



EXECUTIVE CHAMBERS

HONOLULU

GEORGE R. ARIYOSHI  
GOVERNOR

February 25, 1986

Ms. Letitia N. Uyehara, Director  
Office of Environmental Quality Control  
465 South King Street, Room 115  
Honolulu, Hawaii 96813

Dear Ms. Uyehara:

Based on the recommendation of the Office of Environmental Quality Control, I am pleased to accept the final environmental impact statement for the Makai Boulevard Concept as a satisfactory fulfillment of the requirements of Chapter 343, Hawaii Revised Statutes.

This environmental impact statement will be a useful tool in deciding whether this project should be allowed to proceed. My acceptance of the statement is an affirmation of its adequacy under applicable laws and does not constitute an endorsement of the proposal.

When the decision is made regarding this action, I expect the proposing agency to carefully weigh the societal benefits against the environmental impact which will likely occur. This impact is adequately described in the statement, and, together with the comments made by reviewers, provides a useful analysis of alternatives to the proposed action.

With warm personal regards, I remain,

Yours very truly,

  
George R. Ariyoshi

cc: Honorable Wayne Yamasaki

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FINAL

**ENVIRONMENTAL  
IMPACT  
STATEMENT**

**FOR  
THE  
PROPOSED**

**BETWEEN  
MIDDLE STREET  
TO  
PIER 18  
Project No. F-092-1(16)**

**HIGHWAYS DIVISION  
DEPARTMENT  
OF TRANSPORTATION  
STATE OF HAWAII**

**FEDERAL HIGHWAY  
ADMINISTRATION  
U.S. DEPARTMENT  
OF TRANSPORTATION**

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SUMMARY

## SUMMARY

### A. Description of the Proposed Action

The proposed action consists of improving 2.2 miles of Nimitz Highway between Middle Street and Pier 18. The project is located in the Honolulu District on the island of Oahu (Figure 1). This section of Nimitz Highway is characterized by light and medium industrial development, strip commercial uses, as well as major harbor terminal and storage facilities.

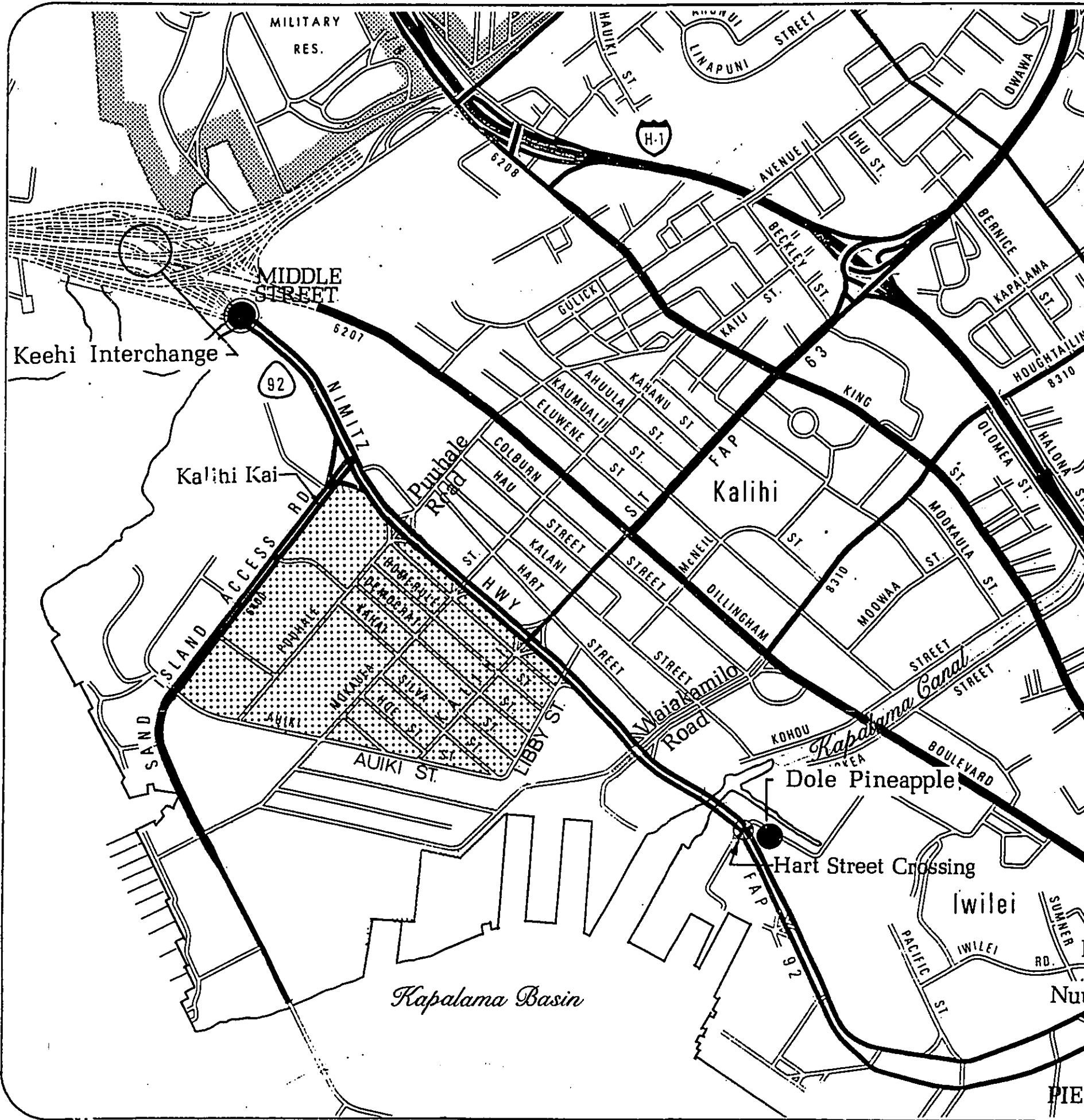
The need to improve traffic flow along Nimitz Highway is based on projected traffic volumes, which will cause increased congestion. Currently, the corridor is already congested during peak traffic periods. By the year 2002, traffic volumes are expected to increase, from an average of 61,000 vehicles per day in 1982, to 75,000 vehicles per day in 2002. Other problems which contribute to congestion, include: narrow shoulder widths (or no shoulders at all), narrow lane widths, insufficient lateral clearances, improper superelevations (roadway banking) combined with sharp curves, roadside parking, closely spaced intersections, inadequate laneage and an inadequate traffic signal system.

### B. Description of Any Significant Action Proposed in the Vicinity of the Project

The imminent completion of the Keehi Interchange, as well as the proposed development of the Sand Island Industrial complex are also expected to contribute to congestion along the Nimitz Highway corridor.

### C. Preferred Alternative

The recommended alternative is intended to increase Nimitz Highway



MILITARY RES.

MIDDLE STREET

Keeki Interchange

Kalihi Kai

Kalihi

Waikamilo

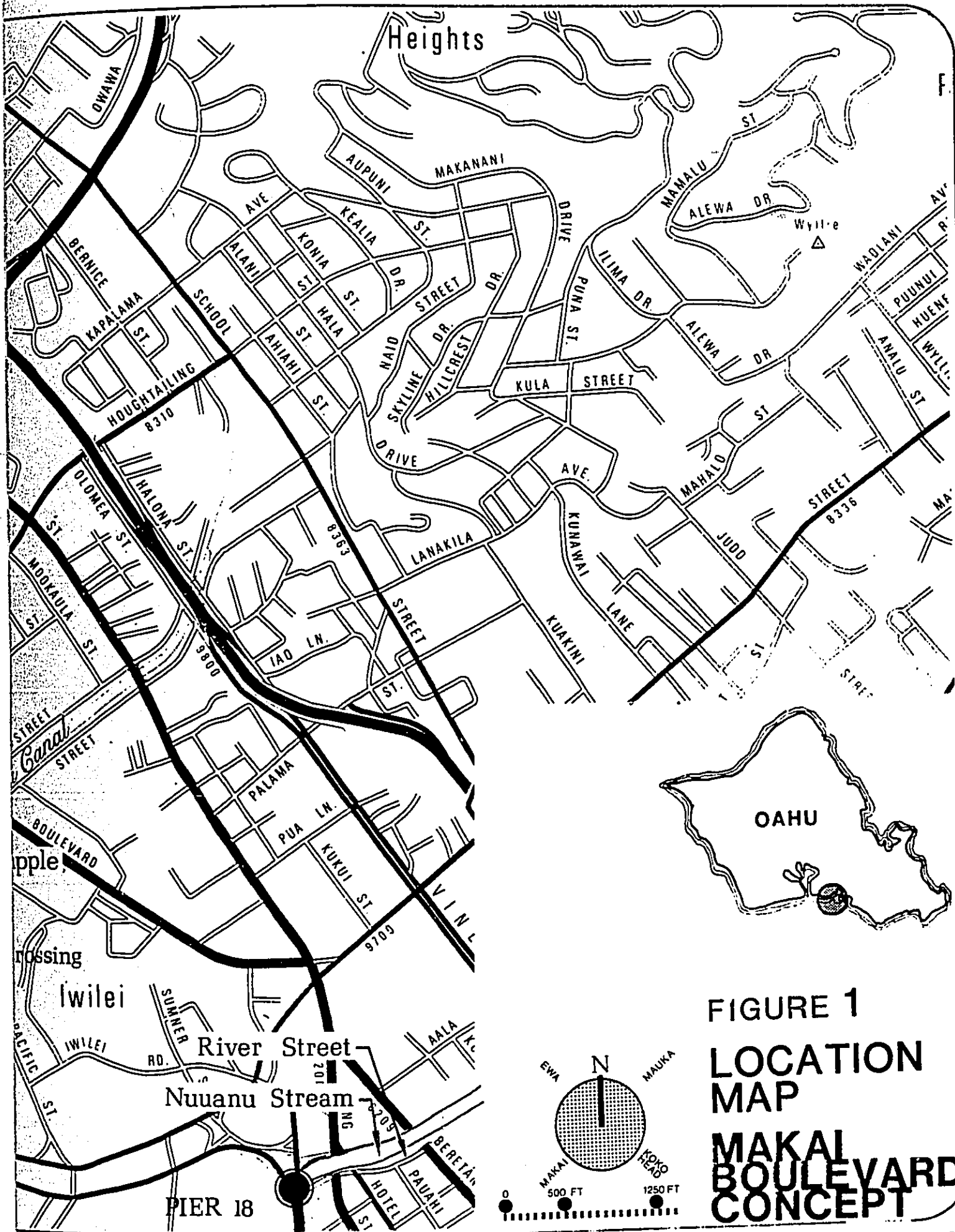
Dole Pineapple

Hart Street Crossing

Iwilei

Kapalama Basin

PIE



**FIGURE 1**  
**LOCATION**  
**MAP**  
**MAKAI**  
**BOULEVARD**  
**CONCEPT**



capacity within strict fiscal constraints. Alternative IA is the most economically feasible and socially acceptable plan at this time. It has the lowest construction cost and a minimal amount of right-of-way taking. It would retain the existing traffic movements. Minimal amounts of landscaping would be uprooted, but replaced during construction. It can also be implemented more quickly and will have the least impact on traffic during construction. Improvements made under Alternative IA would support any long-range implementation of Alternatives II, III, or IV.

Alternative IA includes minor paving and restriping of the cross approaches, provisions for a new left turn opening to Libby Street and double left turn lanes to Sand Island Access and Waiakamilo Roads, and an improved traffic signal system. Nearly 49,490 square feet, at \$1,981,600 will be acquired for increased right-of-ways. Total cost for this improvement would be \$3,441,600.

D. Other Major Alternatives Considered

1. Alternative I

Alternative I provides intersection improvements and includes several options which may be implemented in various combinations. These proposals improve traffic conditions by increasing the "green time" for Nimitz Highway traffic through more efficient use of other portions of the signal cycle.

Alternative IA is the selected alternative and has been previously described. This however, is a short-term solution, and increasing traffic would cause peak hour congestion to reoccur as early as 1987.

Alternative IB is a traffic flow plan which would restrict selected traffic movements between Libby Street and Puuhale Road. Left

turns from Nimitz Highway into Puuhale Road and into Kalihi Street would be eliminated but would be permitted into Mokauea and Libby Streets. Traffic from Mokauea Street would not be allowed across Nimitz Highway; straight ahead or left turn traffic would have to use Puuhale Road or Kalihi Street. Some rerouting of traffic would be necessary with this plan. Approximately 9,090 square feet at \$365,000, will be acquired for increased right-of-way.

Alternative IC proposes a grade separated solution at Waiakamilo Road. A flyover ramp would serve traffic making the left turn from Waiakamilo Road into Nimitz Highway, inbound. 45,200 square feet at \$1,808,000, will be acquired for increased right-of-way. Total cost for IA + IB + IC would be \$6,643,600.

2. Alternative II

Alternative II adds one lane for through traffic in the eastbound direction. The minor paving, restriping and traffic signal system improvements in Alternative IA are also part of this alternative and all traffic movements presently allowed will be permitted. In Alternative II, the additional eastbound lane is added into the existing right-of-way by relocating the outer curbs and eliminating the planted medial strip. If it is decided to continue the planted medial strip, the additional right-of-way could be acquired from frontage on Kananui Street; this will decrease the available parking for businesses in the area. Nearly, 40,990 square feet, at \$1,641,600, will be acquired for increased right-of-way. Total cost for this alternative would be \$3,471,600.

3. Alternative III

Alternative III is a two-lane viaduct for eastbound traffic

only, from Middle Street to Kapalama Canal. All westbound traffic would be served at-grade, in three through lanes. Two other lanes at-grade would serve local traffic in the east direction. As in the other alternatives, minor intersection improvements will also be included. Traffic movements at-grade would be similar to the existing condition. Nearly 41,690 square feet, at \$1,981,600, will be acquired for increased right-of-way. Total cost for Alternative III would be \$16,201,600.

4. Alternative IV

Alternative IV is an overhead viaduct from Middle Street to Kapalama Canal, which would separate eastbound and westbound through traffic from the local traffic. Four lanes in each direction would be provided, two at ground level and two on the viaduct. Nearly 50,540 square feet, at \$1,981,600, will be acquired for increased right-of-way. Total cost for this alternative would be \$29,851,600.

E. Summary of Significant Environmental Impacts

Since the alternatives developed are similar in scope and will affect basically the same sections of the highway corridor, the environmental impacts for each alternative will be relatively similar. A summary of the probable significant environmental impacts are as follows:

1. Ecological Impacts. No endangered or endemic species of flora exist within the project site. A few scattered areas on the median and adjacent sidewalks contain Coconut Palms and Banyan trees.
2. Air Quality Impact. During construction, some dust will be generated. This problem, however, is not anticipated to be significant due to the limited scope of work associated with the preferred alternative.

In the long-term, vehicular emissions will be lowered due to recent implementation of federal controls on carbon monoxide emissions from new vehicles.

3. Noise Impact. During site preparation, clearing and construction activities, an increase of ambient noise is inevitable. To minimize such an increase, the contractor will ensure that all construction equipment is in proper condition and will enforce various methods of noise control.
4. Surface Water Quality Impact. The soil type found at the project site is characterized by slight erosive activity. During construction then, significant erosion and sedimentation problems are not expected to impact the existing streams located within the project boundaries.
5. Historical and Archaeological Site Impact. Since the proposed action will improve an already existing Nimitz Highway right-of-way, no significant historical or archaeological site is anticipated to be disturbed. There is no structure or property found on the National or Hawaii Register of Historic Places within the project boundaries. However, in the event that any unanticipated sites or remains are uncovered, the contractor will halt work and the State Historic Preservations Officer will be notified in accordance with Chapter 6, Hawaii Revised Statutes.
6. Service Facilities Impact. During construction, noise from machinery and other activities are not expected to cause severe adverse impacts, since the adjacent Puuhale Elementary School is currently air-conditioned and acoustically treated.

Following construction, the proposed action will be beneficial due to smoother traffic flow.

7. Public Utilities Impact. When necessary, utility lines, pipelines,

and poles will be relocated. The engineering consultant will coordinate relocation plans with the appropriate regulatory agency or utility company.

8. Traffic Impact. Construction would marginally affect the normal traffic flow on Nimitz Highway. However, it is anticipated that, in addition to Nimitz Highway, motorists will utilize Dillingham Boulevard and other thoroughfares to reach their respective destinations. Alternative IA would retain the existing traffic movements.
9. Economical Impact. During construction of the proposed action, there will be increased revenue to the State due to the taxes accrued from the sale of supplies. There will also be an increase in construction employment opportunities.
10. Tsunami Hazard. The project boundaries are not subject to any tsunami inundation activity.
11. Surface Water Flood Hazard. The proposed project boundaries encroach slightly into a flood plain. However, the flooding expected, is characterized by flows of shallow depths, and the proposed improvement in this area will not alter the existing grade.
12. Scenic Views Impact. Alternative IA will not impact any scenic views due to the types of improvements being proposed.
13. Regulatory Characteristics. The proposed action is in conformance with current State Land Use District Boundaries, Zoning and Development Plans.

Existing land uses will be benefitted, since traffic will flow smoother and with less congestion.

A portion of the western end of Nimitz Highway is within the Special Management (SMA) Boundary. Therefore, the selected proposed action is subject to the provisions of applicable City and County of Honolulu Ordinances and regulations.

The Honolulu Gateway Beautification Project will enhance the visual and scenic properties of the Nimitz corridor, by providing landscaping and other design amenities.

The proposed action will be cognizant of the 1995 Honolulu Harbor Master Plan; Kewalo Basin; Aloha Tower Plaza; and Piers 2 to 18, Honolulu Harbor, thereby, providing better access to each respective site.

14. Section 4(f). There are no parks, recreation areas, historic sites, wildlife refuges, etc. located along the project alignment or impacted by this project. Therefore, the preparation of a Section 4(f) Evaluation is not necessary.

F. Significant Unresolved Issues

At this time, there are no unresolved issues from the standpoint of potential environmental impacts.

G. Areas of Controversy

The proposed project does not possess any significant controversial item. The recommended proposed Alternative IA, would retain the existing traffic movements.

H. Federal Actions Required

There are no federal permit approvals or environmental requirements to be addressed at this time.

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## I. PURPOSE AND NEED FOR ACTION

### A. Purpose and Need

The purpose of this project is to improve traffic flow along the Nimitz Highway corridor (Makai Boulevard) between Middle Street and Pier 18, a distance of approximately 2.2 miles (Figure 1).

The need to improve traffic flow along Nimitz Highway is based on projected traffic volume increases, which will cause increased congestion. Currently, the corridor is already heavily congested during peak traffic periods. By the year 2002, traffic volumes are expected to increase, from an average of 61,000 vehicles per day in 1982, to 75,000 vehicles per day in 2002. Other problems which contribute to the congestion include: narrow shoulder widths (or no shoulders at all), narrow lane widths, insufficient lateral clearances, improper superelevations (roadway banking) combined with sharp curves, road side parking, closely spaced intersections, inadequate laneage, and an inadequate traffic signal system. The imminent completion of Keehi Interchange in 1986, as well as the proposed development of the Sand Island Industrial Complex are expected to further contribute to congestion along the Nimitz Highway corridor.

### B. Systems Linkage and Modal Interrelationships

The Makai Boulevard, between Middle Street and Pier 18, consists of the existing Nimitz Highway facility. This facility is a divided, major arterial providing an important link between the Honolulu Airport area and downtown Honolulu. Four lanes in each direction at Middle Street connect to the Keehi Interchange of H-1 Freeway. Between Sand Island Access Road and the separation of the highway



near Pacific Street, three through lanes are provided in each direction. Left turn lanes are cut into the median at the major intersection approaches and separate phases are given to left turns off of Nimitz Highway at signalized intersections. In the separated section to the end of the project site near Pier 18 (Sumner Street), four lanes are available in each direction.

C. Capacity

1. Traffic Volumes

Traffic analysis is based on Traffic Assignment Project TA 80-16, Makai Boulevard Concept, Keehi Interchange to Pier 18, Project No. F-092-1(16).<sup>4</sup>

The existing Nimitz Highway operates at near capacity levels during the peak periods. In the morning peak periods, between 7:00 a.m. and 8:30 a.m., eastbound traffic is heavy and experiences congestion and delay from Sand Island Access Road to Waiakamilo Road. Traffic analyses indicate levels of service D and E, which describe conditions of approaching instability with substantial delays during short peaks (D) and capacity (E), where long queues and delays of several cycles occur. The westbound volumes in the mornings are about 80% of eastbound, and westbound traffic is adequately served by the existing facility.

The afternoon peak period lasts three hours (3:00 p.m. to 6:00 p.m.) and exhibits unusual characteristics. The eastbound traffic volume between 3:00 p.m. and 4:00 p.m. is greater than the peak hour westbound volume, which is fairly constant during the three-hour period. Peak hours generally occur between 4:30 p.m. and 5:30 p.m.. Existing afternoon peak hour levels of service were calculated to be C and D

(C describes stable conditions with only occasional delays exceeding one signal cycle).

Off-peak traffic along this portion of the Makai Boulevard also exhibit unique characteristics. Between 7:00 a.m. and 6:00 p.m., off-peak traffic volumes are approximately 75% of the peak hour volumes in either direction. During the off-peak periods, higher proportions of truck traffic and high turn and cross street volumes contribute to lower capacities. From field observations, levels of service are C and D.

Night (6:00 p.m. to 6:00 a.m.) volumes drop off significantly and traffic flow has been observed to be at level of service A. The only delays are caused by chance encounters with red lights. Weekend traffic along this corridor is not significant with level of service B (occasional delays with short queues) probably describing the worst case.

## 2. Projected Traffic

Traffic volume will increase in the years 1992 and 2002 whether improvements to Nimitz Highway are implemented or not. Table 1 details projected traffic volume increases for each alternative. The table indicates that traffic volume between Sand Island Road and Puuhale Road will increase from the current 1982 average daily traffic (ADT) of 47,257 to 57,518 in the year 2002. The traffic volume between Waiakamilo Road and Pacific Street is expected to increase from the current 60,789 ADT to 74,282 ADT in the year 2002.

## 3. Level of Service

Levels of service for the project corridor were determined by analyzing each of the seven signalized intersections within the project limits<sup>1</sup>. It was determined, that existing approach

TABLE 1

AVERAGE DAILY TRAFFIC (ADT) ON NIMITZ  
GRADE LEVEL AND VIADUCT

STATION	1	1a	2	2a	3	3a	4
A) Do-Nothing							
ALT. I, II							
ADT. NO VIADUCT	1982	49,734	50,960	53,958	58,888	60,789	59,760
	1992	56,457	56,892	60,239	66,453	68,746	67,597
	2002	61,577	62,063	65,786	73,106	74,282	73,014
B) ALT. III							
ADT. WITH E.B	1992	44,249	44,684	48,031	54,245	56,538	67,597
VIADUCT	2002	48,026	48,512	52,217	59,555	60,731	73,014
C) ALT. IV							
ADT. WITH E.B	1992	29,779	30,214	33,561	39,775	42,068	67,597
& W.B VIADUCT	2002	32,811	33,303	37,002	44,340	45,516	73,014
D) VIADUCT ADT							
	1992	EAST BOUND	WEST BOUND				
	2002	12,208	14,470				
		13,551	15,211				

ADT ON VIADUCT

STATION LOCATION

1. West of Sand Island Road
- 1a Between Sand Island Road and Puuhale Road
2. Between Puuhale Road and Mokauea Street
- 2a Between Mokauea Street and Kalihi Street
3. Between Kalihi Street and Waiakamilo Road
- 3a Between Waiakamilo Road and Pacific Street
4. East of Pacific Street

widths and lane uses were loaded with the design year (2002) peak hour traffic demands. Capacity would be exceeded at the five intersections on the west half of the project corridor (Sand Island Access Road, Puuhale Road, Mokauea Street, Kalihi Street, and Waiakamilo Road). At the old Hart Street crossing just east of Kapalama Canal, capacity would not be exceeded; however the high eastbound demand would result in level of service E conditions (Figure 1). At Pacific Street, capacity is adequate, and design year traffic would be served at level of service D.

4. Needed Capacity

The project's goal is to increase the capacity of the Makai Boulevard (Nimitz Highway), between Middle Street and Pier 18. Future traffic volumes for the year 2002, which form the basis of the capacity evaluation, are expected to increase about 32 percent (inbound) and 45 percent (outbound), from present peak hour volumes. Increased capacities to accommodate such volumes will be needed.

D. Compliance With Transportation Plan and Other Legislation

The Long-Range Transportation Plan which guides transportation planning on Oahu has already examined the mode of transportation through the corridor and concluded that Makai Boulevard should be improved, although not to freeway standards.

The Nimitz Highway corridor is located in the Primary Urban Center (PUC) Development Plan (DP). The PUC DP designates Nimitz Highway as a special area and states that "the corridor deserves special consideration because of its function as the major ingress and egress route of visitors and as a major thoroughfare for residents."<sup>2</sup> The DP further states that "appropriate measures to enhance the attractiveness of this corridor and the public and

private responsibilities to implement and maintain such improvements shall be adopted." The corresponding "Development Plan Facilities Map" for the PUC designates the Nimitz Highway corridor as "Improvements Within Existing Right-of-Ways" and "Plans For Future: 7 Years and Beyond." Therefore, it is the intent of the DP to commence improvement of the corridor, by the year 1989 or later.<sup>3</sup>

E. Social Demands or Economic Development

No significant economic developments or land use changes are projected for the general area which would facilitate need for the proposed project. However, it is anticipated that additional residential population would increase at a rate consistent with the rate of growth expected in the Primary Urban Center between 1980 and 2000, which would potentially generate more traffic on the corridor. Further, as was previously discussed, there is a need to improve traffic flow along the highway, since it is anticipated that projected traffic volume increases would cause heavy congestion. Therefore, the project is necessary and would improve conditions on the highway.

