spp.). Other fish, mollies (Mollienisia latipinna) and mullet (Mugil cephalus), are observable among the mangrove roots in spite of the poor visibility. Observations were continued upstream until large tadpoles (Rana catesbeiana ?) were discovered along the river banks. Bridge piling at this point still had a few barnacles and small oysters on them.

Location EL-N: Old coralline-block embankments along the north channel of East Loch appear to be supporting large stands of Ulva spp. Underwater artesian springs along this side of the Waipio peninsula may be contributing to this growth, although all such springs are supposed to have been capped to conserve Oahu's artesian supply. There are significant changes in the shoreline geology from the standpoint of available substrata for the attachment of marine organisms, for example, undercut coralline block, cobble beach, mud flat, asphalt and concrete blocks, gunnite coatings (new and decayed), steel matting, and various kinds of

Figure A-1. Sewage treatment plants and shops producing fluid industrial wastes in Pearl Harbor region, 1971.

Source: A Proximate Biological Survey of Pearl Harbor, Oahu June, 1972
APPENDIX B

SECTION 19 - ENVIRONMENTAL PROTECTION
DIVISION 1 - GENERAL

SECTION 1C - ENVIRONMENTAL PROTECTION

The Contractor shall comply with the following requirements for pollution control in performing all construction activities:

1. RUBBISH DISPOSAL

   a. No burning of debris and/or waste materials shall be permitted on the project site.

   b. No burying of debris and/or waste materials except for materials which are specifically indicated elsewhere in these specifications as suitable for backfill shall be permitted on the project site.

   c. All unusable debris and waste materials shall be hauled away to an appropriate off-site dump area. During loading operations, debris and waste materials shall be watered down to allay dust.

   d. No dry sweeping shall be permitted in cleaning rubbish and fines which can become airborne from floors or other paved areas. Vacuuming, wet mopping or wet or damp sweeping is acceptable.

   e. Enclosed chutes and/or containers shall be used for conveying debris from above to ground floor level.

   f. Cleanup shall include the collection of all waste paper and wrapping materials, cans, bottles, construction waste materials and other objectionable materials, and removal as required. Frequency of cleanup shall coincide with rubbish producing events.

2. DUST

   a. Dust shall be kept down at all times, including non-working hours, weekends and holidays, by sprinkling water.

      Work done by the Contractor in complying with this requirement shall be done and paid for in accordance with Subsection 4.2(e) "Force Account Work" and Subsection 9.4(d) "Force Account Work" of the General Requirements and Covenants, respectively, except for the following work:

      1) For areas planted with ground cover and grass, payment for sprinkling water for dust control will not apply as soon as planting is initiated and thereafter. Such sprinkling shall be considered as maintenance, and its cost shall be included in the lump sum bid price.

      2) Sprinkling during the compaction period (starts as soon as material is delivered to the fill area until the compacted layer is accepted by the Engineer) shall be considered as water required for the compaction of the material and shall not be paid for under this section. The cost shall be included in the lump sum bid price.

      Payment shall be made by Change Order at the end of each month.

Job No. (Insert No.)
Page 161
B-2
2/72 (Revised)
b. Wet grinding, when required by the Engineer in correcting an error made by the Contractor, shall be done at no cost to the State.

c. Wet cutting will be required for cement masonry blocks, concrete and asphaltic concrete pavements unless attachments are used with dry cutting equipment to capture the dust created thereby.

d. No unnecessary shaking of bags will be permitted where cement, mortar and plaster mixing is done unless the dust therefrom can be confined.

e. No dry power brooming will be allowed in unconfined areas. Vacuuming, wet mopping, wet sweeping, or wet power brooming may be used instead. Air blowing will be permitted only for cleaning erected forms prior to pouring.

3. NOISE

a. All internal combustion engine powered equipment shall have mufflers to minimize noise.

b. No blasting and use of explosives will be permitted without prior approval of the Engineer.

c. Pile driving operations shall be confined to the period between 8:00 a.m. and 5:30 p.m., Monday through Friday. Pile driving will not be permitted on weekends and legal State and Federal holidays.

d. Starting up of non-highway vehicular equipment shall not be done prior to 6:45 a.m. without prior approval of the Engineer.

4. EROSION

During interim grading operations the grade shall be maintained so as to preclude any damages to adjoining property from water and eroding soil. Temporary berms, cut-off ditches, and other provisions which may be required because of the Contractor's method of operation shall be installed at no cost to the State. Drainage outlets and silting basins shall be constructed and maintained as shown on the plans.

5. OTHERS

a. Wherever trucks and/or vehicles leave the site and enter surrounding paved streets, the Contractor shall prevent any material from being carried onto the pavement. Waste water shall not be discharged into existing streams, waterways, or drainage systems such as gutters and catch basins unless treated to comply with Department of Health water pollution regulations.

b. Trucks hauling debris shall be covered as required by PUC Regulation. Trucks hauling fine materials shall be covered.
c. No dumping of waste concrete will be permitted at the job site unless otherwise permitted in the Special Provisions.

d. Except for rinsing of the hopper and delivery chute, and for wheel washing where required, concrete trucks shall not be cleaned on the job site.

e. Except in an emergency, such as a mechanical breakdown, all vehicle fueling and maintenance shall be done in a designated area. A temporary berm shall be constructed around the area when runoff can cause problems.

f. Spray painting will not be allowed unless done by the "airless spray" process.

6. SUSPENSION OF WORK

Violation of any of the above requirements or any other pollution control requirements which may be specified in the Technical Specifications herein shall be cause for suspension of the work creating such violation. No additional compensation shall be due the Contractor for remedial measures to correct the offense. Also, no extension of time will be granted for delays caused by such suspensions.

If no corrective action is taken by the Contractor within 72 hours after a suspension is ordered by the Engineer, the State reserves the right to take whatever action is necessary to correct the situation and to deduct all costs incurred by the State in taking such action from monies due the Contractor.

The Engineer may also suspend any operations which he feels are creating pollution problems although they may not be in violation of the above mentioned requirements. In this instance, the work shall be done by force account as described in Subsection 4.2(e) "FORCE ACCOUNT WORK" of the General Requirements and Covenants and paid for in accordance with Subsection 9.4(b) "FORCE ACCOUNT WORK" therein. The count of elapsed working days to be charged against the contract in this situation shall be computed in accordance with Subsection 8.8(d) "CONTRACT TIME" of the General Requirements and Covenants.

NOTE TO ARCHITECT: Notify the Public Works Engineer in writing at or before the Pre-Final submittal of any proposed changes to the above requirements.
Source: Memorandum to the Planning Commission (City and County of Honolulu) from Robert R. Way, Planning Director, dated September 10, 1971. Applicant: Herbert K. Horita Realty, Inc., Request for General Plan Amendment; Tax Map Key 9-4-08:23.

Item 4, page 5, regarding Waiawa Road Widening and Extension

"4. Waiawa Road Widening and Extension

An important related issue affecting the General Plan is a joint request by Herbert K. Horita Realty, Inc., and the B. P. Bishop Estate which is supported by the Community Colleges System that Waiawa Road be shown on the General Plan as a 60-foot road from Leeward Community College to Waipio Access Road.

The City Traffic Department also supports this request, but recommends that the proposed road be extended in an easterly direction into First Street connecting with Lehua Avenue in Pearl City. The Traffic Department's recommendation would provide for a continuous east-west road between Waipio Access Road and Lehua Avenue which would serve major local traffic needs generated by significant existing and proposed developments makai of the H-1 Freeway and Waiawa Interchange to the Middle Loch of Pearl Harbor.

The major need addressed by this proposal is that of Leeward College for improved accessibility. At present, Leeward College, with a future potential enrollment of 10,000, is served by a two-lane road which bridges the H-1 Freeway and connects with Kamehameha Highway. Location of this access road within the Waiawa Interchange network severely limits future improvement potential. The new proposed road would also permit traffic destined for or originating from Leeward College and Waipahu High School to completely bypass the Waiawa Interchange and could help to relieve overloaded conditions on the interchange.

The Traffic Department considered three alternative alignments for the proposed road and recommends Alternate 1 as the most direct alignment involving the least number of turning movements for drivers having Leeward College as an origin or destination. Improvement of the existing mauka access road, if feasible, was not considered as a legitimate alternative to the proposed road since this would not contribute to relieving overloaded traffic conditions on the interchange or the needs of other developments in the area.

The 60-foot right-of-way recommended by the Traffic Department is based upon ultimate enrollment projections for Leeward College and Waipahu High School of 10,000 and 3,000 students respectively, and existing and proposed general plan uses."

C-1
DESCRIPTION OF THE GEOLOGIC STRUCTURE OF PEARL HARBOR

The Pearl Harbor estuary occurs on the coastal sedimentary plain of southern Oahu. The harbor consists of three loches which join to form a single channel entrance. Streams, springs, and groundwater flow into the harbor, and the estuary was formed by these fresh water flows that eroded the coastal plain. Since their initial formation, the loches have been altered by sea-level changes, erosion, and silt. The west side of the harbor is composed mostly of limestone reef material known as the Ewa Plain. The east side of the harbor consists mainly of volcanic tuff. Volcanic basalt forms the bulk of the rock material to the north. Marine and terrestrial sediments occur around the perimeter of the harbor.

Source: The Study of Sediments and Soil Sample From Pearl Harbor Area, prepared by the Naval Civil Engineering Laboratory, March, 1973.
ADDENDUM TO THE
FINAL ENVIRONMENTAL IMPACT STATEMENT
FOR
CONSTRUCTION OF A ROADWAY ENTRANCE TO
LEEWARD COMMUNITY COLLEGE
Waipio and Waiawa, Ewa, Oahu

D.A.G.S. Job No. 02-10-1553.2
PREFACE

This addendum was prepared at the request of the Office of Environmental Quality Control to discuss the consequences of urbanization due to the accessibility which the proposed roadway will provide. Specifically, the Office of Environmental Quality Control in a January 3, 1975 meeting with staff members of the Department of Accounting and General Services and retained consultants requested that the following impacts be discussed:

- air pollution (indirect air quality levels attributable to automobiles traveling on the proposed roadway);
- projection for the increased vehicular volume; sewage disposal; and solid waste.

At present, no detailed plans have been prepared for the parcel, however, it is recognized that the tentative intent of the developer is to provide approximately 520 dwelling units in multi-storied buildings. Therefore, the environmental impacts discussed in this addendum, on the identified parcel (Figure A-3), is necessarily in broad terms.
SITE AND LOCATION

The site is identified by Tax Map Key 9-4-08: portion of 23; the 16.8 acre site, which is mauka of Pearl Harbor (Middle Loch) and makai of lands occupied by Waipahu High School, is situated at Waipio and Waiawa, Ewa, Oahu, (See Figures A-1 through A-3). The present zoning is agricultural (AG-1) and the parcel is designated for Medium Density Apartment Use under the General Plan Detailed Land Use Map (Ordinance No. 3842). The State Land Use Designation is urban. The parcel is owned by Herbert K. Horita Realty, Inc.