F. Existing Safety Hazards

Accident rates (accidents per million vehicle-miles traveled) for the State of Hawaii, Island of Oahu, and Nimitz Highway are presented in Table 2. According to the table, accident rates on Nimitz Highway are higher than the rates for the State and County.

The recommended Alternative IA is not intended to correct an existing safety hazard. It will, however, provide additional capacity, which in turn would ease congestion and result in a generally safer condition. Potential safety hazards from excessive traffic demands would be lessened.

TABLE 2  
ACCIDENT RATES

	<u>Accident Rates*</u>
State of Hawaii, 1981	2.83/year
Island of Oahu, 1981	2.94/year
Nimitz Highway, Kalihi Stream to Pier 18, 1980-1982	3.07/year
Nimitz Highway, Sand Island Access Road to Kapalama Canal, 1980-1982	4.58/year

\*Accidents per million vehicle-miles traveled



## II. ALTERNATIVES INCLUDING PROPOSED ACTION

### A. Description of Nimitz Highway Between Middle Street and Pier 18 and Adjacent Highway Sections at Termini

Nimitz Highway is approximately 88 feet wide, with three traffic lanes in each direction, a medial strip, and channelized intersections. The posted speed limit on Nimitz Highway is 35 mph. The highway right-of-way width along most of this corridor varies between 100 and 120 feet. A 40-foot private street (Kanakanui Street) runs parallel between Puuhale Road and Libby Street (Figure 1). The separated section near Pacific Street, and the inbound eastbound lanes are in a 60-foot right-of-way, while the right-of-way for the westbound lanes varies from 60 to 75 feet.

The approaches for intersecting streets in the Kalihi section between Kapalama Canal and Keehi Interchange are generally narrow and restricted. The south approaches of Puuhale Road and Mokauea Street each consist of a single option lane for left turn and straight-ahead traffic. A traffic island provides a separate channelized lane for right turn traffic; however queues of several cars in the option lane can block movement of traffic desiring to turn right. At Kalihi Street and Waiakamilo Road (Pier 39-40 area), separate south approach lanes are provided for the left turn/straight ahead options and for right turns. No crossing of the median is presently provided at Libby Street; only right turns are allowed.

The channelized right turn lane at Sand Island Access Road is usually not blocked by vehicles waiting in the double left turn lanes.

The north approaches of Puuhale Road and Kalihi Street are single lane and serve all moves. Small traffic islands and the frequently



clear shoulder areas allow some right turn traffic to bypass other vehicles waiting at the signal. At Mokauea Street, the wider single lane approach allows a freeform separation of turning from straight-ahead traffic. At Waiakamilo Road, separate lanes are provided for the left turn/straight-ahead options and for right turns. Figure 2 shows the existing movements on the Nimitz Highway.

The west terminus of the project is presently under construction and will be part of the Keehi Interchange of Interstate Route H-1. Upon completion, scheduled in late 1986, the interchange will connect eight 12-foot lanes to Nimitz Highway. Curbs and gutters will be provided and, with the median, total roadway width at this terminus will be approximately 120 feet.

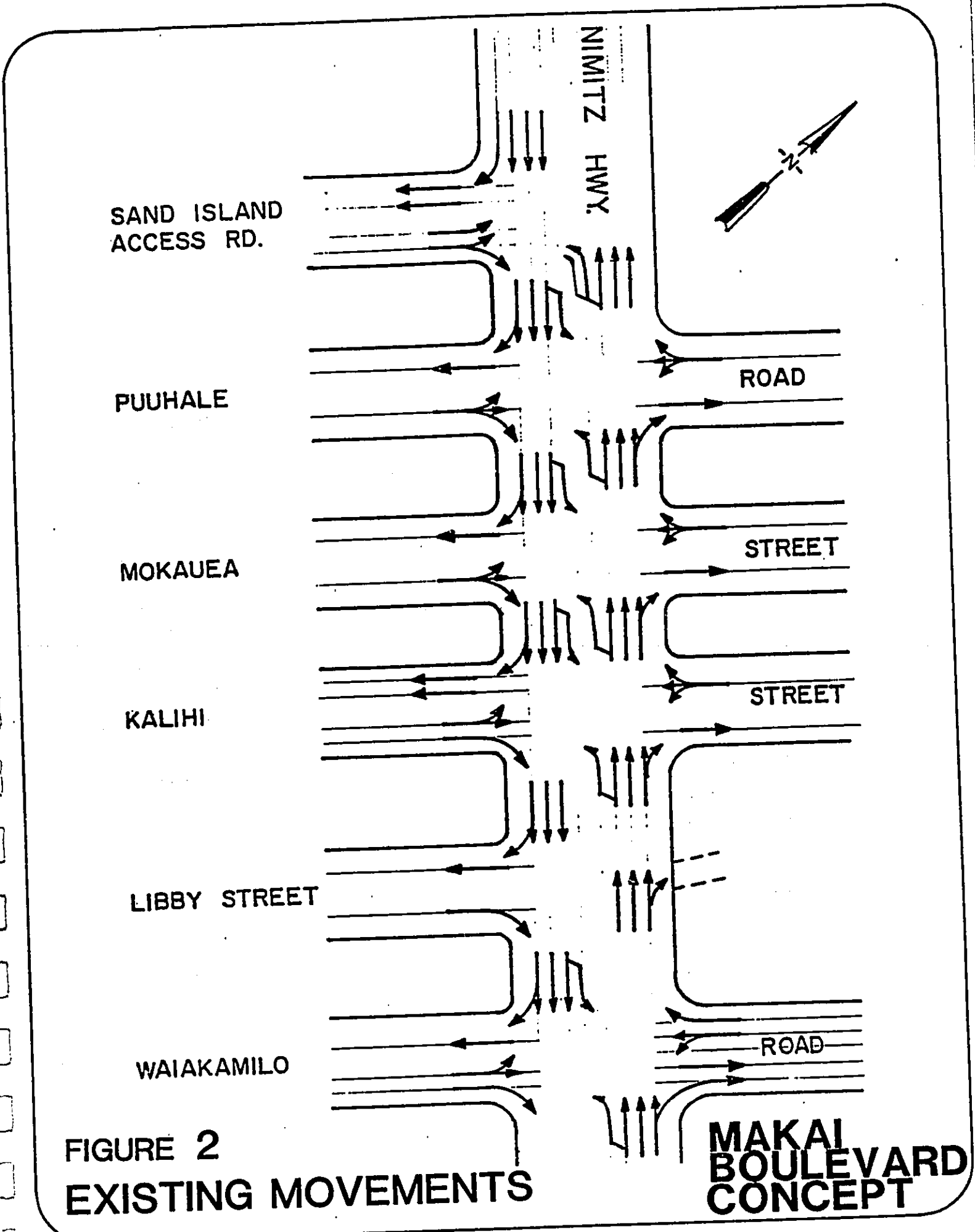
At the east terminus near downtown Honolulu, the inbound and out-bound lanes of the highway are separated by an industrial median. Four 11-foot lanes are provided in each direction with many driveways for access to waterfront areas and to activities within the medial block.

The proposed project would increase the capacity of a segment of the Makai Boulevard (Nimitz Highway) in which limited roadway width and heavy cross-corridor and turning traffic contribute to poor traffic service. The impending completion of Keehi Interchange will improve access to the Makai Boulevard corridor from the Middle Street area to downtown Honolulu.

#### B. Development of Alternatives

The project corridor has been divided into two sections to develop and evaluate alternatives (Figure 1).

In the Kalihi Section, between Middle Street and Kapalama Canal, capacities need to be significantly increased to serve the future demand. Thirteen alternatives were developed and evaluated in the



**FIGURE 2  
EXISTING MOVEMENTS**

**MAKAI  
BOULEVARD  
CONCEPT**

preliminary stage of this study; after consideration of costs, public input, environmental impacts and ease of implementation, seven alternatives were selected for further study. The table below correlates the preliminary designations with the current alternatives.

<u>Preliminary Designation</u>	<u>Description</u>	<u>New Designation</u>
A	Do Nothing	Alternative O
B	Intersection Improvements	Alternative IA
C	Minor Widening	Alternative II
D	Widening	(dropped)
E	Left Turn Restriction	(dropped)
F	HOV Lane	(dropped)
G	Traffic Restrictions/	Alternative IB
H	Flyover Ramp at Waiakamilo Rd.	Alternative IC
I	Grade Separation	(dropped)
J	Grade Separation	(dropped)
K	Full viaduct	Alternative IV
L	HOV viaduct	(dropped)
-	Viaduct (eastbound only)	Alternative III

In the Iwilei Section, from Kapalama Canal to Pier 18, only minor actions need to be implemented in order to improve safety and increase traffic service to an acceptable level.

C. Alternatives

1. Do Nothing. With no improvements to the Makai Boulevard, future peak hour traffic demands between Middle Street and Kapalama Canal cannot be served; capacities would be exceeded at each intersection. East of Kapalama Canal, sufficient capacity is available to serve the future demand; at the Old Hart crossing, however, the resultant level of service (E) would not be acceptable.

At locations in which capacities would be exceeded, some peak hour users could be expected to be diverted, either to different roadways or in time (e.g. an earlier or later hour). Future traffic demands and capacities of parallel corridors, such as Dillingham Boulevard, were checked to estimate the amount of diversion possible. Traffic demands on these corridors would be very close to, at, or exceed capacity, thereby, indicating that diversion to another major corridor would not be reasonable.

Possible diversion to local streets was also considered. The limited number of bridges over Kapalama Canal would funnel all of the local street traffic back onto the major corridors at Waiakamilo Road. Diversion onto local streets would not alleviate the overcapacity conditions.

A redistribution of travel patterns over time would decrease peak hour traffic demands and could generally be expected to occur when demand volumes approach capacities and service deteriorates.

Traffic demand peaks would be "spread out" over several hours. For this to happen, however, off-peak demand volumes should be significantly lower than capacity so that the diverted demand could be served. In the Makai Boulevard corridor, demand volumes are high throughout the day, and redistribution would result in peak conditions throughout the day. To expect that a large number of users would delay or advance their travel hour and still experience congested conditions is not reasonable.

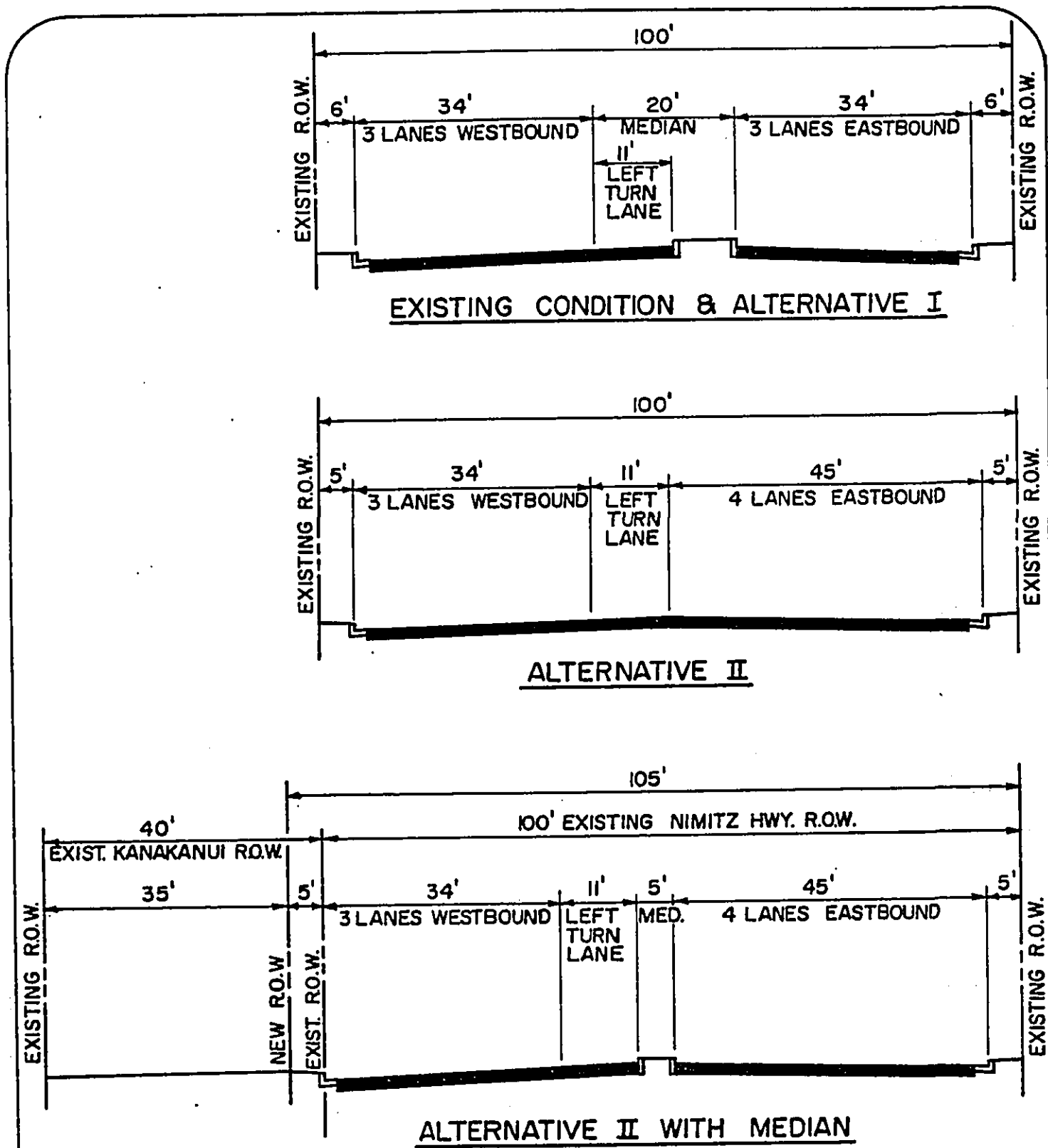
2. Alternative I. Alternative I provides intersection improvements and includes three options which could be combined in various

ways. Figure 3 provides a typical section. The various Alternative I combinations would improve traffic conditions by providing sufficient cross street capacity to allow increased "green times" for Nimitz Highway traffic.

Alternative IA is the selected proposal and predominantly includes intersection improvements at each Nimitz Highway intersection between Keehi Interchange and Kapalama Canal (Figure 4). At Sand Island Access Road, the westbound lanes are realigned to utilize the right shoulder and to provide for the left turn lane to Sand Island Access Road. For eastbound traffic a bus turnout would be provided within the large traffic island in the southeasterly corner of the intersection. At Puuhale Road, the narrow right-of-way and pavement of the north approach limit traffic to one lane in each direction. Alternative I would widen and improve the Puuhale Street north approach so that two southbound lanes could be provided. This would separate the right turn and straight-ahead traffic from the southbound left turns. Some restriping and parking prohibition on the south approach would allow an extension of the northbound right turn lane which would reduce northbound interference.

The Mokauea Street approaches would be restriped to provide separate turn lanes for eastbound traffic (Figure 5). On-street parking along Mokauea Street would be prohibited to provide an additional lane on each approach.

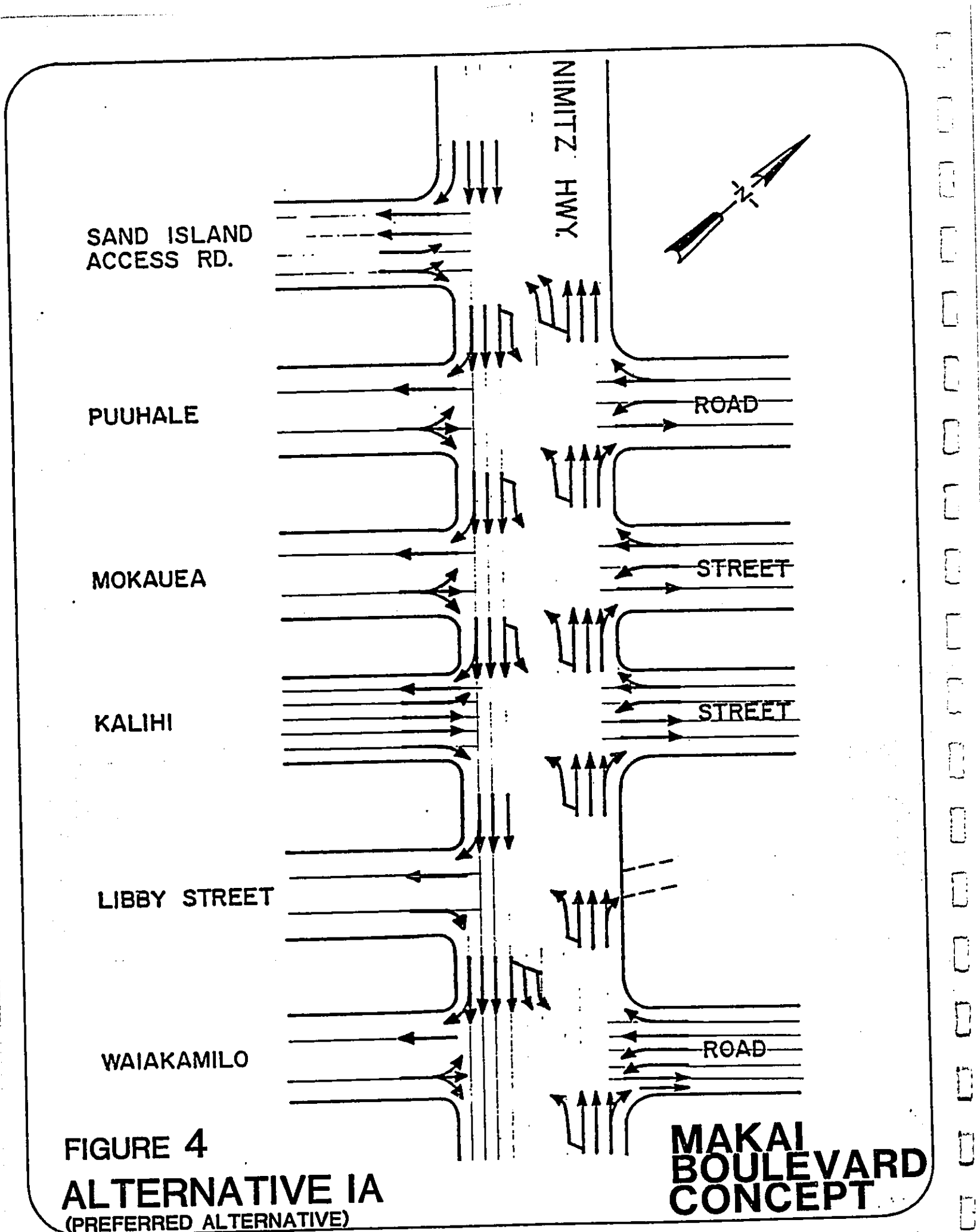
Improvements proposed for Kalihi Street include widening of Kalihi Street north of Nimitz Highway (Figure 5) and the construction of a new left turn pocket at Libby Street. The Kalihi Street widening would involve the relocation of utility poles and islands at its Nimitz Highway intersection and the widening of Kalihi Street within the existing 60-foot right-of-way to a 44-foot curb-to-curb roadway. Paved 8-foot wide



**FIGURE 3**  
**TYPICAL SECTIONS**

\*NOT TO SCALE  
 (PUUHALE ROAD TO LIBBY STREET)

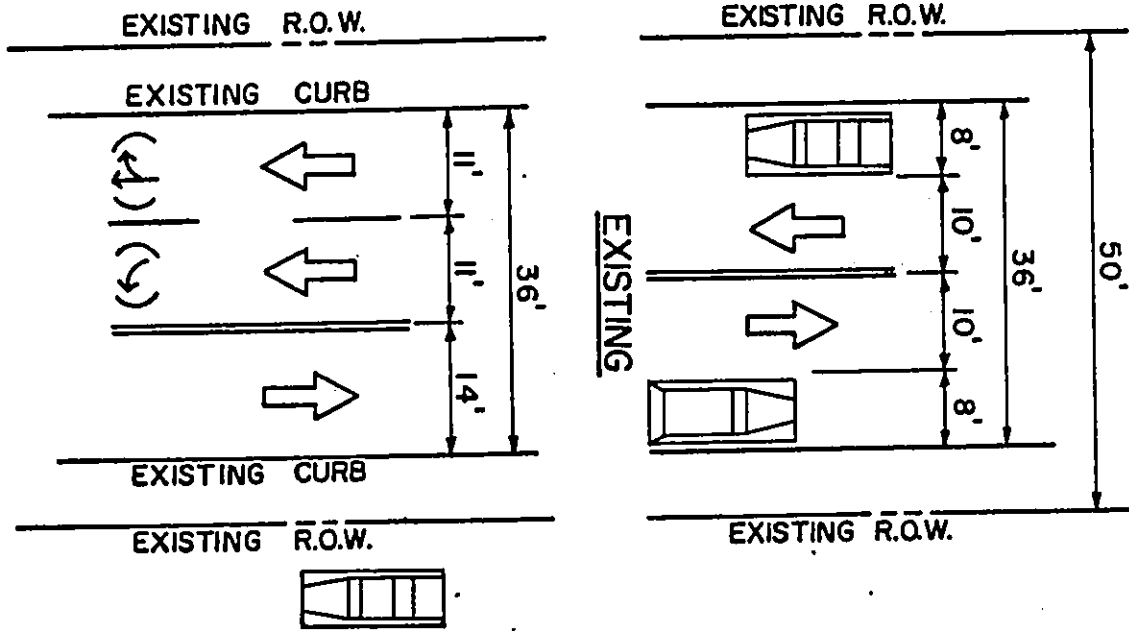
**MAKAI**  
**BOULEVARD**  
**CONCEPT**



**FIGURE 4**  
**ALTERNATIVE IA**  
 (PREFERRED ALTERNATIVE)

**MAKAI BOULEVARD CONCEPT**

**PROPOSED**  
**MOKAUEA STREET**



PARKED VEHICLE

**LEGEND:**



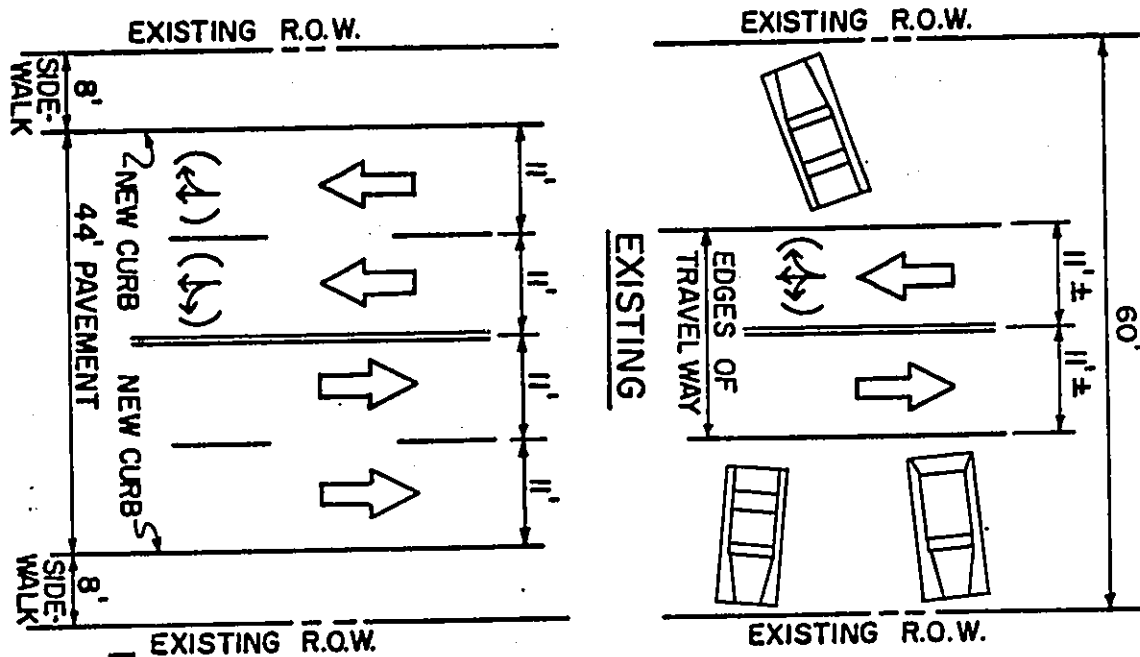
TRAVEL LANE

REFERENCE  
NORTH



LANE USE OPTIONS  
AT INTERSECTION

**PROPOSED**  
**KALIHI STREET**



**FIGURE 5**

**INTERSECTION IMPROVEMENTS**  
(0 - 300 ± FT. NORTH OF NIMITZ HWY.)

(PREFERRED ALTERNATIVE)

\*NOT TO SCALE

**MAKAI BOULEVARD CONCEPT**

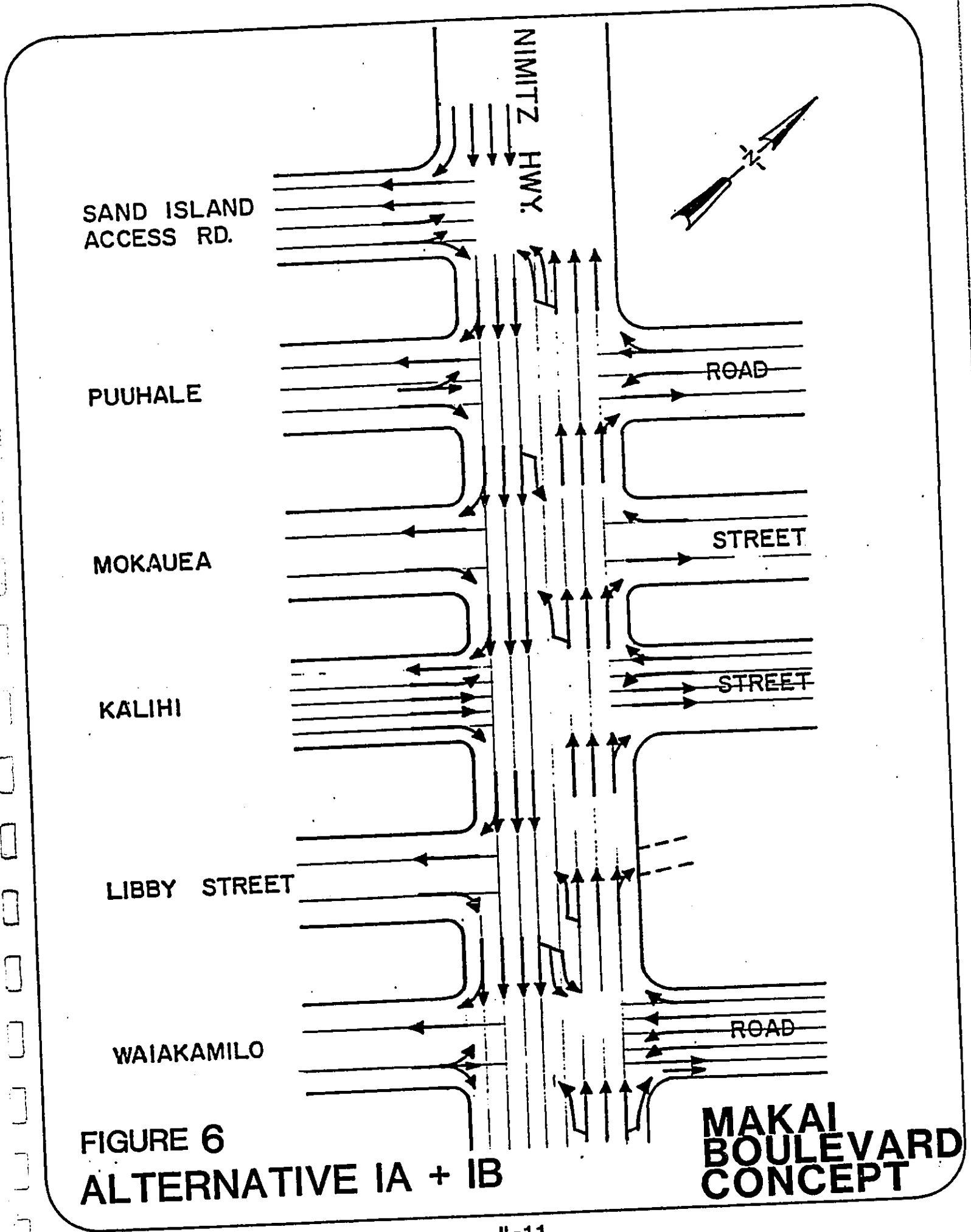


sidewalks would be located in existing shoulder areas to provide for safer pedestrian travel. The widening of Kalihi Street should ideally extend to Dillingham Boulevard to connect to the four-lane section north of Dillingham. At a minimum, the widening should extend to Hau Street, with the full four-lane section provided north of Kalani Street. South of Nimitz Highway, restriping of approach lanes would be necessary.

At Libby Street, a new opening in the medial strip to allow westbound Nimitz traffic to turn in the makai direction is expected to reduce left turn demand at Kalihi Street (Figure 1). This improvement would result in the loss of part of the planted median, and part of the paved traffic island at Libby Street. A two-phased traffic signal, connected to or controlled by the Kalihi Street signal, would be included. Westbound traffic on Nimitz will not be controlled, while east-bound traffic will be stopped in coordination with the Kalihi Street control.

At Waiakamilo Road, double off-turn lanes will be provided for traffic in the eastbound direction along Nimitz Highway. For traffic in the westbound direction, a right-turn lane from Nimitz Highway to Waiakamilo Road will be constructed. The project also proposes to widen the mauka left of Waiakamilo Road for two additional approach lanes and one additional departing lane. Current intersection plans indicate that two of the approach lane will be utilized to accommodate the heavy left-turn movement at this location.

Alternative IB modifies traffic patterns between Puuhale Road and Libby Street (Figure 6). Through traffic on Nimitz Highway and all right turns are not affected. Left turns from Nimitz Highway, however, are prohibited at Puuhale Road and at Kalihi Street. Westbound left turns to makai destinations would be allowed at Mokauea and Libby Streets; eastbound left turns to mauka destinations would be allowed only at Mokauea



**FIGURE 6  
ALTERNATIVE IA + IB**

**MAKAI  
BOULEVARD  
CONCEPT**

Street. Cross corridor traffic from the side streets (left turn and straight ahead) would not be allowed at Mokauea Street. All movements from cross-streets would be permitted at Puuhale Road and at Kalihi Street.

Alternative IC affects the Libby Street to Kapalama Canal section (Figure 7). In lieu of widening the Waiakamilo Road approach, a single lane ramp would be provided for the left turns on Waiakamilo Road. The ramp would be located in the existing median and would begin just south of Colburn Street. Ramp traffic would return to grade and merge with Nimitz Highway eastbound traffic west of Kapalama Canal. An additional eastbound lane from Libby Street would terminate in a bus turnout just east of Waiakamilo Road. An auxiliary lane for westbound right turn traffic would also be required. A left turn-only lane for traffic exiting the pier area would be provided within the existing median.

The options presented under Alternative I may be combined in several ways. Alternative IA could be implemented for all of the Kalihi Section, from Keehi Interchange to Kapalama Canal, as a short-term interim measure. Alternative IB could be implemented instead of, or as a second phase to, Alternative IA for the subsection between Puuhale Road and Libby Street. For the Libby Street to Kapalama Canal subsection, Alternative IC is an option to the at-grade improvement of Alternative IA and would limit implementation of other alternatives in the future. Alternative IC, however, could be developed with either the IA or IB Alternatives for the Puuhale to Libby subsection.

Capacity analyses of Alternative I options show increases in intersection capacities, primarily due to increased "green" time for Makai Boulevard traffic. Capacities, however, are still exceeded by design year peak hour traffic demands, and may

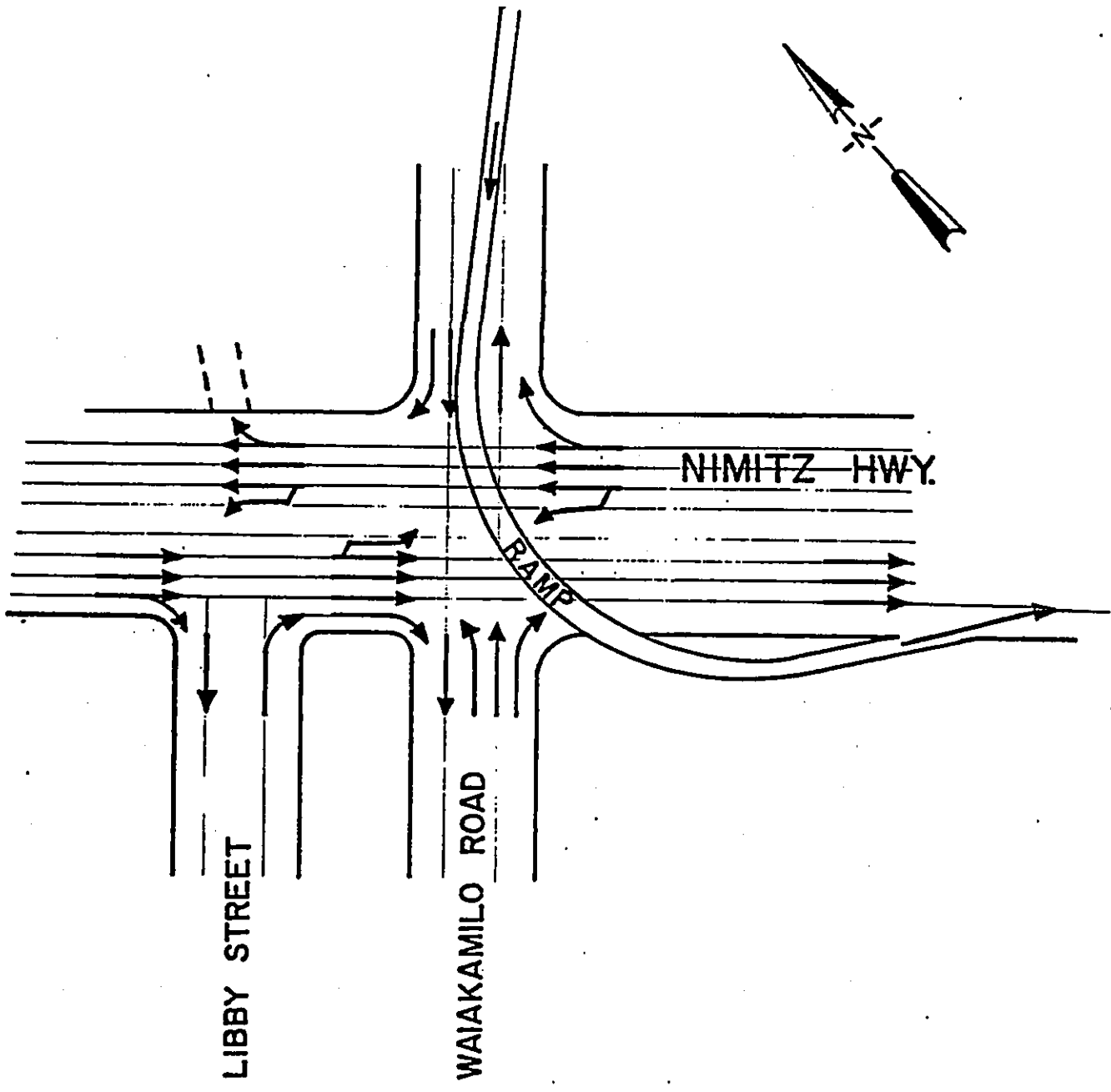


FIGURE 7  
ALTERNATIVE IC

MAKAI  
BOULEVARD  
CONCEPT

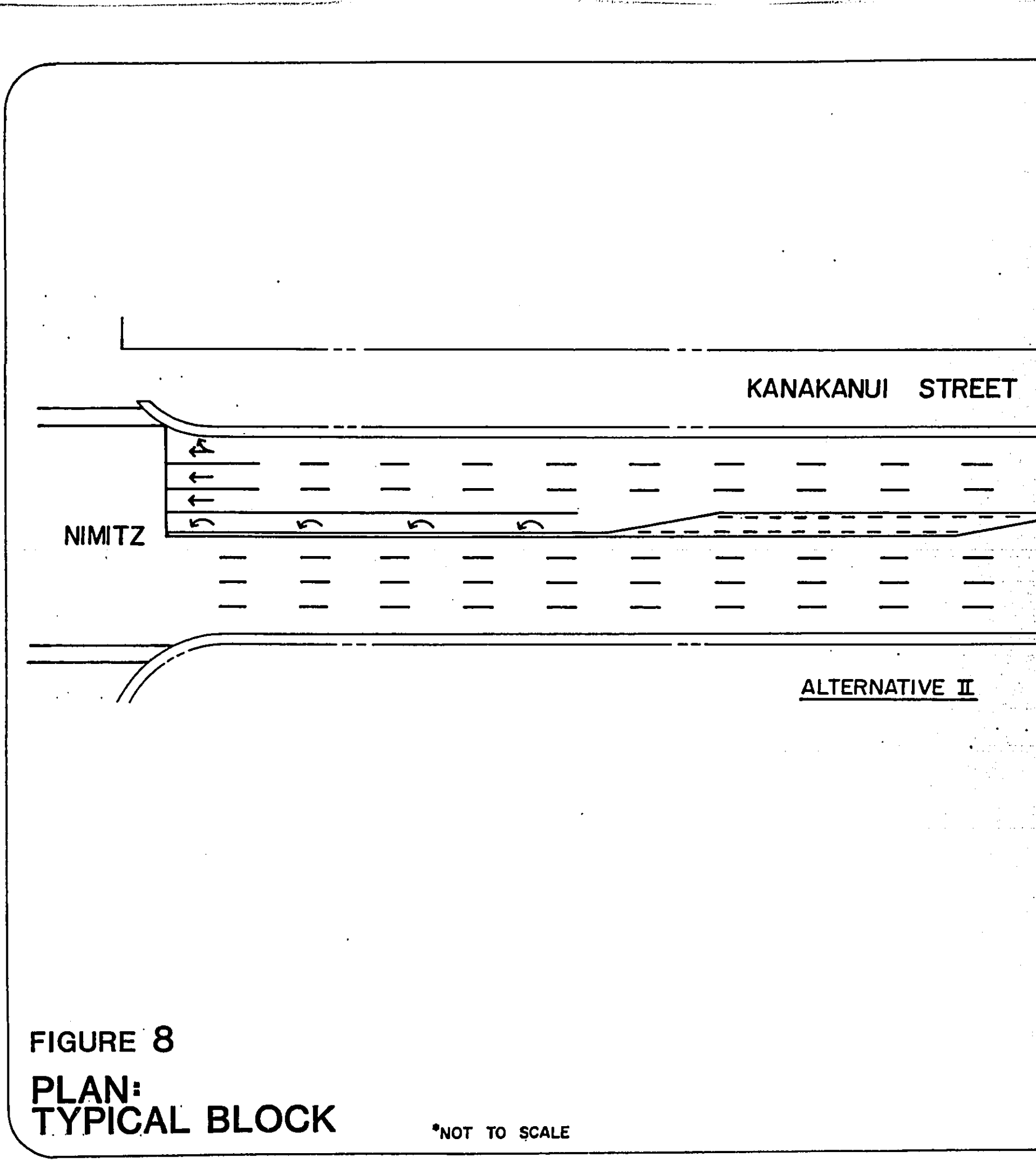
result in traffic conditions associated with level of service F. Alternative IB generally has higher capacities than Alternative IA in the Puuhale Road to Libby Street subsection, while Waiakamilo Road capacities are greater with Alternative IA than with Alternative IC.

3. Alternative II. Alternative II adds one lane for through traffic in the eastbound direction. The minor paving, restriping and traffic signal system improvements in Alternative IA are also part of this alternative and all traffic movements presently allowed will be permitted. In Alternative II, the additional eastbound lane is squeezed into the existing right-of-way by relocating the outer curbs and eliminating the planted medial strip. If it is decided to continue the planted medial strip, the additional right-of-way could be acquired from Kananui Street; however, this will decrease the available parking for businesses in the area. Figures 3 and 8 present typical sections and a typical block in plan, respectively.

At Sand Island Access Road, the westbound lanes are realigned to utilize the right shoulder and to provide for the left turn lane to Sand Island. The fourth eastbound lane, which now drops off as an exclusive right turn to Sand Island Access Road, would be continued across the intersection; the existing near-side bus stop would be relocated to the farside of the intersection.

The relocation of curbs, shifting of lanes, and the elimination of the median begins west of Puuhale Road and continues to Libby Street. All of the intersection improvements proposed for Alternative IA for Puuhale Road, Mokauea Street, Kalihi Street and Libby Street are included in Alternative II.

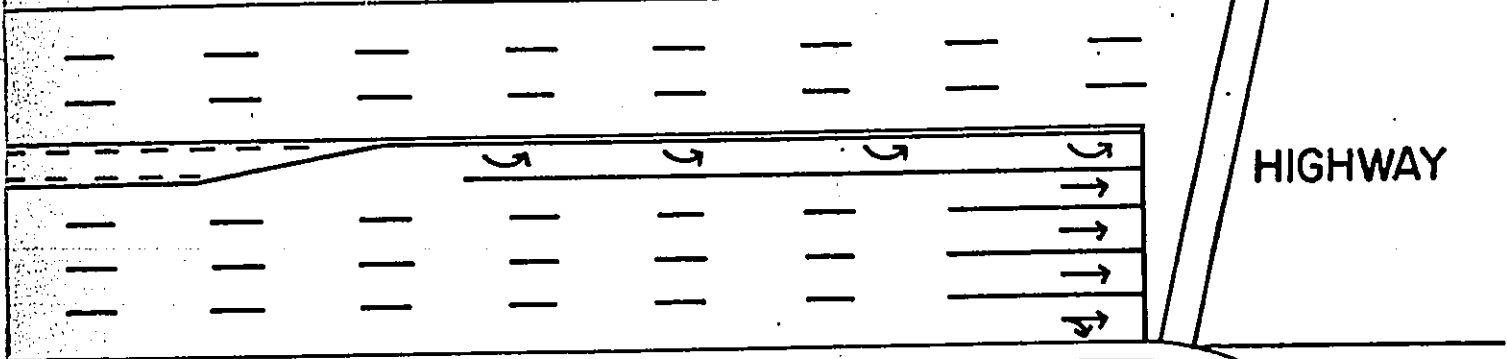
As in Alternative IA, the through lanes from Libby Street to Kapalama Canal are relocated in the south direction to accommodate an auxiliary westbound right turn lane and an additional



**FIGURE 8**  
**PLAN:**  
**TYPICAL BLOCK**

\*NOT TO SCALE

NUI STREET



HIGHWAY

ALTERNATIVE II

**MAKAI  
BOULEVARD  
CONCEPT**

inbound left turn lane at Waiakamilo Road. The fourth eastbound lane continues past Libby Street and Waiakamilo Road, and ends near Kapalama Canal. All other intersection improvements at Waiakamilo Road are the same as for Alternative IA.

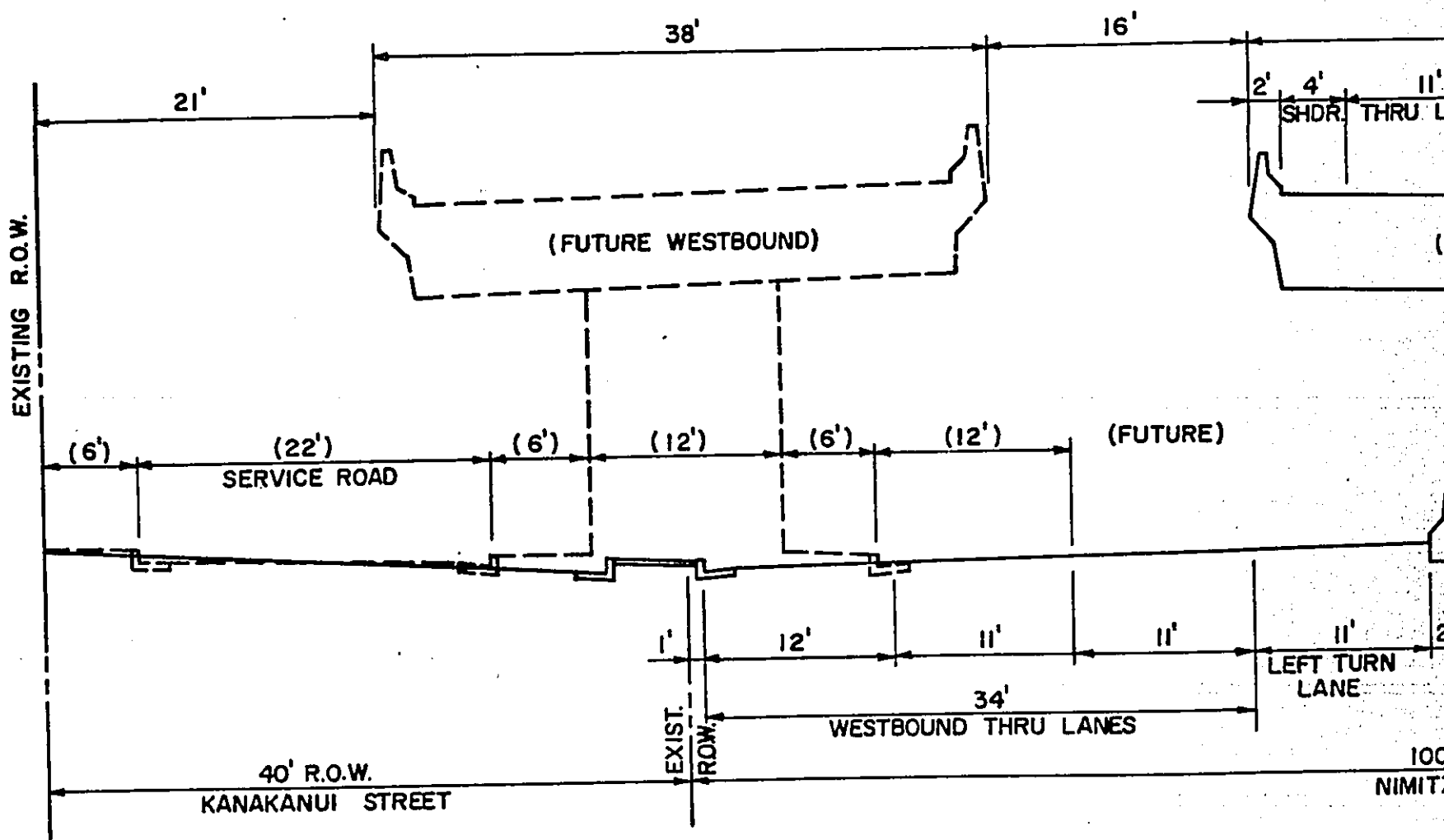
Makai Boulevard capacities are increased sufficiently so that peak hour demand volumes are exceeded at all intersections except Waiakamilo Road. Levels of service E at several locations have been determined, indicating that this alternative would not be adequate. At Waiakamilo, demand volumes exceed capacities (Level of Service F).

Alternative II as described above minimizes right-of-way impacts, with no new right-of-way required along the corridor between Puuhale Road and Libby Street. Elimination of the medial strip would provide the space for the added lane. Without the median, however, sign bridges or similar structures would be needed on both sides of each signalized intersection to support the signal heads above Nimitz Highway.

A five-foot strip taken from the Kananui Street right-of-way would provide sufficient width for a five-foot median and would eliminate the requirement for large signal structures. Signal posts located on this median would be able to provide mounting locations for the traffic signals.

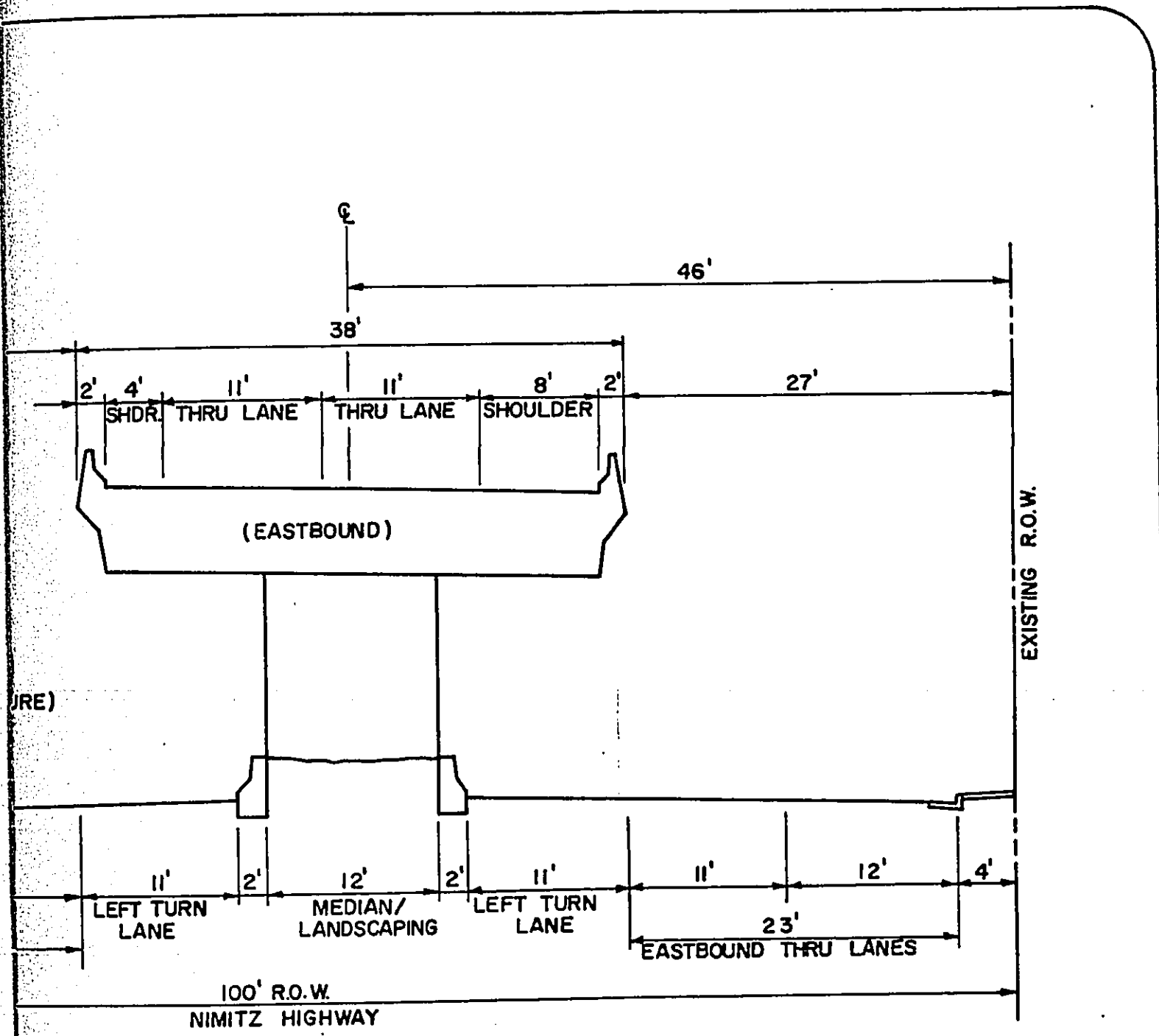
4. Alternative III. Alternative III is a two-lane viaduct for eastbound traffic only, from Middle Street to Kapalama Canal (Figure 9). All westbound traffic would be served at-grade, in three through lanes. Two other lanes at-grade would serve local traffic in the east direction. As in the other alternatives, minor intersection improvements will also be implemented. Traffic movements at-grade would be similar to the existing condition. On the proposed viaduct, shoulders would be provided on the right side for disabled vehicles. Typical structure width would be 36 feet.