TOPOGRAPHY AND PRESENT USE OF THE LAND

For a description of existing conditions other than that provided below we find pages 5 to 13 of the Final Environmental Impact Statement applicable.

The site slopes slightly (not more than 3%) from the mauka end of the property towards Pearl Harbor.

Presently, most of the land is lying fallow. Small acreage is being used for watercress and other types of farming activities. (The farming tenants are presently on a month to month rental agreement.)

The parcel does have access from the Waipio Point Access Road at the southern corner of the parcel.

The site has good drainage and does not present flooding problems.

TENTATIVE DEVELOPMENT ACTION

The developer is presently considering a plan to construct 520 dwelling units in multi-storied structures on the parcel. The approximate proposed mix of these units will be: 258 one bedroom units, 190 two-bedroom units, and 72 three bedroom-units. A total of 722 parking spaces for these units are also proposed.

Open space, recreational areas, and internal roadways will also be included in the plans.
No time schedules or phasing has been set.

**OBJECTIVE OF THE DEVELOPMENT**

The objective of this proposed development is to "...develop the subject land with all rental units, utilizing FHA's Section 236 program. Section 236 is an interest subsidized rental program for lower income families. Under this program, monthly rental charges are reduced to a level which lower income families can afford through periodic interest payments from HUD to the mortgagee providing the takeout financing for the rental project. Rental supplement under Section 101 of the Housing and Urban Development Act of 1965 may also be used for up to 40% of the rental units. The rental project must give preference to the lower income families who must have an adjusted income no greater that 135% of the limits prescribed for admission to local public housing. If there are insufficient numbers of lower income families, prospective tenants who can pay the full market rental may be accepted but would not be eligible for interest subsidy benefits."  

**POTENTIAL ENVIRONMENTAL IMPACTS**

Increased vehicular volume on the proposed roadway due to the urbanization of this parcel. A Traffic Study for Waipio Access Road for 1977 was prepared by Community Planning, Inc. (January, 1975) and a copy of the study is attached in Appendix A. Based upon the study, the proposed development would generate 3500 trips per day (on the proposed roadway). This amount plus the vehicular trips generated by the Leeward Community College's faculty, staff, and students would range from 6750 to 8000 ADT (average daily trips) on the proposed roadway. The designed capacity of the roadway will adequately absorb these anticipated trips. No traffic congestion on the proposed roadway is foreseen.

The existing Waipio Point Access Road should also be able to absorb the increase in vehicular trips as indicated in the study.
Air pollution attributable to automobiles traveling on the proposed roadway. Based upon the Traffic Study (Appendix A) the vehicular emissions were calculated, and the results are presented in Appendix B. Both the Traffic Study and the calculated vehicular emissions were provided to the State Department of Health (see letter, January 24, 1975, Appendix C) in order to evaluate the significance of these emissions on the existing ambient air quality. Their response can be reviewed in Appendix C; the comments provided by the Department of Health indicates that vehicular emissions generated by this project will not have a significant impact on the ambient air quality.

Sewage disposal. The parcel is not served by public sewerage facilities. The Ewa Branch Trunk Sewer presently terminates in the vicinity of Leeward Community College approximately 1,200 feet away. The capacity of this trunk sewer is adequate to accommodate the proposed development. Plans to extend the sewer to serve this property have been prepared. The destination of the sewage is the Pearl City Sewage Treatment Plant. At present the Pearl City STP does not have the facilities to treat additional effluent. Therefore, the Sewers Division, Department of Public Works, City and County of Honolulu, will approve the connection of the sewage lines when the plant is expanded (scheduled for 1977).

Solid Waste Disposal. At the present time the collection and disposal of solid waste generated by this development has not been resolved. It is noted that the method selected (public collection and disposal or private collection and disposal) will comply with applicable local rules and regulations relating to solid waste.

CONCLUSION

Based upon the information related above and the attached documents, the proposed urbanization will not create significant adverse impacts on the environment. The impact of urbanizing the parcel has been reviewed by several agencies (through the General Plan Amendment application process, and their
specific area(s) of jurisdiction have been resolved. There will be further dis-
cussions with these and other agencies as more details on the project are pro-
vided to insure that adequate facilities and services are available.

FOOTNOTES

1 Information on present zoning received from the Department of Land Utili-
zation, City and County of Honolulu, personal communication (3/4/75).
A small portion of the parcel is designated for residential (R-6).

2 From Memorandum dated September 10, 1971, from Robert R. Way, Planning
Director, to the Planning Commission, see Appendix D.
APPENDICES

Appendix A - Traffic Study for Waipio Access Road

Appendix B - 1977 Estimated Vehicular Emissions from the Proposed Second Access Roadway to Leeward Community College

Appendix C - Letter to Mr. George Yuen, Director, Department of Health, 1/24/75, Regarding Vehicular Emissions Estimated for the Proposed Second Access Roadway to Leeward Community College. Response to letter.


PROJECTED TRIP GENERATION

1. Existing Sources

"Traffic Summary, Island of Oahu" indicates that in 1968 Waipio Access Road had an ADT of 951. The construction of the Ted Makalena Golf Course is the only significant factor which would increase traffic generation through 1974. The golf course averages 275 golfers per day. Considering this as well as employees, deliveries, etc., the estimated increase in traffic is 450. On this basis, estimated ADT for Waipio Access Road is 1400.

2. Proposed Development by Herbert K. Horita

The proposed development will have a maximum of 500 units, and, for purposes of this study, it is assumed that they will be completed by the end of 1977. It is estimated that each unit will generate approximately 7 trips per day or a total of 3500 trips. The current energy crisis has produced significant changes in volume and patterns of urban travel. Car pool programs, high fuel prices and increased use of daily transit facilities have resulted in fewer auto trips per unit. Accordingly, trip generation estimates for the development should be adjusted.
Allowing for a 10% decrease, daily auto trips generated by the proposed development utilizing Waipio Access Road is estimated to be 2500.

3. Leeward Community College (LCC)

A parking requirement report for community colleges on Oahu prepared in 1973 estimates 1977 ADT for L.C.C. to be 9000. This figure reflects nearby student housing, but does not account for effects by the energy crisis. Accordingly, trip generation should be adjusted. Allowing for a 5% decrease, estimated ADT is 8500. L.C.C. has two major access points, Waiawa Road overpass and Waipio Access Road. Assuming that each access will handle 50% of total trip generation, 1977 ADT for Waipio Access Road is 4250.

4. Total ADT for Waipio Access Road for 1977 is the sum of #1, #2 and #3 or 8150.

CAPACITY OF WAIPIO ACCESS ROAD

Waipio Access Road is two lanes, undivided. Estimated capacity is 8400 vehicles per day, assuming a lane capacity of 350 vehicles per hour.

CONCLUSIONS

It appears that Waipio Access Road could carry the anticipated traffic. The proposed development by Herbert K. Horita accounts for less than 31% of total trip generation. The remaining 69% plus is attributable to the Leeward Community College and the existing subdivision and golf course.
TRAFFIC DATA
FOR DETERMINING EMISSION LOADS
PROPOSED SECOND ACCESS TO LEEWARD COMMUNITY COLLEGE

PREPARED BY COMMUNITY PLANNING, INC.
JANUARY, 1975

From the "Traffic Study for Waipio Access Road for 1977", prepared by Community Planning, Inc., the maximum ADT for the proposed Second Access to Leeward Community College (LCC) is estimated to be \(3500 + \frac{9000}{2}\) or 8000. However, because some of the proposed development is for students and faculty of the nearby LCC, and because of resultant effects of the current energy crisis (car pooling, mass transit), a more reasonable estimate of ADT for the subject roadway is 2500 + 4250 or 5750.
<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Grams/mile</th>
<th>6750</th>
<th>8000</th>
<th>6750</th>
<th>8000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Monoxide</td>
<td>38.64</td>
<td>.288</td>
<td>.341</td>
<td>104.9</td>
<td>124.4</td>
</tr>
<tr>
<td>Hydrocarbons</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exhaust</td>
<td>4.29</td>
<td>.032</td>
<td>.038</td>
<td>11.7</td>
<td>13.8</td>
</tr>
<tr>
<td>Crankcase &amp; evaporation</td>
<td>2.0</td>
<td>.015</td>
<td>.018</td>
<td>5.4</td>
<td>6.4</td>
</tr>
<tr>
<td>Nitrogen Oxides</td>
<td>5.93</td>
<td>.044</td>
<td>.052</td>
<td>16.1</td>
<td>19.1</td>
</tr>
<tr>
<td>Particulates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exhaust</td>
<td>.38</td>
<td>.003</td>
<td>.003</td>
<td>1.0</td>
<td>1.2</td>
</tr>
<tr>
<td>Tire Wear</td>
<td>.20</td>
<td>.001</td>
<td>.002</td>
<td>.54</td>
<td>.64</td>
</tr>
<tr>
<td>Sulfur Oxides</td>
<td>.20</td>
<td>.001</td>
<td>.002</td>
<td>.54</td>
<td>.64</td>
</tr>
</tbody>
</table>

* Based upon the following projected data:
  - Number of average daily trips (ADT) = 6750 (low figure) and 8000 (high/maximum anticipated figure)
  - Miles traveled per trip = 1 mile (the roadway length is .7 mile, and use of Wapio Access Road is included) totaling 6750 and 8000 vehicular miles respectively
  - Average speed = 30 mph (this is the designed speed)

1 Source: Supplement No. 2 for Compilation of Air Pollution Emission Factors, adjusted with speed correlation factors. 1974 average emission factors for highway vehicles (passenger) were utilized since the indication is that the Environmental Protection Agency will relax compliance with future vehicular emissions' as was schedules.

Grams/mile emissions adjusted with speed correlation factors (30 mph):
- Carbon Monoxide - 56 g/mi x .69 = 38.64 g/mi
- Hydrocarbons (exhaust only) - 5.5 g/mi x .78 = 4.29 g/mi
- Nitrogen Oxides - 5.2 g/mi x 1.14 = 5.93 g/mi

"Crankcase and evaporative hydrocarbons, particulate, and sulfur oxide emission factors are average values that can be considered independent of speed."
APPENDIX C

ENVIRONMENTAL COMMUNICATIONS INC.

January 24, 1975

Mr. George Yuen, Director
State Department of Health
1250 Punchbowl Street
Honolulu, HI 96813

Dear Mr. Yuen,

RE: VEHICULAR EMISSIONS ESTIMATED FOR THE PROPOSED SECOND ACCESS ROADWAY TO LEWARD COMMUNITY COLLEGE

Attached, as per our January 23 discussion with Mr. Paul Aki, is a copy of the 1977 estimated air emissions from vehicles utilizing the proposed Leeward Community College second entrance roadway (see enclosed map).

The Office of Environmental Quality Control requested information relating to the potential impact of vehicular emissions generated by the utilization of the proposed roadway. We have estimated the vehicular air emissions based upon the traffic study prepared by Community Planning Inc. (enclosed). We would appreciate your review of the enclosed vehicular emission data with your conclusion as to whether the present air quality will be significantly altered or any air standards violated due to the project.