**FIGURE 9**  
**ALTERNATIVE III:**  
**TYPICAL SECTION**  
 (PUUHALE ROAD TO LIBBY STREET)

\*NOT TO SCALE



**MAKAI  
BOULEVARD  
CONCEPT**

NOT TO SCALE

The structure would generally be supported on a single row of columns. At ground level, three westbound lanes and two eastbound lanes are divided by a wide median (Figure 10). Left turn lanes and the viaduct columns are located in the median. Space for bikeways and landscaping could also be provided.

The ground level streets would accommodate all presently allowed moves. Improvements to the cross streets and intersections would be similar to Alternative IA the preferred proposal. All lanes would be relocated for the most efficient use of the existing right-of-way; new right-of-way requirements would be the same as in Alternative IA.

In the Iwilei Section, the merging of the viaduct and ground level facilities would be accomplished near the Old Hart Street crossing (Figure 1). For this alternative, the crossing movement is eliminated; only right turns in and out would be allowed.

Traffic analyses of design year peak hour traffic demands indicate that level of service D could be attained on the viaduct and at-grade facility between Sand Island Access Road and Libby Street, in the eastbound direction. In the westbound direction, the traffic demands result in level of service E; favorable signal progression for westbound traffic could improve this level of service.

5. Alternative IV. Alternative IV is an overhead viaduct from Middle Street to Kapalama Canal, which would separate eastbound and westbound through traffic from the local traffic (Figure 11). Four lanes in each direction would be provided, two at ground level and two on the viaduct. The viaduct would begin west of, and rise over, the Sand Island Access Road intersection and continue above the center of the

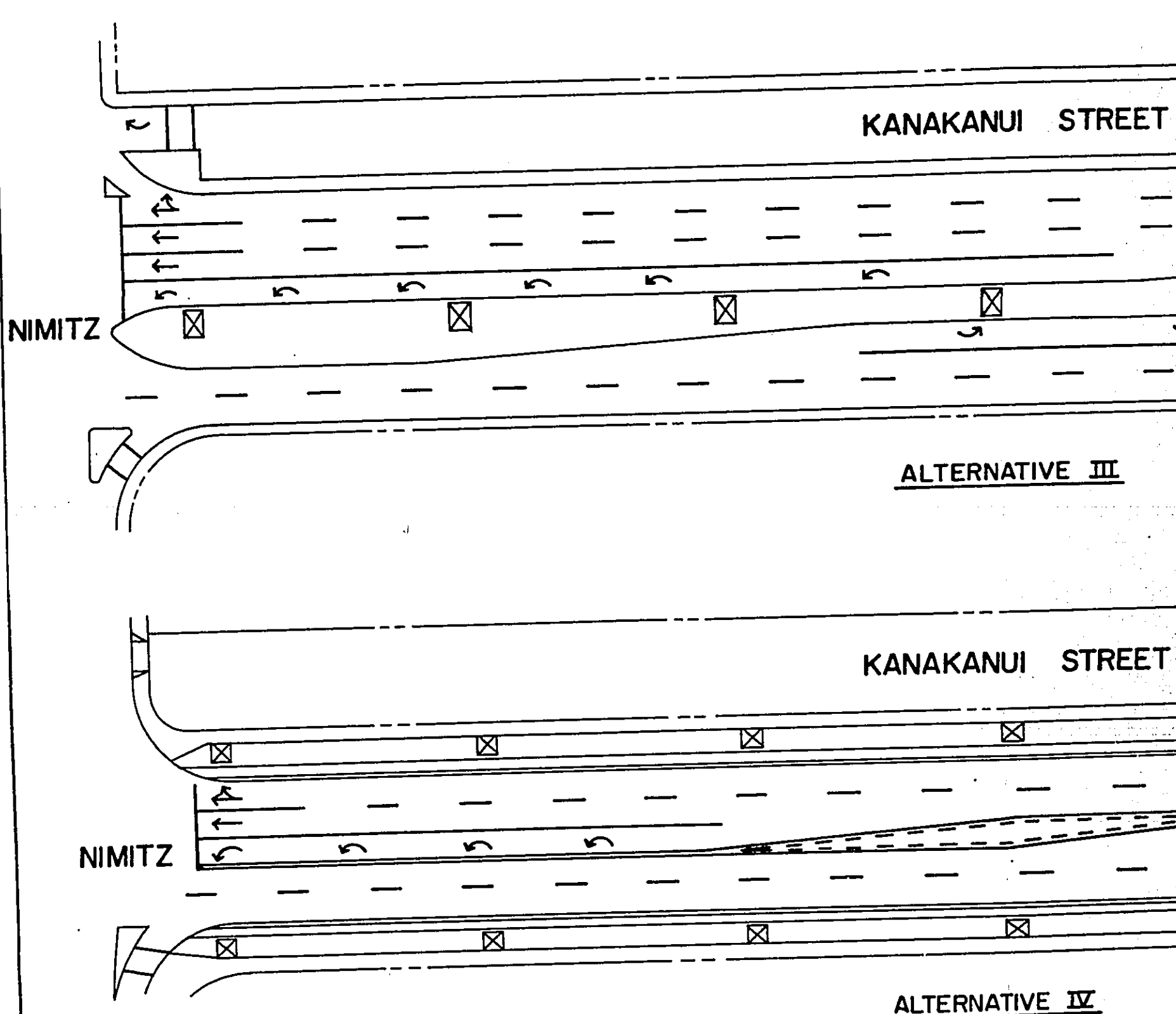
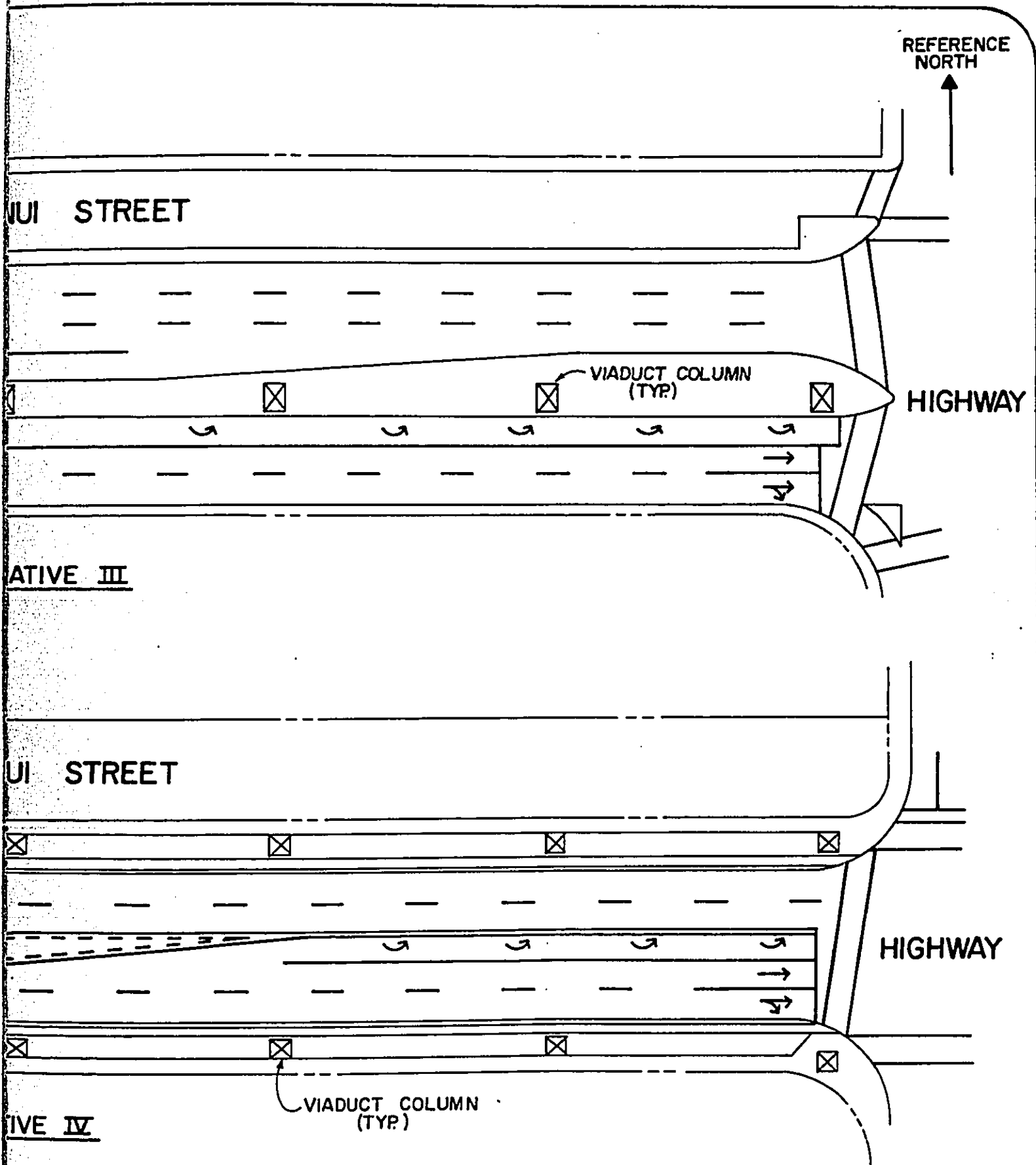


FIGURE 10

PLAN:  
TYPICAL BLOCK  
(AT GROUND LEVEL)

\*NOT TO SCALE



**MAKAI  
BOULEVARD  
CONCEPT**

\*NOT TO SCALE

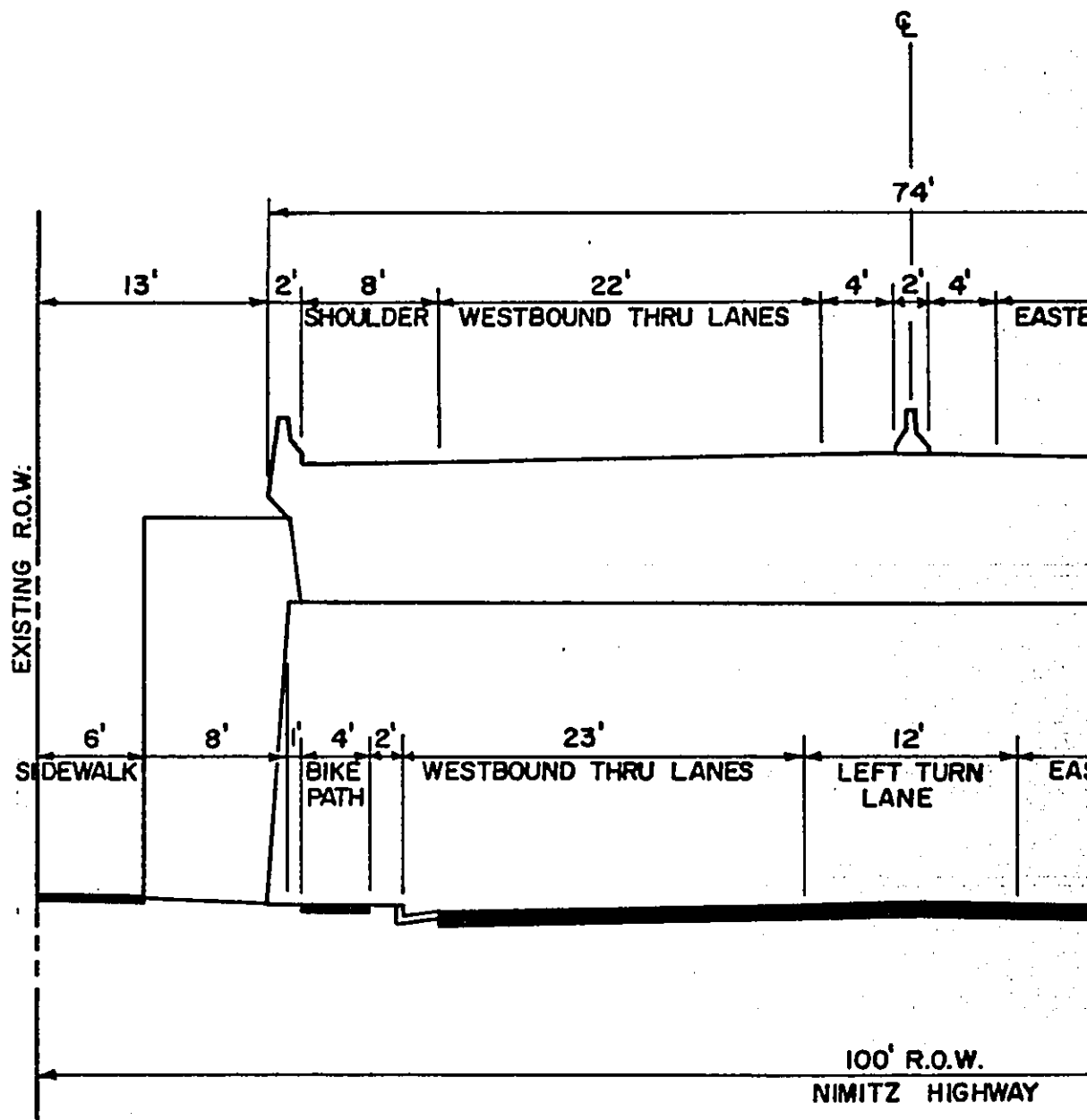
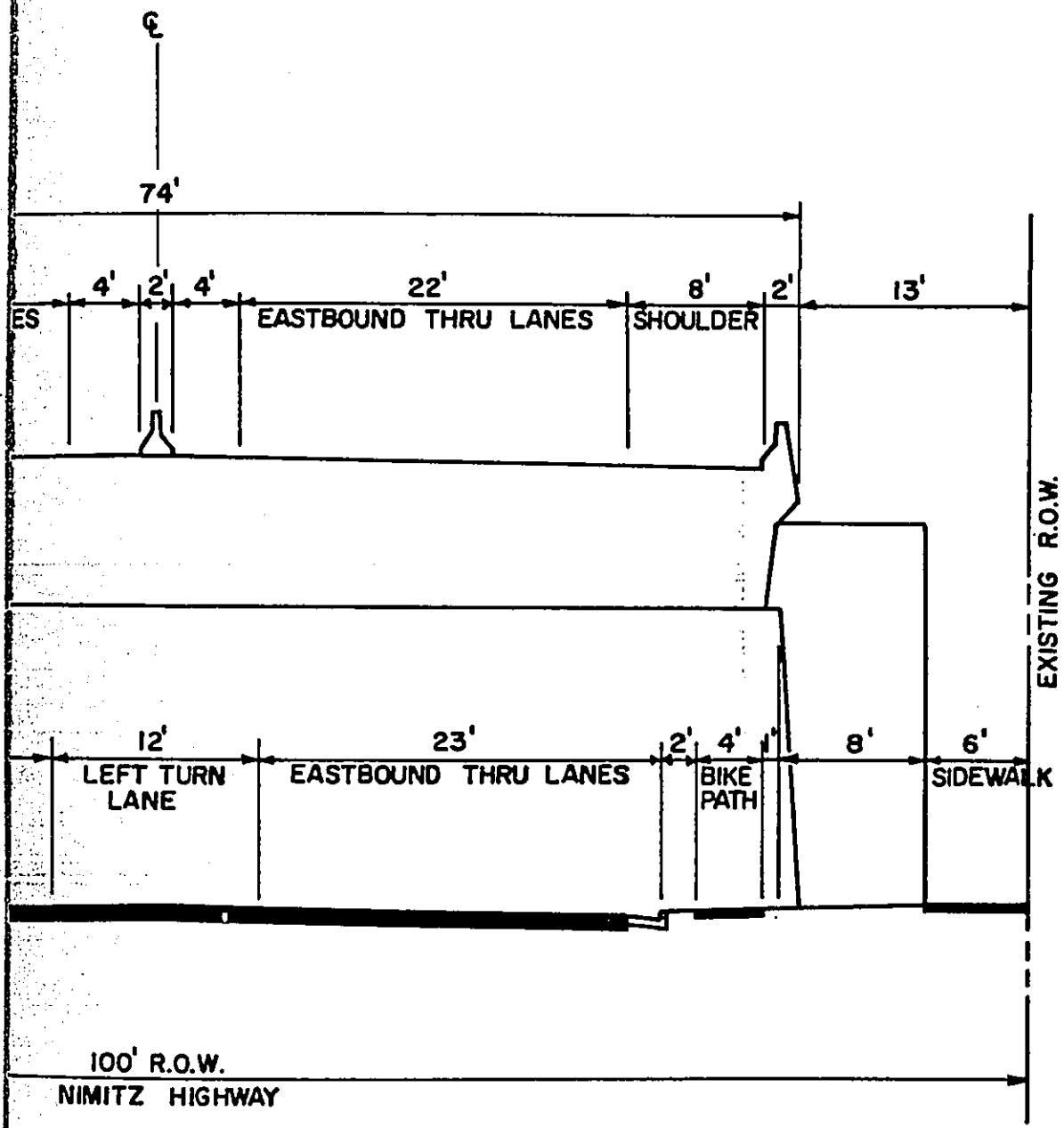


FIGURE 11

**ALTERNATIVE IV:  
TYPICAL SECTION**  
(PUUHALE ROAD TO LIBBY STREET)

\*NOT TO SCALE



**MAKAI  
BOULEVARD  
CONCEPT**

\*NOT TO SCALE

existing Nimitz Highway corridor past the Waiakamilo Road intersection. The viaduct lanes would return to ground level at the Old Hart Street intersection after crossing Kapalama Canal. A median barrier in the viaduct would separate the eastbound from westbound traffic. Typical structure width would be 70 feet.

The viaduct structure would generally be supported on symmetrical frames with columns located slightly outside of the parapet of the viaduct. This spacing would allow a five-lane local street and bikepaths to fit under the viaduct. Sidewalks would be located between the columns and the edge of the right-of-way and the lateral space between consecutive columns would be landscaped.

The five-lane local street would typically be striped for two lanes in each direction for straight-ahead and right-turn movements and the fifth lane would accommodate left turns (Figure 10). All existing movements would be retained.

Improvements to the cross streets, i.e. Sand Island Access and Puuhale Roads, Mokauea, Kalihi, and Libby Streets, and Waiakamilo Road, would be similar to Alternative IA. A separate right turn auxiliary lane for westbound traffic approaching Puuhale Road would be provided to service the heavy morning turn volume at this location.

In the Iwilei Section, existing traffic movements at the Old Hart Street intersection would be retained. The westbound traffic in the center lane of the approach would have an option, west of Old Hart Street, to stay at-grade or to use the viaduct. The merging of eastbound traffic from the viaduct and street levels requires that four lanes be maintained through the Old Hart Street intersection.



Right-of-way requirements for Alternative IV are the same as that for Alternative IA. In 1994, traffic with Alternative IV will be accommodated at level of service D on the viaduct and for all at-grade intersections with the exception of the crossing at Waiakamilo Road. At Waiakamilo Road, the 1994 A.M. peak hour traffic demand will exceed intersection capacity.

D. Iwilei Section

In the Iwilei Section, the existing roadway provides sufficient capacity for the projected design year traffic, however, several minor actions have been identified which would improve safety and increase capacity. These actions include turnout areas at bus stops and the restriction of traffic movements at Old Hart Street during the peak period so that Nimitz Highway traffic would have a constant green light at this intersection. Removal of the bike lanes would increase capacity, and bikepaths could be placed in the landscaped areas. Increased capacity in the Iwilei Section would not be required with the Kalihi Section Alternative I combinations and Alternative II; with Alternative III, the improvements to increase the Iwilei Section capacity would be needed and with Alternative IV, a fourth eastbound lane would be provided.

E. Right-of-Way Acquisition and Costs

The project is located within an existing roadway corridor. However, the various alternatives may necessitate the purchase of additional right-of-way. Table 3 tabulates, by Tax Map Key (TMK), the anticipated land acquisition required for each alternative and ownership of these properties.

The estimated right-of-way costs for each alternative, are tabulated in Table 4. Included in the table are the TMK, the area to be taken, and the approximate right-of-way costs.

TABLE 3  
 ADDITIONAL REQUIRED RIGHT-OF-WAY\*

Alternative I-A, III, IV

<u>TMK</u>	<u>AREA (approximate square feet)</u>	<u>Current Ownership</u>
<u>Puuhale Road</u>		
1-2-13:16	1,100	Private
1-2-13:14	5,940	Private
1-2-13:13	1,050	Private
1-2-13: 3	1,000	Private
<u>Waiakamilo Road</u>		
1-5-32:1	4,400	U.S. Army
1-5-32:4	15,800	U.S. Army (leased to State of Hawaii)
1-5-32:5	20,200	U.S. Army (leased to State of Hawaii)
TOTAL	<u>49,490</u>	

TABLE 3  
(continued)

Alternative I-B

Current Ownership

Area (approximate square feet)

TMK

Puuhale Road

1-2-13:16  
1-2-13:14  
1-2-13:13  
1-2-13:3

1,100  
5,940  
1,050  
1,000

Private  
Private  
Private  
Private

TOTAL

9,090

Alternative I-C

Current Ownership

Area (approximate square feet)

TMK

Waiakamilo Road

1-5-32:1  
1-5-32:4

1,600  
34,000

U.S. Army  
U.S. Army

1-5-32:5

9,600

State of Hawaii)  
U.S. Army  
(leased to  
State of Hawaii)

TOTAL

45,200

TABLE 3  
(continued)

ALTERNATIVE II

<u>TMK</u>	<u>Area (approximate square feet)</u>	<u>Current Ownership</u>
<u>Puuhale Road</u>		
1-2-13:16	1,100	Private
1-2-13:14	5,940	Private
1-2-13:13	1,050	Private
1-2-13:3	1,100	Private
<u>Waiakamilo Road</u>		
1-5-32:1	4,000	U.S. Army
1-5-32:4	15,500	U.S. Army (leased to State of Hawaii)
1-5-32:5	12,400	U.S. Army (leased to State of Hawaii)
TOTAL	<u>40,990</u>	

\* Preliminary and Subject to Change

TABLE 4  
RIGHT-OF-WAY COSTS

<u>Alternative I-A</u>	
<u>TMK</u>	<u>Right of Way Costs (in dollars)</u>
1-2-13:16	44,000
1-2-13:14	237,600
1-2-13:13	42,000
1-2-13:3	40,000
1-5-32:1	176,000
1-5-32:4	632,000
1-5-32:5	808,000
Kanakanui Street	2,000
<b>TOTAL</b>	<b>1,981,600</b>

<u>ALTERNATIVE I-B</u>	
<u>TMK</u>	<u>Right-of-Way Costs (in dollars)</u>
1-2-13:16	44,000
1-2-13:14	237,600
1-2-13:13	42,000
1-2-13:3	40,000
Kanakanui Street	2,000
<b>TOTAL</b>	<b>365,600</b>

TABLE 4  
(continued)

Alternative I-C

<u>TMK</u>	<u>Area (in square feet)</u>	<u>Right-of-Way Costs (in dollars)</u>
1-5-32:1	1,600	64,000
1-5-32:4	34,000	1,360,000
1-5-32:5	9,600	384,000
<b>TOTAL</b>	<u>45,200</u>	<u>1,808,000</u>

Alternative II

<u>TMK</u>	<u>Area (in square feet)</u>	<u>Right-of-Way Costs (in dollars)</u>
1-2-13:16	1,100	44,000
1-2-13:14	5,940	237,600
1-2-13:13	1,050	42,000
1-2-13:3	1,000	40,000
1-5-32:1	4,000	160,000
1-5-32:4	15,500	620,000
1-5-32:5	12,400	496,000
Kanakanui Street		2,000
<b>TOTAL</b>	<u>40,990</u>	<u>1,641,600</u>

TABLE 4  
(continued)

Alternative III

<u>TMK</u>	<u>Area (in square feet)</u>	<u>Right-of-Way Costs (in dollars)</u>
1-2-13:16	1,100	44,000
1-2-13:14	5,940	237,600
1-2-13:13	1,050	42,000
1-2-13:3	1,000	40,000
1-5-32:1	4,400	176,000
1-5-32:4	15,800	632,000
1-5-32:5	20,200	808,000
Kanakanui Street		2,000
	<u>49,490</u>	<u>1,981,600</u>
TOTAL		

Alternative IV

<u>TMK</u>	<u>Area (in square feet)</u>	<u>Right-of-Way Costs (in dollars)</u>
1-2-13:16	1,100	44,000
1-2-13:14	5,940	237,600
1-2-13:13	1,050	42,000
1-2-13:3	1,000	40,000
1-5-32:1	4,400	176,000
1-5-32:4	15,800	632,000
1-5-32:5	20,200	808,000
Kanakanui Street		2,000
	<u>49,490</u>	<u>1,981,600</u>
TOTAL		

The cost to acquire Kananui Street has been considered a nominal expense, with \$2,000 allowed for condemnation expenses. These costs are based on the State Department of Transportation's 1981 costs for vacant (unimproved) urban land and on their research of Kananui Street ownership.