We note that the air emissions were estimated for 8000 vehicular miles and 6750 vehicular miles. This provides a range of estimated vehicular trips. Additionally, 1974 average emission factors were utilized since EPA has indicated that the reduced vehicular emissions schedule will be relaxed.

If we can provide further information, please do not hesitate to contact us. Otherwise we look forward to your reply.

Very Truly Yours,

F. J. Rodriguez

cc. Community Planning, Inc.
Mr. Fred J. Rodriguez
Environmental Communications Inc.
Harbor Square, Town Towers, 7-F
225 Queen Street
Honolulu, Hawaii 96813

Dear Mr. Rodriguez:

This is in reply to your letter requesting a review of the vehicular emission data for the proposed second access roadway to Leeward Community College and its impact on ambient air quality standards.

Since there is no applicable calibrated diffusion model available to predict the relative emission concentration, this approach cannot be taken.

However, based on the estimated traffic density and the estimated emissions calculated on the basis of 1974 average emission factors, it can be assumed that the project will not have an adverse effect on ambient air quality, for the following reasons:

1. The size and scope of the project is relatively small with a traffic density much lower than many high volume corridors such as Farrington Highway or H-1.

2. The project is located in an area of low population density with excellent dispersal qualities due to the open areas of Pearl Harbor, the Waipahu High School athletic field and the undeveloped area between the project and Pearl Harbor.

3. Federal emission control requirements for new cars will have an effect on reducing emissions as the pre-1968 and, subsequently, pre-1975 vehicle population is reduced.

4. Assessment of other projects such as the Hawaii Loa Ridge Cluster Development utilizing the box model with similar traffic volume indicated very little impact of air quality.

Since the diffusion model is not available at this time nor is it feasible for small projects, the best available means of evaluating impact of...
vehicular emissions is to compare proposed projects with existing traffic corridors or utilizing a box model.

Sincerely,

JAMES S. KUMAGAI, Ph.D.
Deputy Director for Environmental Health
September 10, 1971

Ref. No. 51/C1/33

TO: PLANNING COMMISSION
FROM: ROBERT R. WAY, PLANNING DIRECTOR
SUBJECT: REQUEST FOR GENERAL PLAN AMENDMENT

Attached for your review is a report on an application to amend the General Plan. The essential information in respect to this request is as follows:

Applicant: Herbert K. Horita Realty, Inc.
Ownership: Herbert K. Horita Realty, Inc.
Request: The application requests a change in the General Plan and Waiawa-Halawa Detailed Land Use Map from Institutional to Medium-Density Apartment.
Location: Located adjacent to the Middle Loch of Pearl Harbor, makai of Waipahu High School.

Tax Map Key: 9-4-08: 23
Area: 18.942 acres
City and County Zoning: Residential R-6
Detailed Land Use Map Designation: Institutional--Junior College Site
Existing State Land Use Designation: Urban
Existing Use: Vacant and lying fallow

It is the applicant's proposed intention to develop the area for Medium-Density Apartment use. The specific proposal calls for construction of 496 one- and two-bedroom units in four-story structures.

The applicant proposes to develop the subject land with all rental units, utilizing HUD's Section 236 program. Section 236 is an interest subsidized rental program for lower income families. Under this program, monthly rental charges are reduced to a level which lower income families can afford through periodic interest payments from HUD to the mortgagee providing the takeout financing for the rental project. Rental supplement under Section 101 of the Housing and Urban Development Act of 1965 may also be used for up to 40% of
the rental units. The rental project must give preference to the lower income families who must have an adjusted income no greater than 135% of the limits prescribed for admission to local public housing. If there are insufficient numbers of lower income families, prospective tenants who can pay the full market rental may be accepted but would not be eligible for interest subsidy benefits.

The applicant has prepared and submitted, in support of his request, an analysis of the need for housing by low and moderate income families with particular emphasis on the need for rental apartments by small families in these income groups. This analysis meets the requirement that long-range comprehensive studies provide the basis for General Plan amendments.

It has been concluded from our review that the applicant has adequately substantiated his request, and it is recommended that the request to amend the General Plan be approved.

ROBERT R. WAY
Planning Director

Attach.
September 10, 1971

Report on a Request
to Amend the General Plan
Reference No. 51/C1/33

1. Statement of Need

The basic need which the applicant is attempting to address with this amendment proposal is that of low and moderate income families for housing. Low to moderate income families are defined as those whose incomes range between $6,000 and $15,000 per year or, in other words, the "gap-group." The applicant asserts that there exists a shortage in housing to meet the needs of this income group which has "reached the point of crisis." He identifies the causes of this crisis as (a) high land cost resulting from a scarcity of suitable lands for housing, (b) inefficient land use inherent in the development of conventional single-family detached units, and (c) construction costs which have increased at a considerably faster pace than wages and salaries.

The applicant indicates that 63.4%, or 104,460 Oahu families earn $13,000 per year or less and cannot normally qualify for a mortgage of more than $30,000. This compares with only one development on Oahu which is currently offering homes at less than $30,000. Although some studio and one-bedroom apartment units in condominium projects in Honolulu are being offered at less than $30,000, these are not considered by the applicant to be adequate for the family market. On this basis the applicant concludes that substantial numbers of gap-group families are seeking and require rental units to satisfy their housing needs.

Based on population projections prepared following the 1970 census by the State Department of Planning and Economic Development, the applicant projects a need on Oahu for construction of 7,200 new housing units per year over the next ten years. Of this number, 2,200 units per year are projected to be needed in the Ewa District, within which the area under consideration is located.

To help satisfy this unmet housing need, it is the applicant's objective to provide rental apartments at a cost which can be afforded by gap-group families.

Although the applicant attempts to estimate the size of need for rental apartment units by gap-group families, it is this group's basic need for housing, irrespective of whether the need is satisfied through rental or ownership arrangements, which forms the essential justification for the requested change from an Institutional to Medium-Density Apartment designation on the General Plan.
Due to a lack of data, the deficiency of housing units priced in accordance with the ability to pay is not precisely known, and attempts by the applicant to estimate the size of this deficiency rely on assumptions which are open to question. However, while the exact dimensions of the deficiency in low and medium priced housing may be disputed, the available information does point to the existence of such a deficiency. Therefore, we find the applicant's establishment of overall need is acceptable.

The applicant's estimates and conclusions in respect to housing needs on Oahu and the proportion of need projected for the Ewa District based on updated population data resulting from the 1970 Census are in general accord with the studies that formed the basis for the General Plan. These studies show that population will increase most rapidly in both the Koolau and Ewa Districts and this growth pattern will result in the Ewa District having the largest absolute number of people outside of the Honolulu District.

Thus, the General Plan did, in fact, anticipate the population growth and need for residential and apartment lands to accommodate the required dwelling units. What the General Plan did not anticipate was the problem of being able to supply housing in accordance with the ability of people to pay. That is, the General Plan failed to recognize the economic problems arising from the high cost of housing and the inability of the housing market to meet the housing needs of families with low and middle incomes. There is an implicit assumption that these needs would be met within the lands designated for residential and apartment use by the General Plan. In addition, it was also assumed in the General Plan that the land designated for these uses would be available for such uses at prices which would be compatible with meeting housing needs. This is not necessarily true.

There is, however, an unmet need for housing that was not anticipated in the General Plan and the applicant attempts to estimate the size of this unmet need as it exists in Leeward Oahu. Unfortunately, data does not exist that will permit, at this time, an accurate determination of housing need by income groups by area. Evaluation of available information by the Planning Department does, however, substantiate the existence of an overall unmet need for low and moderate income housing units. This unmet need may be met in part by the addition of rental apartment units in the Ewa District.

2. Alternatives Available to Meet this Need

The applicant has shown that there is need for the intended use, and indicates that the site is no longer needed for the use shown in the General Plan. Therefore, rather than evaluate
potential alternative locations for satisfying low and moderate income housing needs, the applicant relies upon showing that provision of rental apartments is a desirable alternative to help meet low and moderate income housing needs and that the subject site is an appropriate location for such use in terms of location relative to commercial and employment centers and availability of public and private services.

To support his contention that rental housing is a practical and desired alternative in meeting low and moderate income housing needs, the applicant sampled a number of rental housing projects for lower income families. The sampling revealed a 0% vacancy factor for projects including over 6,000 rental units and waiting lists with the names of over 7,000 applicants. Although this information in no way attempts to compare the applicant’s proposed development with those sampled in terms of amenity and location, it does indicate a substantial demand by lower income families for appropriately priced rental housing.

The applicant does not sufficiently evaluate the adequacy of lands already appropriately designated for residential and/or apartment use to alternatively meet identified housing needs. However, a study of vacant land, undertaken by the Planning Department, which is based on June 1970 survey data, provides some insight in this regard. From data contained in this study it can be roughly estimated that there are approximately 6,230 acres of vacant, usable land planned for residential use in the State Urban Land Use District. This estimate can be compared with the 9,931 acres (December 1968 data) estimated in the Oahu Transportation Study and the 12,429 acres (December 1969 data) estimated by the Land Study Bureau. It can be further estimated from the Planning Department study that approximately 2,400 acres of the estimated total represents vacant usable land planned for residential use within the Ewa District. Of course, considerable care must be taken in using these data since the surveys were prepared on different basis. For example, the Land Study Bureau’s survey counts lands on which residential use is permitted by the Comprehensive Zoning Code whereas the OTS and Planning Department’s surveys consider land which is designated for residential use by the City and County General Plan.

The Planning Department survey and the OTS data indicate that roughly 10 percent of land within the Urban District is planned for residential use and is vacant. This includes land which though vacant is already committed to residential development (e.g., development rights have been purchased and construction plans exist) and, in this sense, is not "available" to other developers. An evaluation of this data suggests that there is some basis for the statement that the supply of land within Urban Districts to meet the needs of the market for low and moderate priced housing is relatively limited. However, data available at this time cannot be interpreted to support a general conclusion that land planned for residential development within
the Urban District is in "short supply."

The present request is for a decision to change land use policy expressed in the City and County General Plan and, as such, the City's policy should also be considered in making this decision. From this perspective there is an estimated 11,100 acres of vacant, usable land shown in the General Plan for Residential use. Although about 4,900 acres of this land appear to fall outside of the present Urban District, it does indicate the City's policy as to where district boundaries should be expanded. However, if we proceed on the basis that land outside of the Urban District is not available for residential development, the data lead to the conclusion that those areas established for residential purposes within the Urban District should be fully utilized. On the basis of this conclusion and the specific amendment proposal addressed by this report, it follows that prime consideration also be given to redesignating for residential use those areas currently reserved for uses which it can be demonstrated are no longer needed or the need for which have been satisfied in other locations.

More specifically, a special survey prepared by the Planning Department indicates that of 743 acres designated in the General Plan for Apartment use within the State Land Use Urban District and located in the Ewa District, 475 acres are vacant and have slopes of less than 20 percent in grade. However, of the 475 acres classified as vacant and amenable to development in terms of slope, 58 acres will be taken for construction of the Kahului Interchange and another 266 acres have already been included as part of larger developments for which specific implementation plans are known to exist. This means that an effective balance of approximately 151 acres of vacant, usable land designated in the General Plan for Apartment use might be considered as alternatively available to the applicant for implementation of an apartment development. Comparisons which can be drawn between Planning Department and Oahu Transportation Study survey data for the Ewa District suggest that the inventory of vacant, usable area designated in the General Plan for Apartment use and within the Urban District has remained stable during the 18-month period separating the two surveys. In other words, those lands removed from the inventory as the result of development or through changes in General Plan designations have been replaced by the designation of other apartment areas in the General Plan.