F. Evaluation of Alternatives

The purpose of the project is to increase the capacity of the Makai Boulevard to accommodate future traffic volumes for the year 2002. Of the alternatives discussed, only Alternative IV would be able to serve predicted increases in both directions. However, selection of the recommended alternative was based on several criteria. Funding considerations and public concerns represented the basis for the criteria, and as expressed early in this project's planning, a need to consider alternatives with lesser capacities to provide a shorter-range solution. These other alternatives, while not fully providing adequate highway capacities to serve predicted year 2002 traffic volumes, would increase capacities and improve existing levels of service.

The five major criteria developed are based on public input received from the recent informational meetings, public hearings, and EIS review. The criteria included:

- 1) Minimize right-of-way take
- 2) Keep the cost down
- 3) Retain the existing traffic movements
- 4) Minimize impacts on Gateway Project
- 5) Increase capacity of Nimitz Highway

A few of the comments received rejected all alternatives presented; however, all comments acknowledged the need to improve the existing Nimitz Highway traffic conditions. Therefore, the Do-Nothing Alternative would not be acceptable to the majority of Nimitz Highway



users. Further, the Do-Nothing Alternative would not serve the expected increases in traffic demand.

As stated previously, only Alternative IV would be able to serve the predicted traffic increases in both directions. Alternatives II and III would have sufficient capacity to handle the inbound traffic volumes, but not the outbound traffic volumes. The Do-Nothing Alternative and the Alternative I combinations would not have sufficient capacity to serve the projected increases in traffic volumes. The capacity and cost for each alternative are listed in Table 5.

Minimizing the right-of-way impacts was deemed important in the early stages of the project; therefore, all alternatives were developed to meet this criterion. Keeping the cost down was identified as the next important criterion. Alternatives III and IV would provide the best levels of traffic service; however, these alternatives also would require large capital expenditures. Alternative I combinations and Alternative II each have lower construction costs with a smaller increase in capacity. The benefit-cost analysis for this project has showed that all alternatives except the Do-Nothing case would be economically feasible. However, when the alternatives are viewed as an investment, then the preferred Alternatives are IA + IB, II, and IA in descending order.

Further, 23 CFR Section 771.129 places time constraints on the validity of the EIS. A Final EIS (FEIS) is considered valid for a period of three to five years. If major steps to advance the project (e.g. authorization for right-of-way acquisition or approval of plans, specifications and estimates) have not occurred within three years, then a written evaluation of the FEIS must be prepared before further approvals may be granted. If there has been significant changes in the proposed action, affected environment, expected impacts, or mitigation measures, then a new or supplemental EIS must be prepared. If no major steps to advance the project have occurred within five years of the FEIS approval date or within the

TABLE 5  
COST ESTIMATES

Alternative	No Build	IA	IA + IB	IA + IC	IA+IB+IC	II*	III	IV
Roadway	0	\$1,050,000	\$1,210,000	\$ 510,000	\$ 760,000	\$1,380,000	\$ 1,700,000	\$ 2,780,000
Structure	0	0	0	3,090,000	3,090,000	0	10,770,000	21,930,000
Landscaping	0	6,000	10,000	6,000	10,000	0	30,000	40,000
Miscellaneous	0	404,000	430,000	674,000	610,000	450,000	1,720,000	3,120,000
Construction Cost	0	\$1,460,000	\$1,650,000	\$4,280,000	\$4,470,000	\$1,830,000	\$14,220,000	\$27,870,000
Right-of-Way	0	1,981,600	1,981,600	2,173,600	2,173,600	1,641,600	1,981,600	1,981,600
TOTAL COST	0	\$3,441,600	\$3,631,600	\$6,453,600	\$6,643,600	\$3,471,600	\$16,201,600	\$29,851,600

CAPACITIES (Average)

Inbound (AM)	2360	2770	2990	2670	2900	3350	4270	4270
Outbound (PM)	2620	2840	2650	2860	2680	2840	2840	4380

TRAFFIC VOLUMES  
(VPH - vehicles per hour)

	Inbound (AM)	Outbound (PM)
Ewa of Waiakamilo Road		
1982 Count	2690 vph	2100 vph
2002 Projection	3540 vph	3040 vph
Increase	+32%	+45%
Average on Section		
2002 Projection	3260 vph	2820 vph

\*Without median

time frame identified in the FEIS, then the written evaluation required must be forwarded for review and action by the same offices that approved the original FEIS.

In view of the present time schedules and budget constraints, Alternatives III and IV cannot be considered economically feasible at this time. Alternative IC, which would provide a ramp at Waiakamilo Road, would also be economically unfeasible; the incremental improvement of Alternatives IA + IC and IA + IB + IC could not be justified by the added construction expense.

The third criterion covered such factors as the impact on existing traffic movements and loss of parking. The retainment of existing vehicular movements and uses was highly valued among residents and businesses of the area. Loss of parking would only serve to aggravate the existing situation where double parking is a frequent occurrence. Although cross streets would be improved to accommodate the diverted traffic, the Kalihi community has voiced opposition to plans which banned existing movements and required circuitous routes to desired destinations. However, the addition of a left turn from Nimitz Highway westbound at Libby Street southbound received favorable comments. These concerns suggested that Alternatives IA + IB and IA + IB + IC with the rerouting plan would be undesirable. The Do-Nothing Alternative and Alternatives IA, IA + IC, II, III, and IV would allow all the traffic movements permitted under the existing conditions.

The fourth criterion, minimizing the impacts on the Beautification Gateway Project, also included environmental impacts such as the impact on the air, water, and noise levels. Various organizations have voiced concern over the loss of the recently installed plantings. The removal of landscaping would negate the private business-government cooperative efforts in the area and degrade the aesthetic quality recently achieved. The community's value on the landscaping conflicts with most of the alternatives. The Do-Nothing Alternative

would retain the existing landscaped median. Alternative IA would uproot some of the landscape, but would replace it during construction. All other plans would have an adverse impact on the median.

Alternative IA is the most economically feasible and socially acceptable plan at this time. It would have the lowest construction cost and a minimal amount of right-of-way take. It would retain the existing traffic movements and landscaping along Nimitz Highway. Also, it could be implemented more quickly (less design and construction time) and would have the least impact on traffic during construction. Improvements made under Alternatives IA would support any long-range solution.

Alternative IA would not preclude the implementation of a long-range solution, whether it be a viaduct as described by Alternative IV or other major improvements, at a later date. Additional studies, including completion by the Oahu Metropolitan Planning Organization of the update of the Oahu Long-Range Transportation Plan (Hali 2000), truck route studies, a possible Kalihi-Palama area-wide transportation study, and other studies could provide additional data to support a long-range solution. Finally, Alternative IA would provide additional capacity to serve present and short-term, interim, traffic demands without predetermining a long-range commitment. Alternative IA, therefore, is the recommended alternative until additional resources are available.

No improvements for the Iwilei Section are recommended at this time. The existing Iwilei Section has adequate capacity to accommodate the increase in traffic volumes that could be served with the Alternative IA proposal for the Kalihi Section.

G. Construction Timetable

The tentative dates for design are in late 1987, rights-of-way acquisition in late 1988, and construction to commence after 1991.

III  
AFFECTED  
ENVIRONMENT

MAKAI  
BOULEVARD  
CONCEPT

MAKAI  
BOULEVARD  
CONCEPT

MAKAI  
BOULEVARD  
CONCEPT

MAKAI  
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MAKAI  
BOULEVARD  
CONCEPT

### III. AFFECTED ENVIRONMENT

#### A. Natural Environment

##### 1. Topography<sup>5</sup>

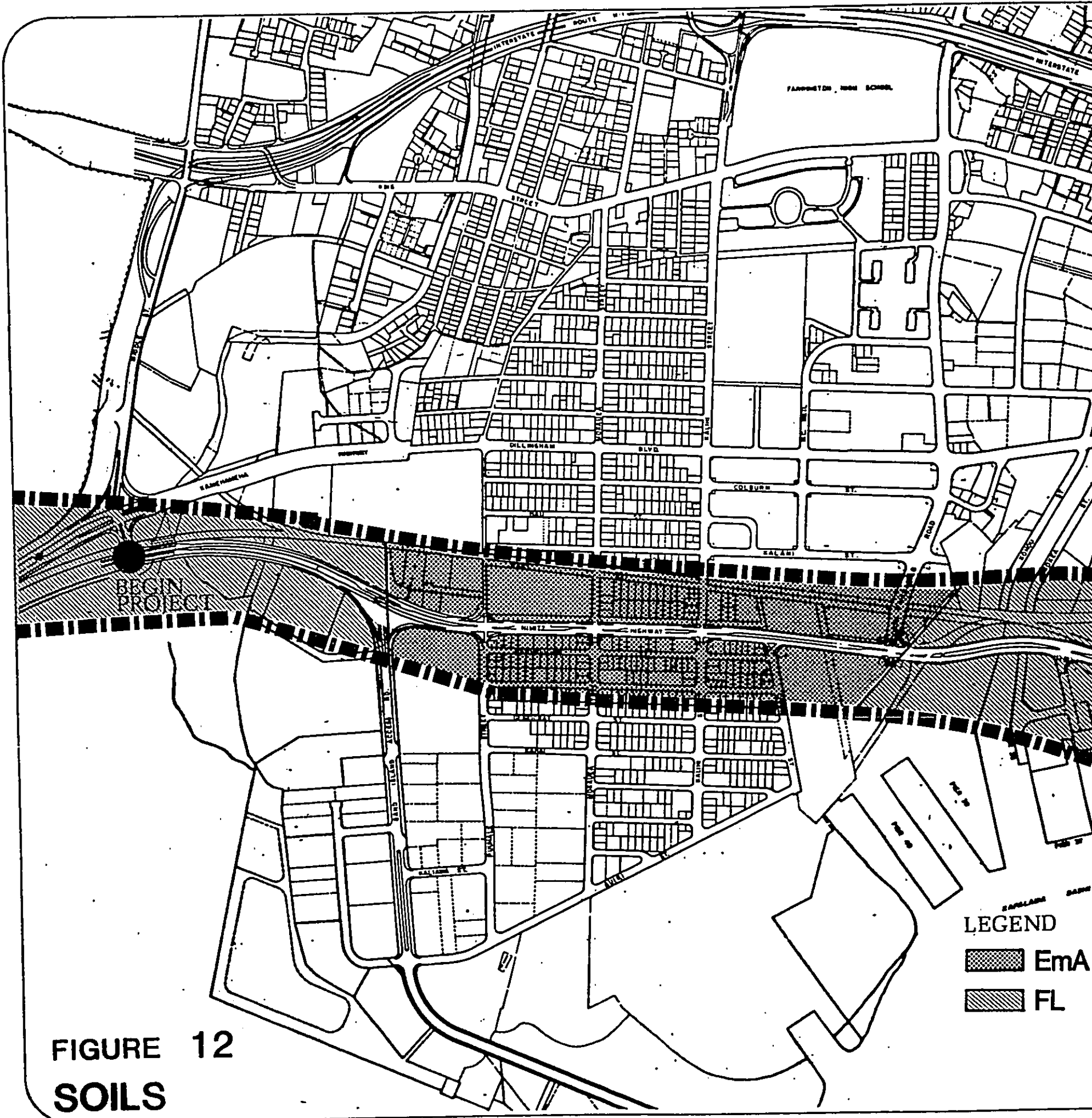
Nimitz Highway is located within a coastal plain along Oahu's south-central coast. The plain ranges in elevation from 0 to 10 feet above mean sea level.

##### 2. Geology<sup>6</sup>

The coastal plain sub-strata is mostly composed of caprock, which is typical of the south-central shore of Oahu. Caprock is comprised of weathered lavas, ashes, cinders, and tuffs of the Honolulu Volcanic Series, which form a thick layer of alluvium. In its upper layers, the caprock formation is permeable. However, at its interface with underlying basalts, it is impermeable. The near surface groundwater is not suitable for domestic use due to its high salinity.

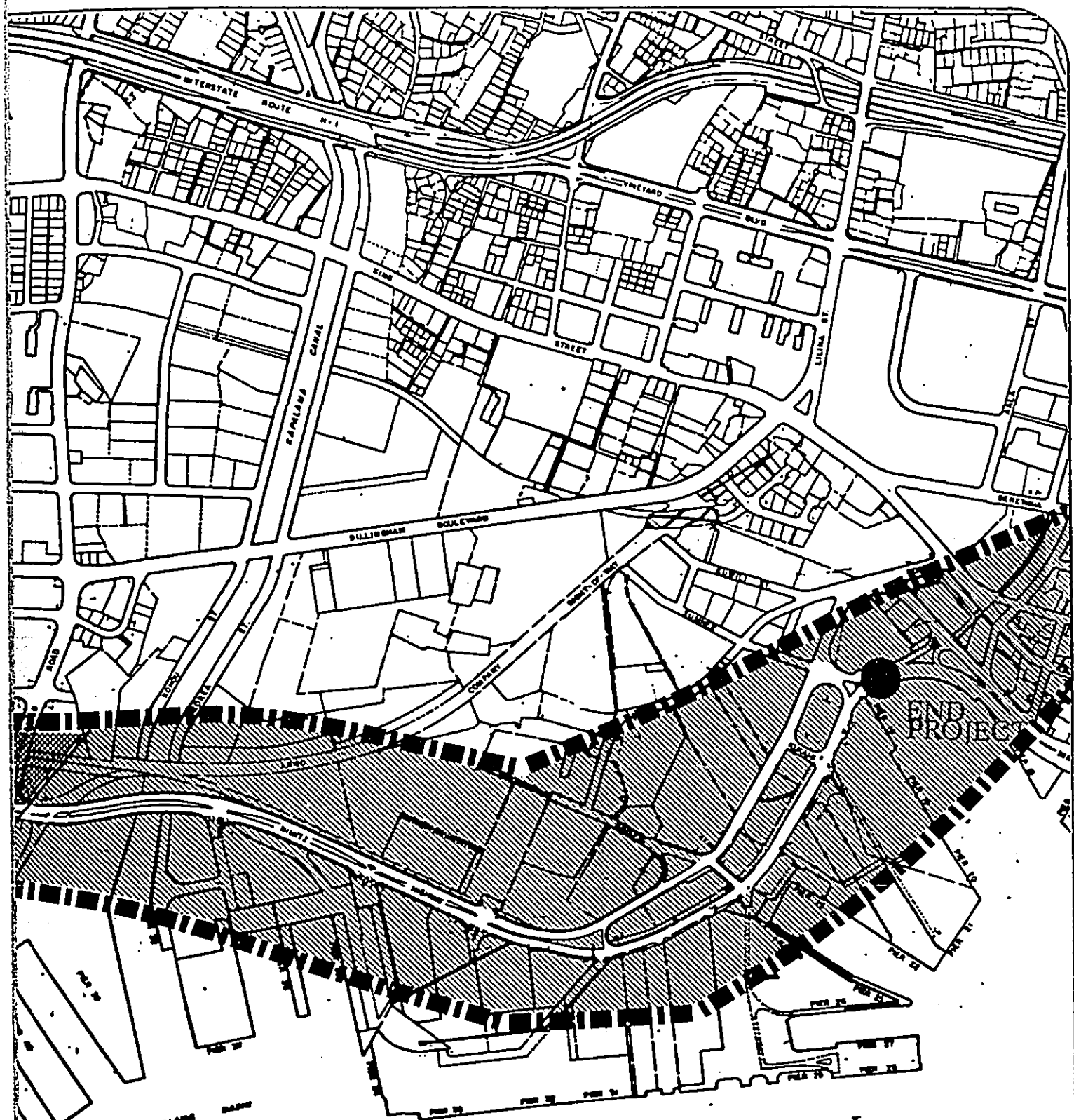
##### 3. Soils<sup>7</sup>

There are two soil types present in the area of the project. The locations of these soil types are shown in Figure 12. Nimitz Highway traverses through soil classified as fill material (FL) and Ewa Silty Clay Loam (EmA). Fill material consists mainly of silty sand and coral gravel dredged from Honolulu Harbor. It is highly unconsolidated with characteristics of high porosity and permeability. The second soil type, Ewa Silty Clay Loam, is moderately shallow, with a 20- to 50-inch depth to the underlying coral limestone. Runoff is very slow, permeability is moderate, and the erosion potential is only slight. The topsoil is approximately 18 inches thick, consisting of a dark reddish-brown, silty-clay loam, with a 40-inch thick subsoil.





**FIGURE 12**  
**SOILS**

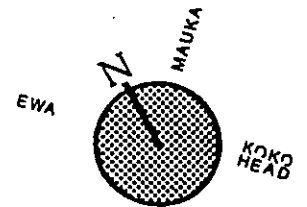
**LEGEND**  
 [Cross-hatched box] EmA  
 [Diagonal hatched box] FL



LEGEND

 EmA

 FL



# MAKAI BOULEVARD CONCEPT



4. Climatology

Rainfall is relatively low, averaging between 20 to 25 inches a year.

The prevailing wind throughout the year is the northeasterly trade wind. The monthly mean velocity of the wind varies between 10 to 15 miles per hour.

Daily maximum temperatures range from the high-70s F. in the winter to the mid-80s F. in the summer. The daily minimum temperatures run from the mid-60s F. in the winter to the low-70s F. during the summer.

5. Hydrology

Due to the incidence of low rainfall, the flat terrain, and the permeable soils, surface runoff is negligible. There exists three streams that discharge into the coastal waters<sup>8</sup>, Kapalama Basin, Nuuanu Stream into the main Honolulu Harbor Basin, and Kalihi Stream into the Keehi Lagoon.

Honolulu Harbor is the receiving body for a number of pollution sources. These include thermal water from the Hawaiian Electrical Power Plant, surface water runoff, stream discharges, industrial and urban discharges. The State Department of Health has designated the waters immediately adjacent to Honolulu Harbor, Class B. The allowable uses in Class B waters are small boat harbors, commercial and industrial shipping, bait fishing, compatible recreation, the support and propagation of aquatic life, and aesthetic enjoyment.

The waters in the vicinity of Sand Island are also relatively poor in quality. The flushing and transport characteristics of Honolulu Harbor and the deposition of rubble along the shore

are major factors contributing to this poor water quality. Although these conditions exist, it should be noted that the waters are still utilized by fishermen, swimming and surfing enthusiasts.

These waters are designated Class A and its protected uses include recreational aesthetic enjoyment, and the support and propagation of aquatic life. Data from the State Department of Health indicates that the coastal waters sampling stations located around Sand Island have, in the last three years, exceeded the State's water quality standards for total coliform, fecal coliform and nitrogen.

6. Vegetation

Due to previous clearing activities on the Nimitz Highway right-of-way, no endemic or endangered species of flora exists. However, some flora species may be found on the median and adjacent sidewalks. Median plantings include:

Ice plant

Cape Honeysuckle

Bougainvillea

var. Mary Palmer

var. Miss Manila

var. Rainbow

var. Crimson Lake

Coconut Palms

Makai plantings include:

Red Hibiscus

Turf, Bermuda Grass

Banyan

7. Fish and Wildlife

Table 6 provides an inventory of birds sighted in the general area, near Sand Island and Keehi Lagoon. Table 7 presents a list of mammals identified near the Honolulu Harbor area. Of all the fauna species sited, two birds, the Hawaiian stilt (Himantopus himantopus knudseni) and the Hawaiian owl (Asio flammeus sandwichensis) are endemic (native) and endangered species. However, these birds were sighted at substantial distances away from the project site and should not be affected by the proposed project. The remaining birds and mammals found near Nimitz Highway are species common to urbanized areas.

The Fish & Wildlife Service, U.S. Department of the Interior, in their report entitled, "Stream Channel Modification in Hawaii. Part A: Statewide Inventory of Streams; Habitat Factors and Associated Biota," survey the Kapalama, Nuuanu and Kalihi Streams.<sup>9</sup> Their survey indicated that the following native Pisces species, Awaous genivittatus, Eleotris sandwichensis, Awaous Stamineus, Kuhlia sandvicensis; exotic Pisces species, Clarias fuscus, Tilapia mossambica, Misgurnus anguillicaudatus, Xiphophorus helleri, Poecilia reticulata, Poecilia mexicana, Poecilia vittata, Poecilia latipinna, and Gambusia affinis; native Crustacea species, Atya bisulcata, Macrobrachium grandimanus; and exotic Crustacea species, Procambarus clarkii and Macrobrachium lar were observed.

The northern most basin of Keehi Lagoon, at the mouth of Kalihi and Moanalua Streams, supports a significant stock of nehu. This stock is a bait resource important to the aku fishery based in Honolulu.

TABLE 6

BIRDS RECORDED AT AREAS ADJACENT TO  
KEEHI LAGOON AND SAND ISLAND <sup>5</sup>

## I. NATIVE (RESIDENT) BIRDS

<u>English Name</u>	<u>Hawaiian Name</u>	<u>Scientific Name</u>
1. Hawaiian stilt*	aeo	<u>Himantopus himantopus knudseni</u>
2. Black-crowned night heron	aukuu	<u>Nycticorax nycticorax hoactli</u>
3. Brown booby	a	<u>Sula leucogaster</u>
4. Hawaiian owl* (Oahu only)	pueo	<u>Asio flammeus sandwichensis</u>
5. Common noddy	noio koha	<u>Anous stolidus</u>
6. Great frigatebird	iwa	<u>Fregata minor palmerstoni</u>
7. Fairy tern	mano o ku	<u>Gygis alba</u>

\* Endangered Species according to Endangered Species Act, 16 USC 1531, et seq., 50 CFR 17.11 and 17.12; July, 1983.

## II. MIGRATORY BIRDS

1. Pacific golden plover	kolea	<u>Pluvialis dominica fulva</u>
2. Black-bellied plover		<u>Squatarola squatarola</u>
3. Ruddy turnstone	akekeke	<u>Arenaria interpres</u>
4. Wandering tattler	ulili	<u>Heteroscelus incanum</u>
5. Sanderling	hunakai	<u>Crocethia alba</u>
6. Glaucous gull	'opa'ipa'i	<u>Larus hyerboreus</u>
7. Osprey	'okepela	<u>Pandion haliaetus</u>
8. Dunlin		<u>Erolia alpina</u>
9. Herring gull	'opa'ipa'i	<u>Larus argentatus</u>
10. Franklin's gull	'opa'ipa'i	<u>Larus pipixcan</u>
11. Hawk (unidentified)		<u>Catoptrophorus semipalmatus</u>
12. Willet		<u>Larus philadelphia</u>
13. Bonaparte's gull	'opa'ipa'i	<u>Branta nigricans</u>
14. Black brant		<u>Sterna hirundo</u>
15. Least tern		<u>Charadrius semipalmatus</u>
16. Semi-palmated plover		<u>Bucephala albeola</u>
17. Bufflehead		<u>Ereunetes mauri</u>
18. Western sandpiper	upupa	<u>Numenius phaeopus</u>
19. Whimbrel		<u>Erolia minutilla</u>
20. Least sandpiper	upupa	<u>Larus delawarensis</u>
21. Ring-billed gull	'opa'ipa'i	<u>Larus occidentalis</u>
22. Western gull	'opa'ipa'i	<u>Larus californicus</u>
23. California gull	'opa'ipa'i	

TABLE 6  
(continued)

III. INTRODUCED (EXOTIC BIRDS)

<u>English Name</u>	<u>Hawaiian Name</u>	<u>Scientific Name</u>
1. Rock dove	manuku	<u>Columba livia</u>
2. Lace-necked dove	manuku	<u>Streptopelia chinensis</u>
3. Barred dove	manuku	<u>Geopelia striata</u>
4. Mockingbird		<u>Mimus polyglottos</u>
5. Common mynah	manu-'ai-pilau	<u>Acridotheres tristis</u>
6. House sparrow	manu-li'ili'i	<u>Passer domesticus</u>
7. Cardinal	manu-'ula'ula	<u>Richmondia cardinalis</u>
8. House finch		<u>Carpodacus mexicanus</u>
9. Brazilian cardinal		<u>Paroaria cristatus</u>
10. Ricebird	manu-'ai-laiki	<u>Lonchura punctulata</u>
11. Cattle egret		<u>Bulbulcus ibis</u>
12. Yellow-headed amazon	manu-aloha	<u>Amazona ochrocephala</u>
13. Red-vented bulbul		<u>Pycnonotus cafer</u>
14. Conure (unidentified)	manu-aloha	

TABLE 7

MAMMALS RECORDED AT AREAS ADJACENT TO HONOLULU HARBOR <sup>5</sup>

<u>English Name</u>	<u>Hawaiian Name</u>	<u>Scientific Name</u>
1. Black rat	iole nui	<u>Rattus rattus</u>
2. Brown rat	iole, Poo-wai	<u>Rattus norvegicus</u>
3. Hawaiian rat	iole	<u>Rattus exulans hawaiiensis</u>
4. House mouse	iole-lilii	<u>Mus musculus domesticus</u>
5. Mongoose	iole-manakuke	<u>Herpestes auropunctatus</u>
6. Feral cat	popoki	<u>Felis catus</u>
7. Feral dog	ilio	<u>Canis familiaris</u>

8. Visual

Due to adjacent structures, mountains and seaward views from Nimitz Highway are often obstructed. Also, there are no natural visual resources in the immediate project vicinity.

9. Ambient Air Quality

A technical document entitled "Air Quality Study for the Makai Boulevard Concept" prepared by Barry D. Root, Air Pollution Consultant, was prepared for this project. This report will form the basis of all subsequent conclusions regarding each respective alternative's impact on air quality.

Applicable State and Federal ambient Air Quality Standards (AQS)<sup>10</sup> are summarized in Table 8. Measurements of air pollutant concentrations at the nearest long-term monitoring stations for 1981 are shown in Table 9. For most pollutants, measured levels are well within allowable Federal and State AQS. However, measurements of carbon monoxide at the Fort DeRussy monitoring station near the intersection of Kalakaua and Kuhio Avenues in Waikiki have been above the State AQS, for one hour, about five percent of the time in 1981. This monitoring station is less than 4 miles southeast of the proposed project area and is the closest station nearest the project that measures carbon monoxide levels.

10. Background Noise Levels

Twenty-four hour noise readings were taken on Nimitz Highway and Waiakamilo Road to determine the existing noise levels. Simultaneously with the noise measurements, the number of automobiles, medium trucks, and heavy trucks traveling on each roadway were counted. The 24-hour noise readings on

TABLE 8  
SUMMARY OF  
STATE OF HAWAII AND FEDERAL AMBIENT AIR QUALITY STANDARDS

POLLUTANT	SAMPLING PERIOD	FEDERAL STANDARDS		STATE STANDARDS
		PRIMARY	SECONDARY	
1. Suspended particulate matter (micrograms per cubic meter)	Annual Geometric Mean	75	60	-
	Annual Arithmetic Mean	-	-	55
	Maximum Average in any 24 hours	260	150	100
2. Sulfur Dioxide (micrograms per cubic meter)	Annual Arithmetic Mean	80	-	20
	Maximum Average in any 24 hours	365	-	90
	Maximum Average in any 3 hours		1300	400
3. Carbon Monoxide (milligrams per cubic meter)	Maximum Average in any 8 hours		10	5
	Maximum Average in any 1 hour		40	10
4. Hydrocarbons Non-methane (micrograms per cubic meter)	Maximum Average in any 3 hours		160	100
5. Ozone (micrograms per cubic meter)	Maximum Average in any 1 hour		240	100
6. Nitrogen Dioxide (micrograms per cubic meter)	Annual Arithmetic Mean		100	70
	Maximum Average in any 24 hours		-	150
7. Airborne Lead (micrograms per cubic meter)	Average Over 3 Months		1.5	1.5

Source: 40 Code of Federal Regulations, Part 50 and State of Hawaii Public Health Rule and Regulations, Chapter 42.



TABLE 9

SUMMARY OF AIR POLLUTANT MEASUREMENTS  
AT LONG-TERM MONITORING SITES 11  
NEAREST TO THE PROJECT AREA - 1981<sup>11</sup>

LOCATION	KALIHI KAI			SAND ISLAND		WAIKIKI
	PARTICULATES	SULFUR DIOXIDE	NITROGEN DIOXIDE	OZONE	CARBON MONOXIDE	
PARAMETERS						
Period of Sampling (months)	12	12	2	12	11	
Number of Samples	58	56	46	314	286	
Range of Values	32-93	5-8	6-77	10-104	1.2-13.8	
Arithmetic Average of Values	53	5	26	37	5.1	
No. of Times State AQS Exceeded	0	0	0	1	13 (5%)	

Note: Carbon monoxide reported in milligrams per cubic meter other pollutants in micrograms per cubic meter. Carbon monoxide and ozone readings are daily peak one hour values; lead is quarterly; other pollutant values are for a 24-hour sampling period.

Waiakamilo Road were taken midway between Nimitz Highway and Dillingham Boulevard, while the 24-hour noise readings on Nimitz Highway were taken between Waiakamilo Road and Kalihi Street, which is a high volume area. It was found that noise levels at the sites where readings were taken were generally between 70 and 71 dBA, or approximately 2 dBA short of reaching the maximum acceptable Federal noise level of 72 dBA. By the year 2002, the noise levels between Kalihi Street and Waiakamilo Road, will exceed the maximum acceptable level of 72 dBA up to 50 feet from the highway. In other areas, the acceptable level will be exceeded up to 46 and 47 feet. Reference to the "Makai Boulevard Concept-Keehi I.C. to Pier 18, Project No. F-092-1(16) Noise Study" prepared by Design Engineering, Inc. will detail actual twenty-four hour noise readings measured.

B. Social Environment

1. Population

The proposed project traverses through an area comprised of the following census tracts: 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62.01, and 62.02. Between the years 1970 and 1980, the population in this area increased from 38,454 to 42,000, or 8 percent.<sup>12</sup>

2. Housing, Neighborhood, Aesthetics, and Transportation Facilities

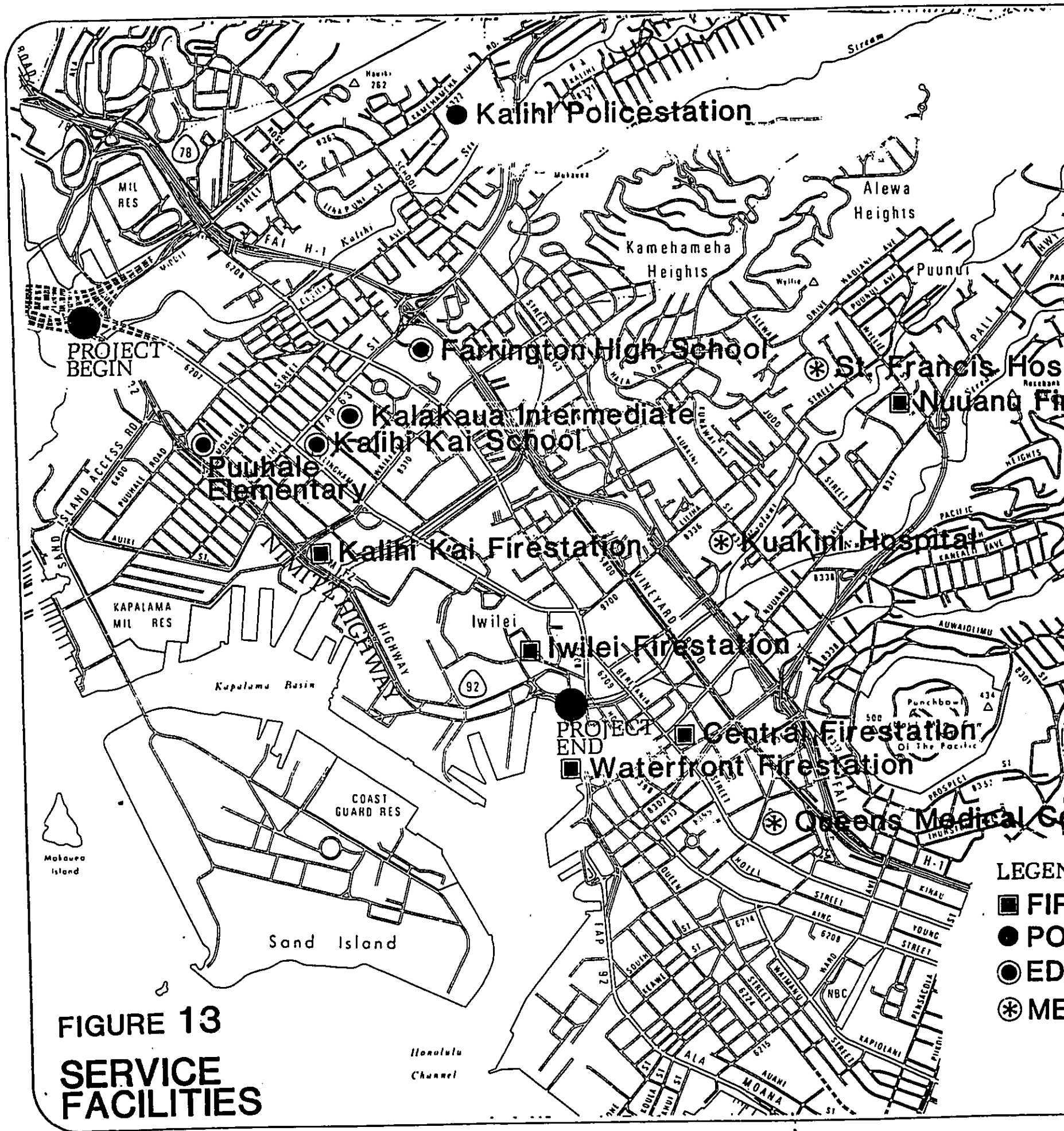
The section of Nimitz Highway between Middle Street and Pier 18, is characterized by light and medium industrial development, strip commercial uses, as well as major harbor terminal and storage facilities (Figure 1). A more detailed description of the project site is as follows:

- a. From Middle Street to Puuhale Road. Strip commercial development is present along this portion of the highway. A large vacant lot extends the width of the makai block between Sand Island Access Road and Puuhale Road. Opposing lanes of traffic are separated by a median of varying width.
- b. From Puuhale Road to Waiakamilo Road. The highway becomes divided by a major median strip. An elementary school and intermittent multi-story industrial warehouse and manufacturing facilities mark the north side of the roadway. The area immediately adjacent to the south side of the road has several commercial establishments and its vacant sections are used occasionally for storage as part of the Foreign Trade Zone and other harbor facilities.
- c. From Waiakamilo Road to Pier 18. Industrial and oil storage facilities are located along the north and south areas of the roadway. Pier facilities and Honolulu Harbor are a part of the southern land use pattern.

Housing is scattered in the project area and generally located away from Nimitz Highway. Most of the housing in the area consists of single family dwelling units and are in a state which may be attributable to the encroaching industrial environment.

3. Historical/Archaeological Sites, Public Institutions, Community Facilities, and Recreation

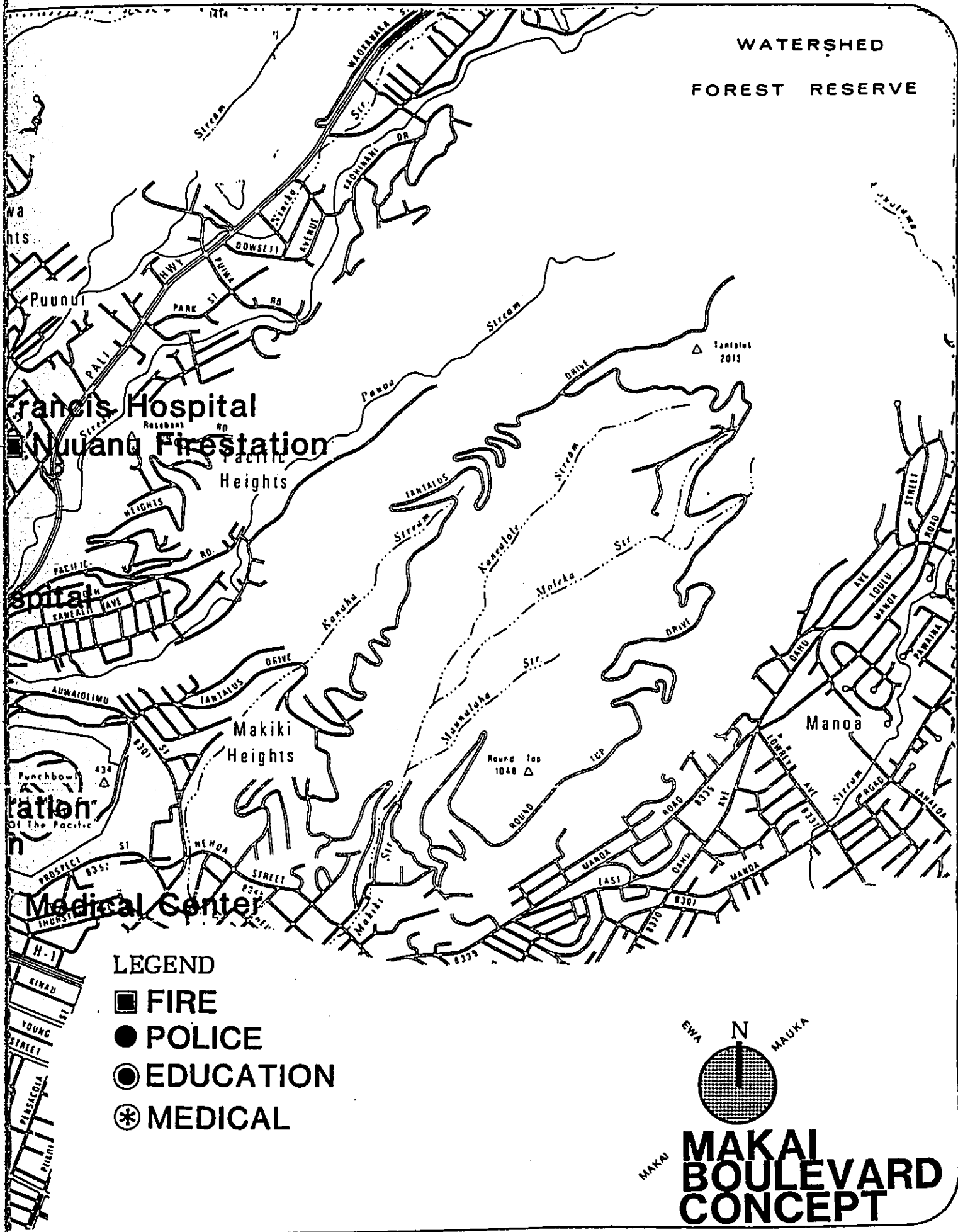
- a. Fire Protection Facilities. The Kalihi-Kai, Iwilei, Central, Nuuanu, and Waterfront Fire Stations are located in close proximity to the Nimitz Highway project boundaries (Figure 13).



**FIGURE 13**  
**SERVICE FACILITIES**

**LEGEND**

- FIRE STATION
- POLICE STATION
- SCHOOL
- \* MEDICAL FACILITY



WATERSHED  
FOREST RESERVE

Francis Hospital  
Nuuanu Fire Station

Makiki Heights

Manoa

LEGEND

- FIRE
- POLICE
- EDUCATION
- \* MEDICAL

MAKAI  
EWA N MAUKA  
MAKAI BOULEVARD CONCEPT

- b. Public Educational Facilities. The Kalihi-Kai and Puuhale Elementary Schools, Kalakaua Intermediate, and Farrington High School are located in the general vicinity of Nimitz Highway (Figure 13).
- c. Emergency Medical Facilities. The St. Francis, Kuakini, and Queen's Hospitals are located in the general vicinity of Nimitz Highway (Figure 13).
- d. Police Protection Facilities. The project area is serviced by the Kalihi Police Station (Figure 13).
- e. Recreation Facilities. The Beretania Playground and Sand Island Park are located near the project site (Figure 13).
- f. Neighborhoods. There are no distinct neighborhoods in the area. The existing industrial environment limits residential desirability and makes future neighborhood growth unlikely.
- g. Archaeological Sites

Since the proposed action will improve an already existing Nimitz Highway right-of-way, no significant historical or archaeological site should be disturbed. No structure or property found on the National or Hawaii Register of Historic Places is located within the immediate vicinity of the proposed project.

C. Economic Setting

1. Labor Force, Tax Base, Industry and Services

1980 census data indicates that 16,374 persons 16 years and

older are currently employed in the project area (Table 10). The majority of the employed are operators, fabricators, and laborers, while only a small percent are in farming, forestry, and fishing occupations.

The tax base is also derived from privately-owned properties in this area. Since the majority of the affected parcels are publicly-owned, the impact of this project on the tax base will be minimal (see page II-24).

2. Income

The 1980 median income and mean income per family within the project area were \$14,795 and \$16,964, respectively.<sup>13</sup>

3. Physical Setting and Improvements

a. Drainage Systems. Drainage lines and culverts along the Nimitz Highway project boundaries originate from Mokauea Street. Drainage lines and culverts, within the Mokauea Street to the Libby Street section, both measure 24 inches. From Waiakamilo Road to Pier 18, drainage lines measure 18, 24, 36, 42, and 48 inches, culverts measure 18 and 24 inches.

b. Water Systems. Water is distributed along the highway, from Sand Island Access Road to Puuhale Road, within 12-inch mains. From Puuhale Road to Kalihi Street, water is conveyed along 6-inch lines. From Kapalama Canal to Pacific Street, water is conveyed in 16-inch mains. Finally, from Pacific Street to Pier 18, existing waterlines measure 6 inches and 12 inches.

c. Sewer Systems. All of the sewage generated in the

TABLE 10  
LABOR FORCE AND OCCUPATIONS<sup>13</sup>

	<u>Persons</u>	<u>Percent</u>
Employed Persons 16 Years and Over	16,374	
Managerial and Professional Speciality Occupations	1221	7.5
Technical, Sales, and Administrative Support Occupations	3243	19.8
Service Occupations	4430	27.1
Farming, Forestry, and Fishing Occupations	239	1.5
Precision Production, Craft, and Repair Occupations	1574	9.6
Operators, Fabricators, and Laborers	5667	34.6



general area of the proposed project flow to the Sand Island Sewage Treatment Plant (STP). The STP was designed to accommodate demands of 173 million gallons per day (mgd) during wet conditions, 89 mgd during dry conditions, and 82 mgd during an average daily flow. The STP is currently operating under capacity at 70 mgd.<sup>14</sup>

From Middle Street to Sand Island Access Road, sewer lines measure 27 inches. From Sand Island Access Road to Kalihi Street, sewer lines measure 8 to 16 inches. From Kalihi Street to Pier 18, lines measure 6, 8, 18, 24, 36, and 54 inches.

- d. Gas Systems. The Gas Company has a major 16-inch gas line running along Nimitz Highway to Waiakamilo Road. From Kapalama Canal to Pier 18, 2-, 8-, and 16-inch gas lines run along Nimitz Highway.
- e. Telephone Systems. The Hawaiian Telephone Company has installed both aerial and underground lines and telephone poles along Nimitz Highway.
- f. Electrical Systems. The Hawaiian Electric Company has installed aerial and underground lines and street lighting along Nimitz Highway. The aerial lines measure 11.5 and 46.0 kilovolts.

D. Planning Process

- 1. Honolulu Gateway Beautification Project.<sup>15</sup> The Honolulu Gateway Beautification Project is the first step in improving those areas of Nimitz Highway and Ala Moana Boulevard which can provide an attractive and appealing visual experience for

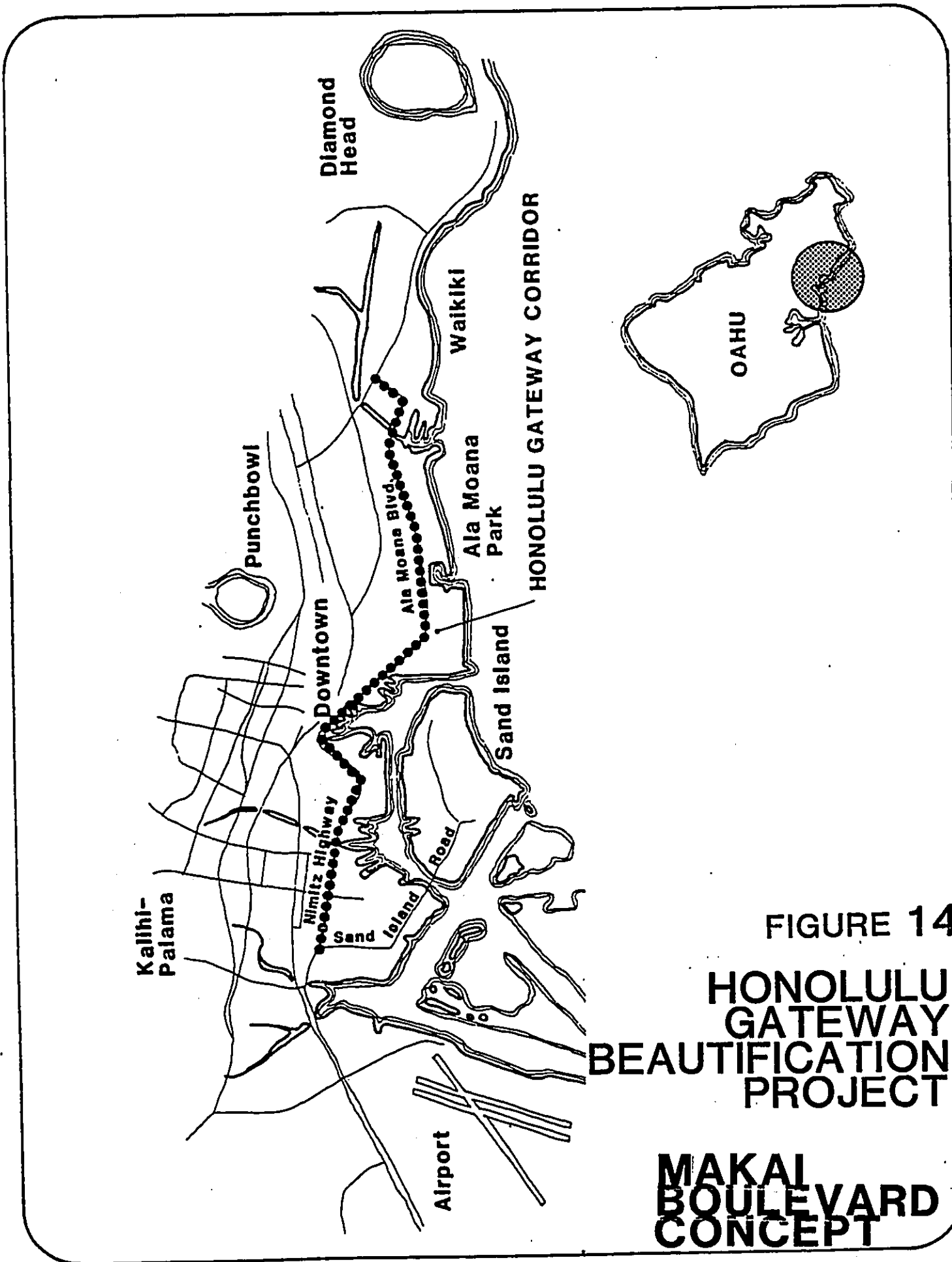
those traveling along these corridors to Waikiki. The State Department of Transportation (DOT) has initiated this project in response to a recognized need for the beautification and improvement of Nimitz Highway and Ala Moana Boulevard from Sand Island Access Road to Kalakaua Avenue in Waikiki (Figure 14).

The project proposes conceptual landscape design plans for the entire Gateway corridor, deals with the development of the roadway as a consistent and contiguous environment, and attempts to reinforce it as a visually pleasing, scenic entryway to Honolulu and the area of Waikiki.

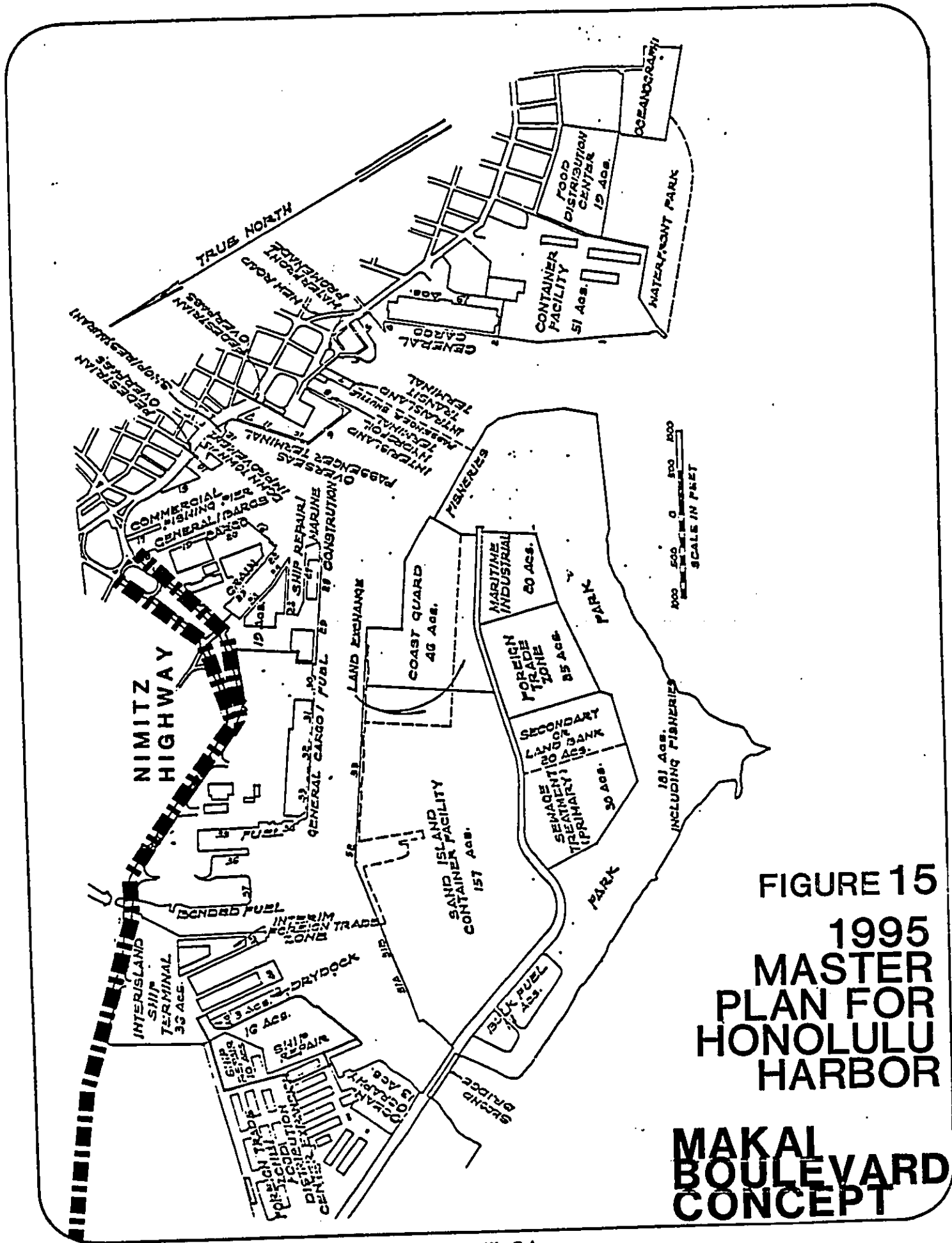
The Makai Boulevard Concept project boundaries encompass the "Industrial District" section of the Beautification Project, from Sand Island Access Road to River Street. The DOT has committed itself into ensuring consistency between the Beautification Project and the Makai Boulevard Concept Project.