Although considerable acreage is available for apartment development, it is not necessarily available to meet the specific needs of families having moderate incomes. This factor was not taken into account when land was designated in the General Plan for Apartment use. Given the explicit evidence of an unmet need for lower priced housing which currently exists and the inability to satisfy this need on lands now designated for any type of residential use, it is concluded that this failure is in part attributable to the deficiencies of current General Plan policy.
in respect to land for housing. This policy as it relates to apartment use does not consider whether areas so designated would be available under terms which are responsive to the housing needs of all families, and particularly, moderate income families. Therefore, given this deficiency in existing General Plan policy and the significantly better locational suitability of the subject site for Apartment rather than Residential use, it is concluded that an addition to the inventory of lands designated for Apartment use as specifically proposed by the applicant is reasonable and appropriate.

3. Adequacy of the General Plan

In accepting that there exists a deficiency in housing to meet the needs of low and moderate income families, the staff concludes that the General Plan is inadequate in terms of its responsiveness to meeting the housing needs of people in accordance with their ability to pay. Although the land designated in the General Plan for residential use may be adequate when considering gross residential requirements, it is not necessarily adequate when considering particular housing needs, and specifically the need for low and moderate income housing.

It should be additionally considered, though not technically in the category of an inadequacy, that the General Plan is not up to date in terms of the subject property. The subject property is shown on the General Plan for Institutional use as a Junior College site and since adoption of that plan, the Leeward Community College has been located at another nearby site. Furthermore, neither the Leeward Community College nor the new Waipahu High School located on adjacent property have any desire to expand their campus areas to include the subject property. It, therefore, is reasonable on this basis to consider an alternative General Plan designation for the site.

4. Waipawa Road Widening and Extension

An important related issue affecting the General Plan is a joint request by Herbert K. Morita Realty, Inc., and the B. P. Bishop Estate which is supported by the Community Colleges System that Waipawa Road be shown on the General Plan as a 60-foot road from Leeward Community College to Waipio Access Road.

The City Traffic Department also supports this request, but recommends that the proposed road be extended in an easterly direction into First Street connecting with Lehua Avenue in Pearl City. The Traffic Department's recommendation would provide for a continuous east-west road between Waipio Access Road and Lehua Avenue which would serve major local traffic needs generated by significant existing and proposed developments makai of the H-1 Freeway and Waipawa Interchange to the Middle Loch of Pearl Harbor.
The major need addressed by this proposal is that of Leeward College for improved accessibility. At present, Leeward College, with a future potential enrollment of 10,000, is served by a two-lane road which bridges the H-1 Freeway and connects with Kauhau Mill Road. Location of this access road within the Waiawa Interchange network severely limits future improvement potential. The new proposed road would also permit traffic destined for or originating from Leeward College and Waipahu High School to completely bypass the Waiawa Interchange and could help to relieve overloaded conditions on the interchange.

The Traffic Department considered three alternative alignments for the proposed road and recommends Alternate 1 as the most direct alignment involving the least number of turning movements for drivers having Leeward College as an origin or destination. Improvement of the existing mauka access road, if feasible, was not considered as a legitimate alternative to the proposed road since this would not contribute to relieving overloaded traffic conditions on the interchange or the needs of other developments in the area.

The 60-foot right-of-way recommended by the Traffic Department is based upon ultimate enrollment projections for Leeward College and Waipahu High School of 10,000 and 3,000 students respectively and existing and proposed general plan uses.

5. Other Considerations

Pertinent comments received from other agencies are as follows:

a. Schools

The proposed development is anticipated to increase elementary school enrollment by 100 students. This will result in temporary overcrowding at Ahana Elementary School in 1973 and 1974 which will be relieved upon opening of View Elementary School in 1975.

b. Parks

Objections were raised by the Parks and Recreation Department to an initial proposal by the applicant for a development of 675 apartment units. A key objection was that the proposed development was isolated from other recreation and parks facilities and did not adequately provide for onsite facilities to meet such needs. As a consequence of this objection, representatives of the Parks and Recreation Department and the applicant met and mutual understanding was reached as to the adequacy of onsite recreational facilities based on a development of 476 apartment units. The applicant has indicated that at least 1 to 1.5 acres of
recreational open space will be provided within the development. This is adequate to meet minimum standards established in the General Plan.

c. Sewers

The subject property is not now served by public sewerage facilities. The Eva Branch Trunk Sewer presently terminates at Leeward Community College approximately 1,200 feet away. The capacity of this trunk sewer is adequate to accommodate the proposed development and the applicant proposes to extend the sewer to serve his property. Inasmuch as the subject area is surrounded by existing urban development, it seems reasonable to change its General Plan designation without direct availability of sewerage facilities. Other steps necessary to implement the proposed development can insure that such facilities are made available by the applicant to the subject site.

d. Roads and Traffic

The proposed Medium-Density Apartment development is required, by standards set forth in the General Plan, to be served by a road having a minimum right-of-way of 56 feet. The 60-foot-right-of-way road proposed between Waipio Access Road and Lehua Avenue has, in part, been planned to meet the access and traffic needs of this development.