Currently, beautification improvements to the Iwilei Section of the Industrial District, from the Dole Pineapple Company to River Street have been completed. However, work on the remainder of the Industrial Section, is proceeding.

2. 1995 Honolulu Harbor Master Plan.<sup>16</sup> The 1995 Honolulu Harbor Master Plan proposes to redevelop the entire Honolulu Harbor/Sand Island area (Figure 15). The plan contains recommendations regarding the use of various segments of the Harbor for the accommodation of operating needs to the year 1995. These needs include: additional container facilities; relocation inter-island barge/ship terminal; relocation of a Foreign Trade Zone; provision for a Food Distribution Center, a bulk fuel storage facility, land for maritime industrial uses, parks at Sand Island and Kakaako, Sand Island Access Road improvements, and a downtown interface; realignment of Coast Guard boundaries;



**FIGURE 14**  
**HONOLULU**  
**GATEWAY**  
**BEAUTIFICATION**  
**PROJECT**  
**MAKAI**  
**BOULEVARD**  
**CONCEPT**



**FIGURE 15**  
**1995**  
**MASTER**  
**PLAN FOR**  
**HONOLULU**  
**HARBOR**

**MAKAL**  
**BOULEVARD**  
**CONCEPT**

up-grading of the sewage treatment plant; and a proposal for marine passenger requirements.

Nimitz Highway bounds the northern face of 1995 Honolulu Harbor Master Plan Project boundaries.

3. The Aloha Tower Plaza.<sup>17</sup> The Aloha Tower Plaza is a redevelopment project which would provide Honolulu needed hotel, office and retail areas; expanded maritime operations, and a symbolic gateway to the city. The Aloha Tower Plaza is bounded by Nimitz Highway; Piers 8, 9, 10, and 11; and Bishop Street.
4. Conceptual Planning Study Piers 2 to 18, Honolulu Harbor.<sup>18</sup> The Department of Transportation formed the Downtown Waterfront Redevelopment Team for the purposes of developing a conceptual plan for the area between Piers 2 and 18 and preserving the Aloha Tower. This study was coordinated with the Department of Planning and Economic Development, Hawaii International Services Agency and is compatible with the development of the Aloha Tower Plaza.

MAKAI  
BOULEVARD  
CONCEPT

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CONCEPT

IV

ENVIRONMENTAL  
CONSEQUENCES

#### IV. ENVIRONMENTAL CONSEQUENCES

##### A. Urban and Community Impacts

##### 1. Social and Economic Impacts

It is anticipated that the proposed action will have either minimal or no impact to the following social variables: neighborhood splitting, isolation of a distinct ethnic group, introduction of new developments, change in property values, change in school districts, and reduction of recreational resources. Additionally, specific social groups, including the elderly, handicapped, nondrivers, transit dependents, and minorities should not be impacted more than the rest of the community. Since traffic congestion would be minimized, the children would be provided safer pedestrian movement to Puuhale Elementary School, which is located along Nimitz Highway.

Short-term economic gain is anticipated should the project be implemented. Although this will be of short duration, the project will create work for the construction industry, service industries, and suppliers of construction materials. Further, there will be an infusion of cash into the local economy resulting from increased tax revenue accrued from the sale of supplies. There should be then, an increase in public expenditures, employment opportunities, accessibility, retail sales, and availability of retail goods and services.

Inspection of Nimitz Highway and the frontage properties indicate that the need for access by their consumer public for economic survival, is not as imperative as other portions of Nimitz Highway which do rely on accessibility. For the most

part, the frontage properties face away from Nimitz Highway, and their access and egress points are on side streets, off the Nimitz Highway property. Finally, the type of activities located on Nimitz Highway, within the project boundaries, are not of those which demand returning public customers, but instead, are of a service nature. Therefore, economic impacts are anticipated to be minimal.

The proposed project boundaries encompass the "Industrial District" section of the Beautification Project, from Sand Island Access Road to River Street. The DOT has committed itself into ensuring consistency between the Beautification Project and the alternatives of the project. The Beautification Project will enhance the visual and scenic properties of the Nimitz corridor, by providing landscaping and other design amenities. The recommended alternative will result in minimal destruction of trees and landscaping located within the project boundaries.

2. Relocation Impacts

Some alternatives would have necessitated the acquisition of land for increased right-of-way. However, it is not anticipated that any of the existing businesses would need to be relocated and no homesites would be impacted. The recommended alternative would only require a minimal acquisition of land for increased right-of-way.

3. Land Use Impacts

The project proposes to improve Nimitz Highway. No induced or joint development is expected to result, since the area is already currently developed. The project is consistent with the following State and County plans and regulations:



- a. State Land Use District Boundaries.<sup>19</sup> The State land use designation is Urban along the entire corridor.
- b. State Transportation Plan (Interim).<sup>20</sup> Chapter 279 A, HRS, required the Department of Transportation to prepare a new State-wide Transportation Plan. Chapter 279 A, HRS required the plan to be directed "toward the ultimate development of a balanced, multi-modal statewide transportation system that services clearly identified social, economic, and environmental objectives."

The proposed project is in conformance with policy statements regarding the "Statewide Highway System," a separate program, specifically discussed in the State Transportation Plan. These policy statements include:

"Develop and update Highway Master Plans which serve statewide needs relating to the efficient, safe, and convenient movement of people and goods within Hawaii."  
(Objective C)

"Promote the planning for and improvement of the primary, secondary, and urban highway and street systems consistent with state and county plans to control growth."  
(Objective C, Policy C (3))

"Improve safety on state and county highways and streets."  
(Objective C, Policy C (3), Implementing Action C (3) (b))

- c. Zoning.<sup>21</sup> The areas surrounding the project boundaries are comprised of land zoned Business; Light Industry; and Residential.
- d. Existing Land Use. The existing land uses along Nimitz Highway within the project boundaries are primarily light industry and commercial businesses (Figure 16).
- e. General Plan.<sup>22</sup> The proposed project is in compliance with the following City and County of Honolulu General Plan Objectives and Policies:

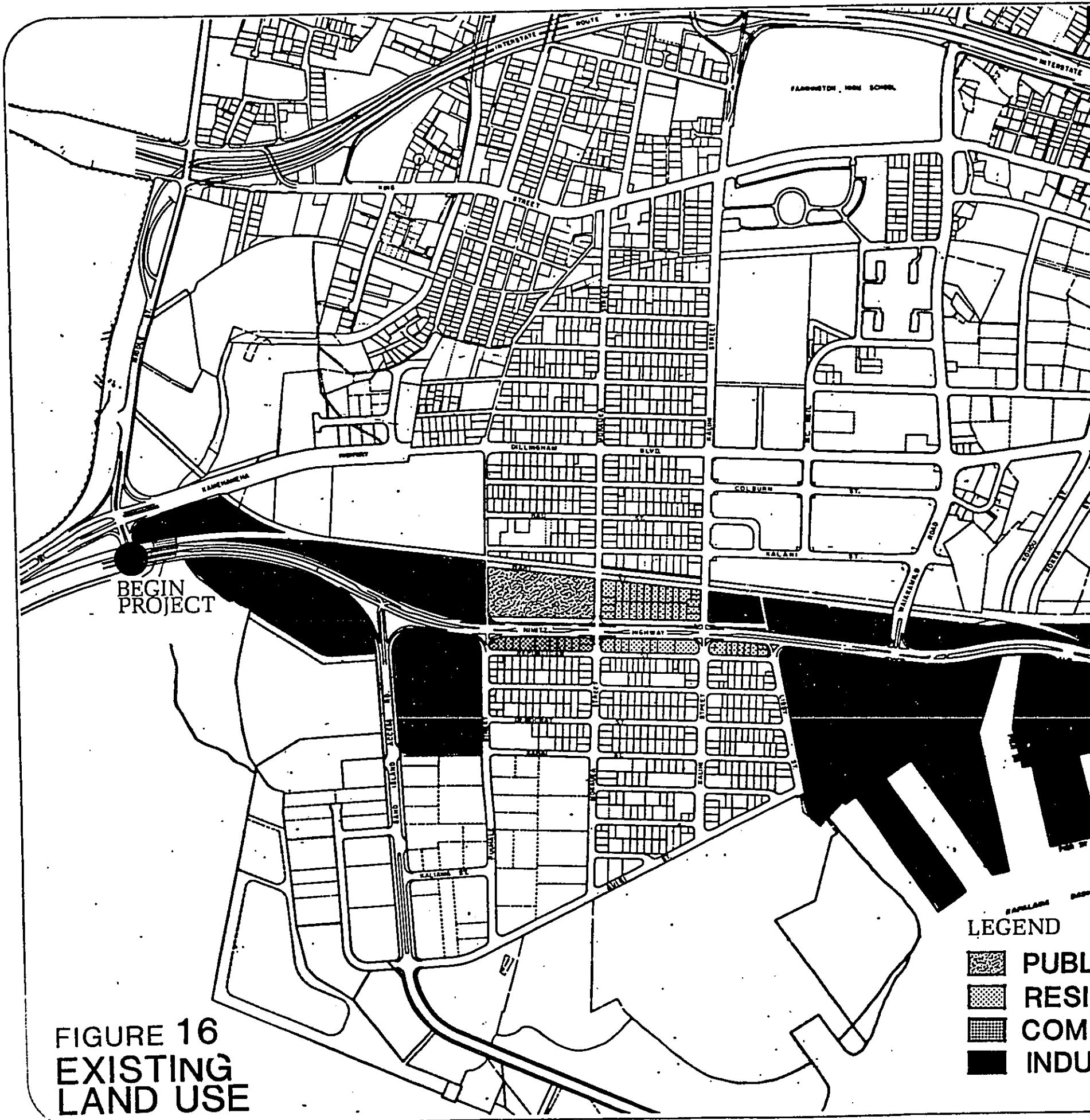
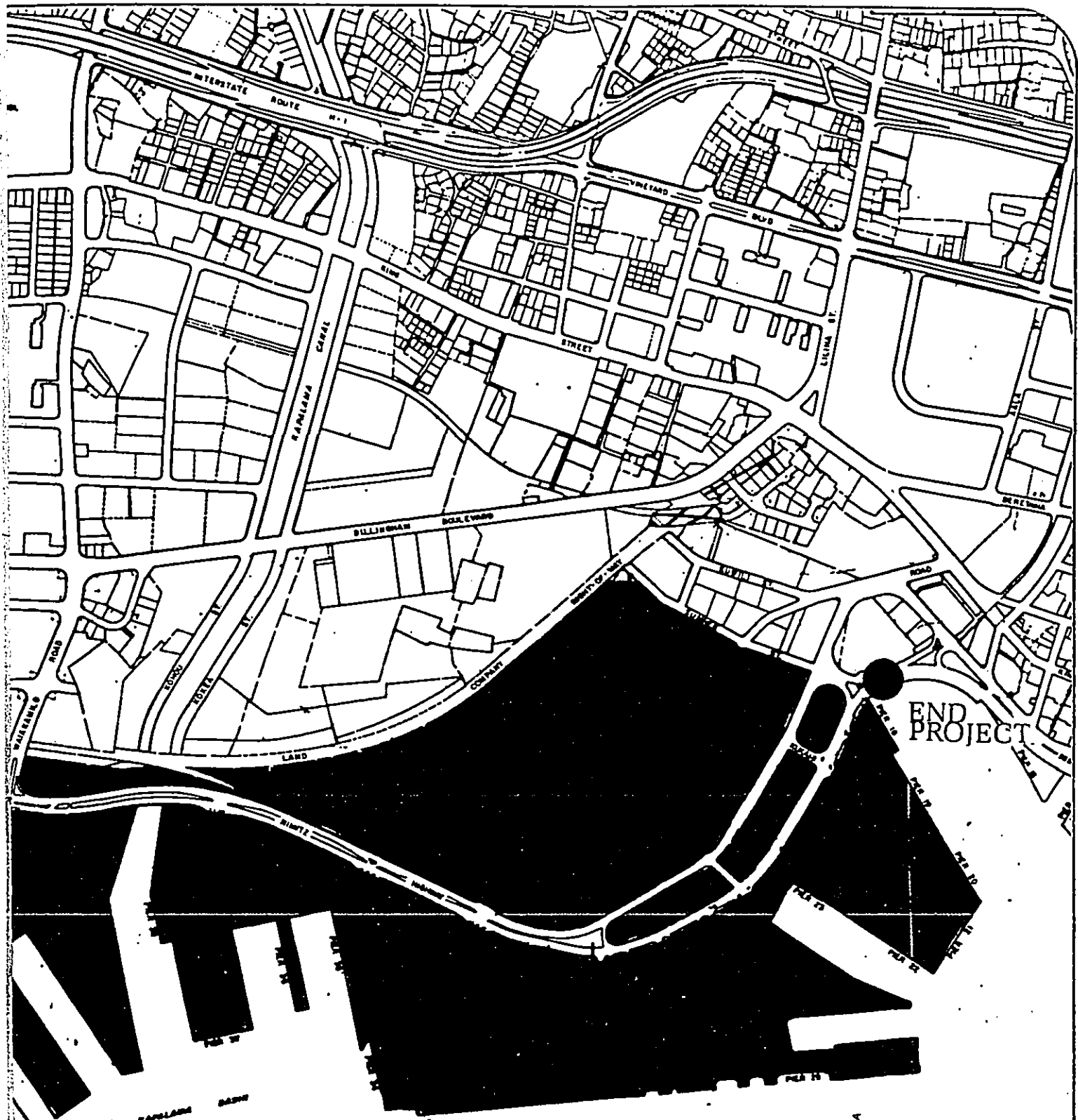


FIGURE 16  
EXISTING  
LAND USE

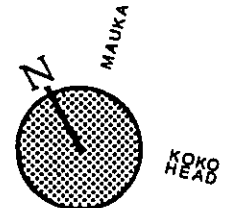
LEGEND

-  PUBL
-  RESI
-  COM
-  INDU



**LEGEND**

-  PUBLIC FACILITY
-  RESIDENTIAL
-  COMMERCIAL AND INDUSTRIAL
-  INDUSTRIAL



**MAKAI BOULEVARD CONCEPT**

"To create a transportation system which will enable people and goods to move safely, efficiently, and at a reasonable cost....." (Transportation and Utilities; Objective A)

"Improve roads in existing communities to reduce congestion and eliminate unsafe conditions." (Transportation and Utilities; Objective A; Policy 5)

"Consider both environmental impact as well as construction and operating costs as important factors in planning alternative modes of transportation." (Transportation and Utilities; Objective A; Policy 6)

- f. Development Plans. Development Plans, according to the Revised Charter of 1973, are relatively detailed guidelines for the physical development of the island. They are an intermediate means of implementing the objectives and policies of the General Plan. They are also meant to indicate the sequence in which development will occur.

The Nimitz Highway corridor is located in the recently adopted Primary Urban Center (PUC) Development Plan (DP). The PUC DP designates Nimitz Highway as a special area and states that "the corridor deserves special consideration because of its function as the major ingress and egress route of visitors and as a major thoroughfare for residents."<sup>2</sup> The DP further states that "appropriate measures to enhance the attractiveness of this corridor and the public and private responsibilities to implement and maintain such improvements shall be adopted."

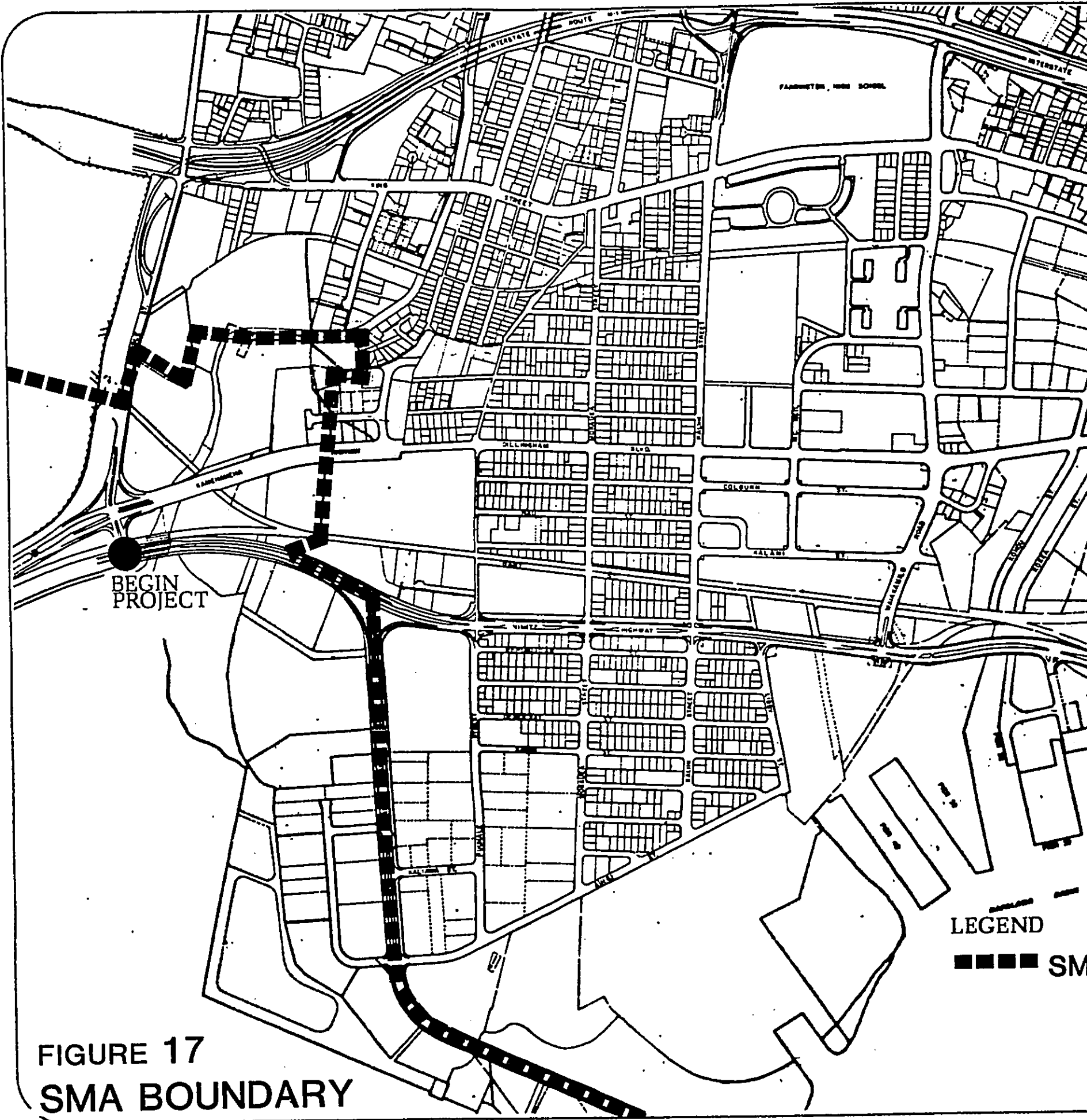
The corresponding "Development Plan Facilities Map" for the PUC designates the Nimitz Highway corridor as "Improvements within Existing Right-of-Ways" and "Plans for Future: 7 Years and Beyond." Therefore, it is the intent of the DP to commence improvement of the corridor, by the year 1989 or later.<sup>3</sup>

- g. Special Management Area. The City and County of Honolulu has designated the shoreline and certain inland lands around Oahu as being within the Special Management Area (SMA).<sup>23</sup> The SMA includes areas which are felt to possess a sensitive environment and should be protected in accordance with the State Coastal Zone Management policies. Based on the maps from the Department of Land Utilization, City and County of Honolulu, a portion of the western end of Nimitz Highway is within the SMA boundary (Figure 17). Therefore, the selected alternative is subject to the provisions of applicable City and County of Honolulu regulations and a permit will need to be obtained.

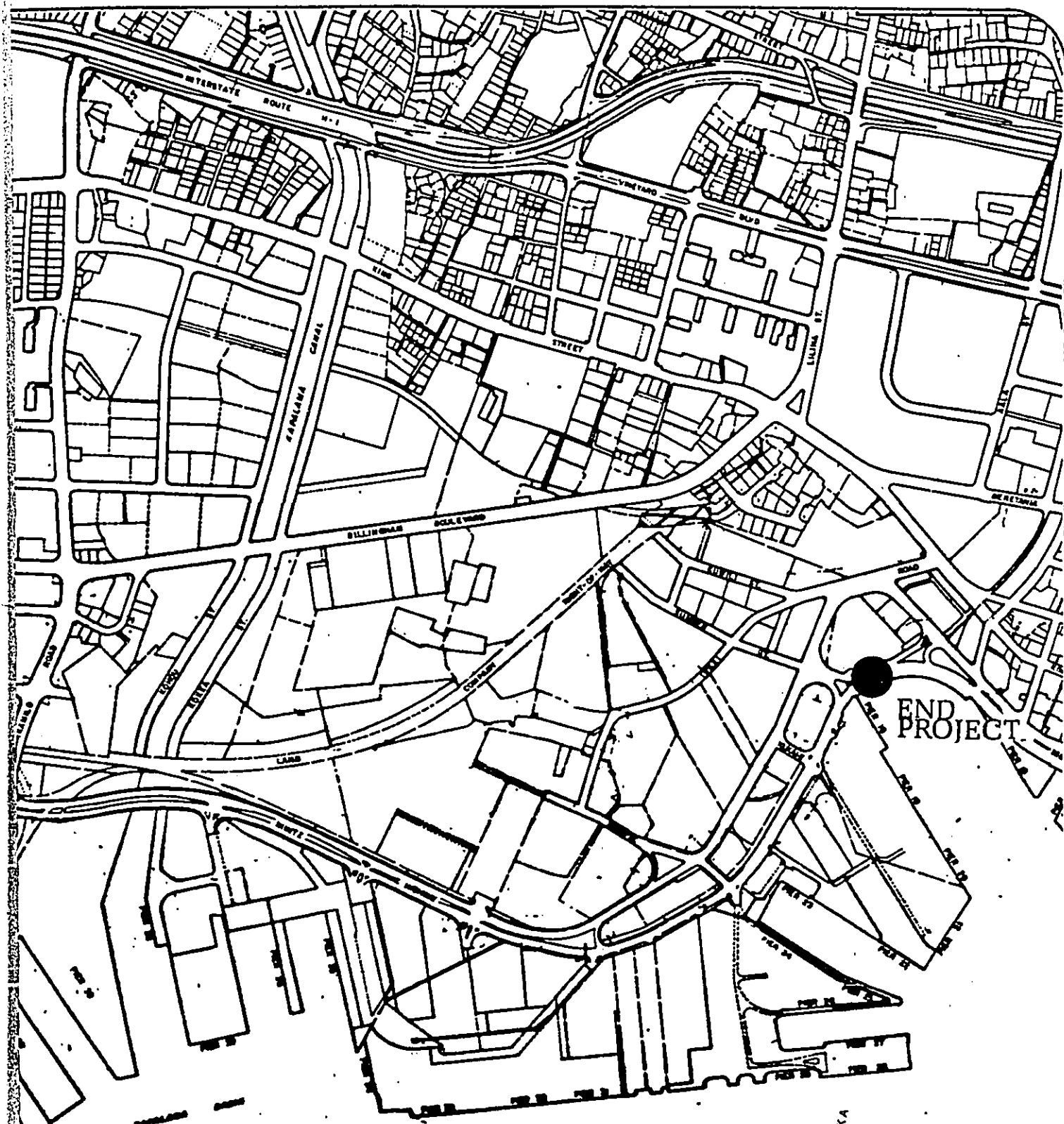
4. Considerations Relating to Pedestrians and Bicyclists

- a. Relationship of the Project to Local Plans for Bicycles and Pedestrian Facilities. The Statewide Master Plan for Bikeways<sup>24</sup> indicates that Nimitz Highway, within the project's limits should have bikelanes either under construction or design. The provision of bikelanes as part of Alternative IA was considered; however, the bikelane would have taken too much area within the right-of-ways. Therefore, bikelanes will not be provided.
- b. Current and Potential Bicycle and Pedestrian Activity. Current bicycle activity is estimated to be less than 50 bicycles per day (both directions), in the segment between Waiakamilo Road and Pier 18, where bikelanes are provided on Nimitz Highway. These bikelanes terminate at Fort Street in downtown Honolulu. Between Waiakamilo Road and Middle Street, bicycle activity is estimated to be 10 per day.