6. Recommendations

a. It is recommended that the General Plan Detailed Land Use Map for the Waiau-Walawa area be amended in respect to the subject site from an Institutional to a Medium-Density Apartment designation as requested by the applicant.

b. It is further recommended that the General Plan Detailed Land Use Map be amended to indicate a 60-foot right-of-way road between Waipio Access Road and Lehua Avenue as recommended by the City Traffic Department.
LOCATION MAP

Proposed General Plan Amendment
51/C1/32
APPENDIX E

DEPARTMENT OF THE ARMY
U. S. Army Engineer District, Honolulu
Building 230, Fort Shafter
APO San Francisco 96558

17 January 1975

PUBLIC NOTICE NO. PODCO-O 1180-S

TO WHOM IT MAY CONCERN:

1. Notice is hereby given that the Department of Accounting & General Services, Public Works Division, State of Hawaii, 465 South King Street, Honolulu, Hawaii 96813, has applied to the Department of the Army for a permit to perform work in the navigable waters of the United States, island of Oahu, State of Hawaii. This application will be evaluated under Section 10 of the River and Harbor Act, approved 3 March 1899 (33 U.S.C. 403).

2. The applicant proposes to construct two (2) storm drain outlet structures in Middle Loch, Pearl Harbor. All work will conform to the attached drawings (3 sheets) entitled "Proposed Drain Outlets in Pearl Harbor (Middle Loch) at Waipio, Ewa, County of Honolulu, State of Hawaii, Application by Dept of Accounting & General Services, Public Works Division, State of Hawaii," dated 29 October 1974.

3. At this time, it does not appear that the proposed project will require the preparation of a Federal Environmental Impact Statement by the Corps of Engineers.

4. A permit issued by the Department of the Army does not give any property rights, either in real estate or materials, or any exclusive privileges, and does not authorize injury to private property or invasion of private rights, or infringements of Federal, State, or local laws or regulations. Further information may be obtained from the Operations Branch, Honolulu District, Room 204, Building 230, Fort Shafter, telephone 86-3258 or 86-3259. Written inquiries should be mailed to this District as given in the letterhead.

5. Interested parties may submit in writing any comments that they may have on the proposed work. The responsibility of the Corps of Engineers is the protection of the public's interest in the navigable waters of the United States. The decision whether to issue a permit will be based on an evaluation of the probable impact of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered; among those are conservation, economics, aesthetics, general environmental concerns, historic values, fish and wildlife values, flood damage prevention, land use classification, navigation, recreation,

RECEIVED JAN 20 1975
PUBLIC NOTICE NO. PODCO-0 1180-S

State Dept of Accounting & General Services

17 January 1975

water supply, water quality, and, in general, the needs and welfare of the people. No permit will be granted unless its issuance is found to be in the public interest. Comments should be forwarded so as to reach this District not later than forty-five (45) days from date of this notice.

Incl

Drawings (3 sheets)

F. M. PENDER
Colonel, Corps of Engineers.  
District Engineer
PURPOSE: CONSTRUCTION OF DRAIN OUTLETS

STATE: HAWAII

CITY AND ADDRESS OF ADJACENT PROPERTY OWNERS:
1) HAWAII ELECTRIC CO., INC. TUKI: 8-4-0819
   P.O. BOX 2750 HONOLULU HAWAII 96803
2) HERBERT K. KONITA REALTY, INC. TUKI: 8-4-0814
   8214 H. KING ST. HONOLULU HAWAII 96810

METE OR ACCIDENTAL
PUBLICATION: STATE HAWAII
APPLICATION BY GENERAL CONTRACTOR

DATE: DEC. 23, 1974

SCALE IN 100 FT.

PROPOSED DRAIN OUTLET
IN PEARL HARBOR (MIDDLE LOCH)
AT WAIPIO, HAWAII

COUNTY OF HONOLULU
STATE HAWAII

Directions for Drainage Outlets

LOCATION MAP

VICINITY MAP

OAHU

PROJECT SITE
DRAIN OUTLET
TYPICAL PLAN VIEW

PURPOSE: CONSTRUCTION OF DRAIN OUTLETS

DATE: 0.00

NAME AND ADDRESS OF ADJACENT PROPERTY OWNERS:

1. HAWAIIAN ELECTRIC CO. INC. TMK1: 7-4-0612,
   P.O. BOX 5150 HONOLULU HAWAII 96850

2. HERBERT K. HIJATA REALTY INC. TMK1 7-4-6823
   1084 N. KING ST. HONOLULU HI 96817

PROPOSED DRAIN OUTLETS
IN PEARL HARBOR (WIDOW LOCK)
AT WAIPIO, OHA

COUNTY OF HONOLULU STATE
APPLICATION BY

PUBLIC WORKS DIVISION, CITY OF HAWAII

SHEET 2 OF 3 DATE 0.00
TYPICAL OUTLET FRONT ELEVATION

SECTION "A-A"

SECTION "B-B"

PURPOSE: CONSTRUCTION OF DRAIN OUTLETS

DATE 1-25-79

NAME AND ADDRESS OF ADJACENT PROPERTY OWNERS:

1. HAWAIIAN ELECTRIC CO. INC. THK-1-4-0512
   P.O. BOX 7750 HONOLULU HAWAII 96823

2. HIBASA & HIRATA REALTY INC. THK-1-4-08123
   2824 N. KING ST. Wahiawa, HI. 96786

PROPOSED DRAIN OUTLETS

IN PEARL HARBOR (Middle Loch)

AT MAINE, OWA

COUNTRY OF HONOLULU STATE HAWAII

APPLICATION BY:

DEPT. OF REVOLUTION & GENERAL SERVICE

FUND WATER DEPARTMENT

SHEET 3 OF 3 DATE 3-23-79