Future bicycle use of the facility is not expected to

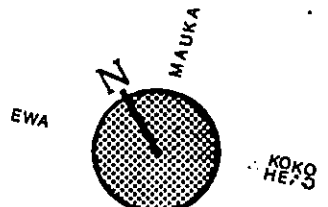


**FIGURE 17**  
**SMA BOUNDARY**



**LEGEND**

■■■■ SMA BOUNDARY



**MAKAI BOULEVARD CONCEPT**

increase because of the declining level of bicycle registrations on Oahu and the increased congestion on the corridor. Of the 348 major accidents recorded on Nimitz Highway between Kalihi Stream and Pier 18 in 1980, 1981, and 1982, five involved bicycles and one involved a moped. In each accident involving a bicyclist, improper driving by the other driver was identified as a contributing factor to the accident.

Current pedestrian travel along the corridor is limited because of the lack of activities fronting the highway. The deficient sidewalks and the availability of nearby parallel streets (Kanakanui and Republican) between Libby Street and Puuhale Road also contribute to the lack of pedestrian activity on Nimitz Highway. Near intersections, access to bus stops and crossing movements create a need for improved sidewalks. Pedestrian crossing of the Nimitz Highway corridor is necessary for bus users, Puuhale School students and parents, and other intracommunity trips.

Future pedestrian activity is not expected to differ from existing activity. Pedestrians were involved in fifteen of the 348 major accidents referred to above. Of these, only one was on a sidewalk, four were in crosswalks, with the remainder in other roadway areas. Ten pedestrian accidents occurred in 1982.

The proposed improvement would provide sidewalks along a portion of the facility. Improved signalization and the elimination of some marked crosswalks would improve pedestrian safety.



- c. Consistency with 23 USC 109(n).<sup>25</sup> The code reads as follows:

"The Secretary (of Transportation) shall not approve any project under this title that will result in the severance or destruction of an existing major route for nonmotorized transportation traffic and light motorcycles, unless such project provides a reasonably alternate route or such a route exists."

Since the project will not sever or destroy an existing major route, alternative routes need not be provided.

5. Visual Impacts

The recommended alternative will not have any significant impact on scenic views originating from outside the project boundaries, since the proposed improvements basically include only minor paving and restriping. Northern and southern views will remain unobstructed.

B. Physical Impacts

1. Air Quality

During construction of any of the alternatives, the amount of dust produced will vary, depending on the level of activity, the amount and type of bare soil exposed or disturbed, wind and weather conditions, and control measures used. Since the corridor is essentially level, cut and fill operations, as well as, associated dirt hauling operations should be minimal. A well timed work site watering program should be effective in controlling these fugitive dust emissions.

The proposed project will require construction specifications and the compliance with State Department of Health, Rules and Regulations, which stipulate control measures.<sup>26</sup>

There will also be some short-term air pollutant emissions from heavy construction vehicles. Many of these vehicles are diesel powered. Diesel engines produce significant amounts of nitrogen dioxide but very little of the carbon monoxide that is the major concern for this project. The air pollution impact of construction vehicles is expected to be miniscule compared to emissions from vehicles traveling on roadways within the project area.

Since traffic levels in the project area are already near capacity, any traffic congestion created by project construction will significantly increase vehicular emissions of carbon monoxide, hydrocarbons, nitrogen dioxide, and lead. Accelerating and decelerating vehicles, moving at low average speeds, create more air pollution than vehicles traveling at a steady speed. Vehicular emissions from stop and go traffic through construction sites is thus, likely to present the greatest air pollution impact during the construction phase of the project. When possible, detours around major construction areas will be established, but the only other mitigative strategies that can be employed to limit these construction-related vehicular emissions will be to avoid construction during peak roadway usage hours and to complete traffic-delaying work in the minimum time possible.

In summary, the impact of construction-related emissions on air quality should range from none at all for the no-build alternative to maximum potential impact for Alternative IV, which will require the greatest degree of roadway improvement and probably the longest construction period. The recommended alternative proposes only minor improvements relative to the other alternatives, therefore, construction-related air pollution will not be severe.

Three critical receptor sites were selected for detailed carbon

monoxide diffusion modeling analysis. Site 1 is on the north side of Nimitz Highway across from the Sand Island Road intersection. Site 2 is on the east side of Kalihi Street near the Nimitz intersection and Site 3 is on the east side of Waiakamilo Road near its intersection with Nimitz Highway.

At Site 1, there is essentially no difference in carbon monoxide concentration between Alternative IA (preferred), if no improvements were implemented; the carbon monoxide concentration would not exceed Federal AQS.

Fairly similar results will occur at Sites 2 and 3. At Site 2, Alternative IA, shows a lower worst case carbon monoxide concentration as compared with the no improvement or Do-Nothing alternative. Site 3, worst case carbon monoxide concentrations are expected to exceed State of Hawaii AQS until 1986, thereafter, carbon monoxide concentrations will continually decline and levels will be slightly lower for Alternative IA with respect to the Do-Nothing alternative.

In general, carbon monoxide concentrations were relatively lower for alternatives III and IV at all of the receptor sites. Also, Alternative II would have carbon monoxide concentrations very similar to the Do-Nothing alternative and Alternative IA.

## 2. Noise

During site preparation, clearing, and construction activities, an increase of ambient noise is inevitable. Reference to Noise From Construction Equipment and Operations, Building Equipment, and Home Appliances by the Federal Environmental Protection Agency in 1971, will present noise levels generated by construction machinery.<sup>27</sup>

The following are methods for minimizing noise produced during construction:

- Placing mufflers on construction machinery, equipment, etc.
- Instructing workers to avoid unnecessary "gunning" of construction equipment and to turn off equipment when not in use.

The contractor will ensure that all construction equipment is in proper condition and the State will monitor the methods mentioned above.

A noise study was prepared which basically assesses the noise impact of each respective alternative.<sup>28</sup> The following is a summary discussion of the study conclusions.

The outdoor equivalent standard as established by 23 U.S.C. 109(i) is noise level (Leq) 72 dBA (Category C). The current equivalent noise levels 50 feet from sensitive receptors along Nimitz Highway, are already between 70 and 71 dBA. By the year 2002, the equivalent noise level will exceed the maximum acceptable level of 72 dBA by .1 dBA. For the preferred proposal, the future noise level will be nearly the same as the Do-Nothing Alternative. Only the viaduct proposals will reduce noise levels below Federal standards.

Two facilities, Puuhale Elementary School and Kalihi Kai Fire Station are located directly adjacent to the Nimitz Highway corridor. The primary concern regarding Puuhale Elementary School would be noise from vehicular traffic. For schools, churches and residences, 23 U.S.C. 109(i) establishes 67 dBA as the exterior design equivalent noise level.

However, based on the "Makai Boulevard Concept, Keehi I.C. to Pier 18, Noise Study," it was found that the school was 150 feet from the nearest westbound lane, a distance greatly

exceeding the standard of 84 feet from the center-line of the nearest lane for which noise levels drop to the maximum acceptable Leq 67 dBA level. Therefore, the school is located in the zone where adverse noise levels will be minimal. In addition, the school is currently air-conditioned and acoustically treated due to previous problems experienced with aircraft noise from Honolulu International Airport. Adverse effects of traffic generated noise is therefore, minimized and further mitigation of interior noise levels is impractical.

It is likely that noise levels will exceed Federal design standards at several other locations including an apartment building and playground. Due to the minor improvements being proposed and the insignificant noise impacts of this project, mitigation measures are not necessary.

The State Department of Health has indicated that the project must be designed to conform with the provisions of Title 11, Administrative Rules, Chapter 43, Community Noise Control for Oahu, Section 11-43-5(b)(2) Highway Noise.

3. Energy

A technical document, entitled Comparative Energy Analysis For The Makai Boulevard Concept, evaluated the energy utilization of each of the alternatives. Reference to the report will provide the technical calculations and assumptions utilized to complete the study.<sup>29</sup>

The key assumption of the analysis was that compared to 1992 conditions that would exist under the Do-Nothing Alternative, proposed at-grade roadway improvements would increase average vehicular speeds through the project area by about 5 mph with the number of stops per vehicle reduced by one. To the extent that this assumption held true, there could be substantial energy

savings associated with each of the proposed project alternatives. Expected energy use reduction is 19 percent for the proposed improvement IA, and this reduction is considered significant.

If however, energy savings are viewed from the standpoint of daily dollar costs to reduce energy consumption in the project area by the equivalent of one barrel of crude oil per day, then, in terms of energy cost effectiveness, the various project alternatives rank as follows (based on estimated project costs over a 30-year lifetime):

Alternative IA (preferred), B	\$ 3.76
Alternative II	\$ 4.86
Alternative IC	\$12.06
Alternative III	\$31.05
Alternative IV	\$49.09

4. Wild and Scenic Rivers

Currently, no rivers in the State of Hawaii are identified as a part of the wild and scenic river system.

5. Floodplain Impacts

According to the State of Hawaii Civil Defense, the tsunami inundation zone extends 1,500 feet inland from Sand Island's southeast coast. Nimitz Highway, within the project boundaries is therefore, not subject to any tsunami inundation activity.

The Kapalama Stream and Nuuanu Stream are not subject to any periodic flooding activity. However, Nimitz Highway may be subject to "Zone AO" and "Zone B" type flooding due to its proximity to Kalihi Stream (Figure 18). According to the U.S. Department of Housing and Urban Development (HUD), Federal Insurance Administration, "Flood Insurance Rate

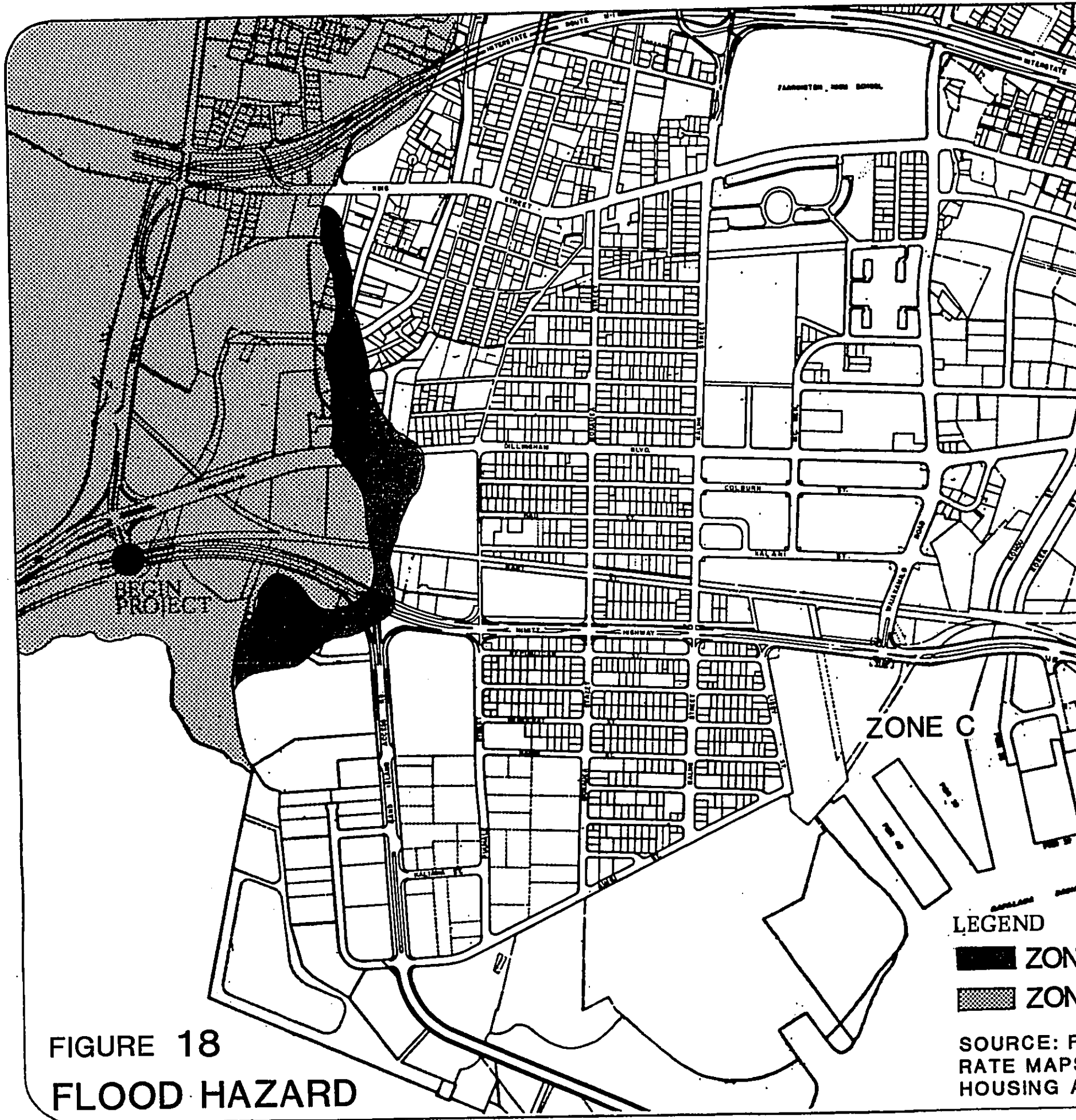
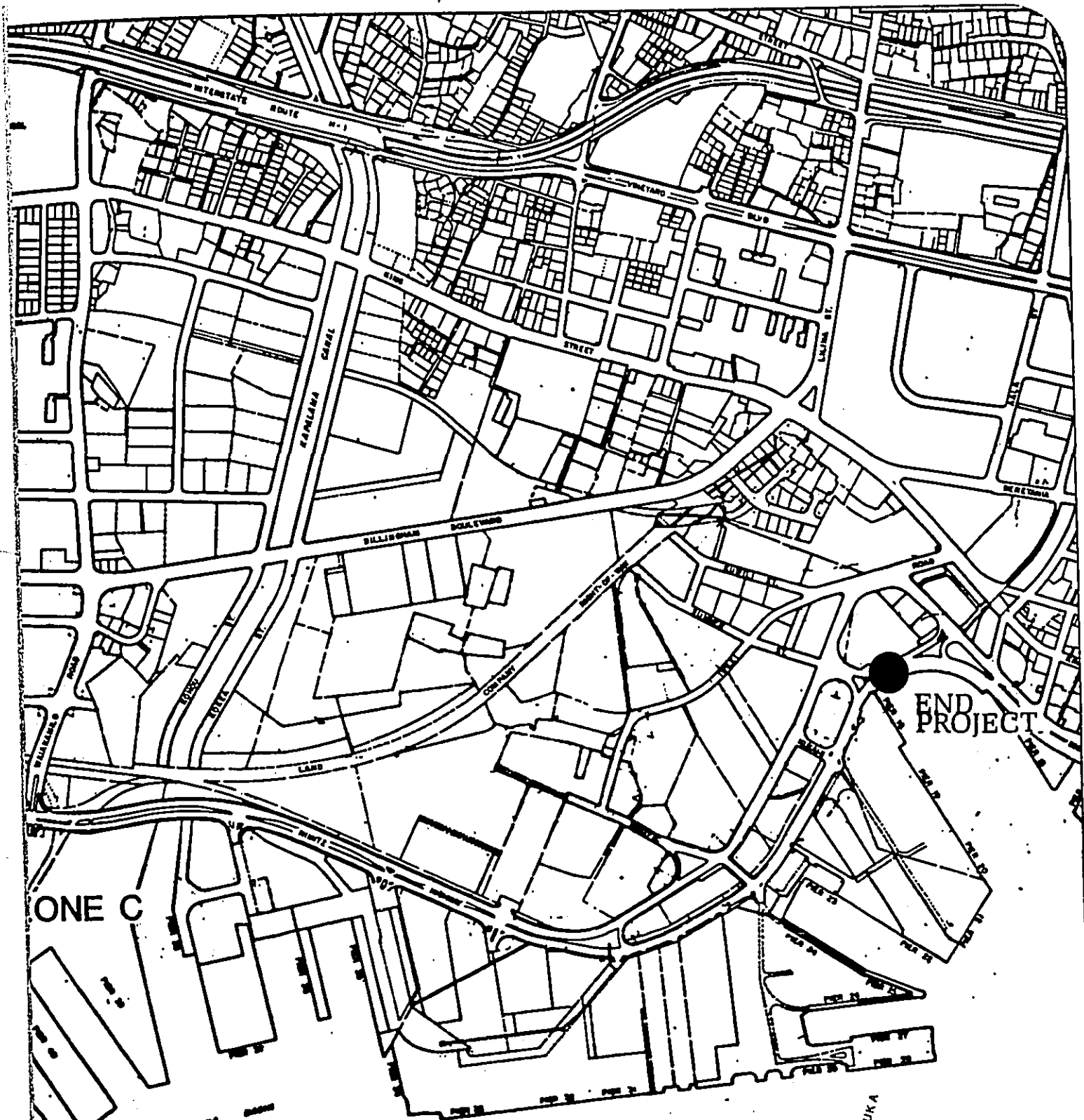


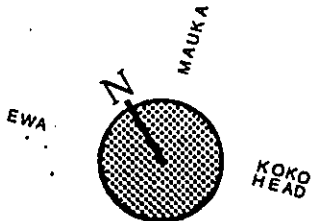
FIGURE 18  
FLOOD HAZARD



**LEGEND**

- ZONE B**
- ZONE AO**

SOURCE: FLOOD INSURANCE  
RATE MAPS, U.S. DEPARTMENT OF  
HOUSING AND URBAN DEVELOPMENT



**MAKAL  
BOULEVARD  
CONCEPT**



Maps,"<sup>30</sup> Zone AO are areas subject to 100-year shallow flooding where depths are between one (1) and three (3) feet, while Zone B are areas between the limits of the 100-year flood and 500-year flood, or are areas subject to 100-year flooding with average depths of less than one (1) foot, or where the contributing drainage area is less than one square mile. The remainder of the corridor is in Zone C, areas of minimal flooding.

Since the climate is relatively dry, an increase in storm runoff is anticipated to be minimal and consistent with existing levels of runoff. Furthermore, the recommended alternative should not increase stormwater runoff since no significant amount of additional impervious surfaces would be created.

The proposed Makai Boulevard project will be required to comply with applicable City and County of Honolulu restrictions and standards. The project will also be subject to the review of the Department of Land Utilization and the Department of Public Works, City and County of Honolulu.

6. Coastal Zone Impacts

Portions of the island of Oahu are subject to control by the Hawaii State Coastal Zone Management Program and Chapter 205A, Hawaii Revised Statutes.<sup>31</sup> It is the purpose of this program to comply with the requirements of the National Coastal Zone Management Act and "to provide for the effective management, beneficial use, protection, and development of the coastal zones of the several states." Sections 205A-2 and 205A-6 present objectives and policies of the program. The following discusses those objectives and policies that are directly applicable to this project.

"Provide public or private facilities and improvements important to the State's economy in suitable locations." (Section 205A-2 (a)(5) Economic Uses (A))



DEPARTMENT OF PLANNING AND ECONOMIC DEVELOPMENT DIRECTOR'S OFFICE

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DEPUTY DIRECTOR

MAY 4 4 15 PM '84

Ref. No. 9319

DEPT. OF TRANSPORTATION  
May 1, 1984

DIVISIONS:  
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ENERGY DIVISION  
FOREIGN TRADE ZONE DIVISION  
HAWAII INTERNATIONAL SERVICES AGENCY  
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OFFICES:  
ADMINISTRATIVE SERVICES OFFICE  
HAWAII FILM OFFICE  
INFORMATION OFFICE  
OCEAN RESOURCES OFFICE  
TOURISM OFFICE

MEMORANDUM

TO: The Honorable Wayne J. Yamasaki, Director  
Department of Transportation  
FROM: Kent M. Keith *Kent M. Keith*  
SUBJECT: Federal Consistency Certification, Makai Boulevard Concept

This is to inform you that we have reviewed your assessment of the proposed activity's consistency with Hawaii's Coastal Zone Management (CZM) Program and concur with your finding that the activity is consistent with the relevant provisions of the CZM program.

We appreciate your assistance and cooperation in complying with the substantive and procedural requirements of the CZM program.

The proposed action will improve an existing Nimitz Highway. The impact resulting from construction of the improvements will provide the state with economical benefits.

"Identify and analyze significant archaeological resources."  
(Section 205A-6 (c)(2) Historic Resources (A))

"Support State goals for protection, restoration, interpretation, and display of historic resources." (Section 205A-6 (c)(2) Historic Resources (c))

This Environmental Impact Statement will identify the existence of significant archaeological resources and analyze them, if necessary. If the State Historic Preservation Officer determines any site found to be significant, the project will protect, restore interpret, and/or display the site.

"Develop and communicate adequate information on storm wave, tsunami, flood, erosion, and subsidence hazard."

"Control development in areas subject to storm wave, tsunami, flood, erosion, and subsidence hazard."

"Ensure that developments comply with requirements of the Federal Flood Insurance Program." (Section 205A-6 (c)(6) Coastal Hazards (A)(B)(c))

The project boundary at Middle Street lies within the floodplain area, however the proposed or recommended Alternative IA is outside the floodplain.

The State Department of Planning and Economic Development has indicated that this project is consistent with the relevant provisions of the CZM program.

7. Wetland Impacts

Discussions with the U.S. Department of Interior<sup>32</sup> have indicated that no wetlands exist in the Kalihi area which may be impacted by the proposed project.

8. Water Quality Impacts

During construction, potential incidences of erosion and sedimentation may impact the water quality of the adjacent streams during a significant storm, resulting in increased constituent loads, nitrogen, phosphorus, and suspended solids. The impact of construction activities will be mitigated by conforming to strict erosion control measures, including Chapter 23, Grading, Soil, Erosion, and Sediment Control, Revised Ordinances of Honolulu, 1978, as amended; the City & County of Honolulu's Grading, Grubbing, and Stockpiling Ordinance No. 3968, 1972; the USDA Soil Conservation Services Erosion and Sediment Control Guide for Hawaii, 1981; and the State Department of Health's Water Quality Standards, Chapter 37-A, Public Health Regulations, 1968. Approval by the City & County of Honolulu Department of Public Works will be required to ensure proper erosion control.

Further, adverse water quality impacts to adjacent streams should not result due to this project since only minor improvements are being proposed.

The possible occurrence of oil spills from construction vehicles and machinery may also adversely impact water quality of the streams. To ensure that this does not happen, no refueling operations should be allowed near stream beds, thus, reducing the chances of fuel and oil being spilled into the streams.

After construction, potential water quality impacts may result

due to the increase in traffic volume and the subsequent increase in surface pollutants, including solids, organics, metals, nutrients, and bacteria. However, since the climate is relatively dry, no significant increase in stormwater runoff is anticipated, thereby, reducing the potential of pollutants being swept into the streams and coastal waters with the runoff. All runoff will be directed to near shore waters, waters which already receive contaminants from the Kalihi and Downtown areas; consequently, the chemical characteristics of the runoff are expected to remain relatively unaffected by this project. It is also believed that impacts to water quality would be further minimized since biocides currently in use that may potentially affect water quality tend to break down more readily in comparison to the more lasting types of a few years ago. Finally, lead concentrations originating from automobiles should be steadily decreasing, since newer automobiles have been designed to only utilize unleaded gasoline. It should be further noted that the recommended alternative will not create substantial amounts of impervious surfaces and therefore, should not increase any significant amount of stormwater runoff.

The selected Alternative IA will propose only minor improvements relative to the other alternatives. Therefore, significant erosion and sedimentation problems should not occur and no significant impact on the nehu fishery located at the mouth of the Kalihi and Moanalua Streams is anticipated.

9. Threatened or Endangered Species

Since the Nimitz Highway corridor travels through an existing urbanized community, the existence of any threatened or endangered species of mammals or avifauna appears unlikely. The Fish and Wildlife Service, U.S. Department of Interior based on their surveys, have indicated that no endangered or threatened species were observed.<sup>33</sup>

The U.S. Department of Commerce, National Marine Fisheries Service, in their letter of February 27, 1984 has indicated the absence of impact to any threatened or endangered species under their jurisdiction.

10. Prime and Unique Agricultural Lands

The project alignment traverses through an existing urbanized community. There are no prime or unique agricultural lands in the general vicinity that would be impacted due to the proposed project.

11. Public Utilities Impacts

The alternatives, except for the Do-Nothing Alternative, will affect utility lines, pipelines, and poles located within the Kalihi Section of the Nimitz Highway corridor, between Kapalama Canal and Middle Street. Therefore, these utility lines, pipelines, and poles will need to be relocated, when necessary. The relocation of these utilities will not pose any serious problem. Prior to construction, the engineering consultant will coordinate their plans for relocating the various utilities with the appropriate regulatory agency or utility company.

Should overhead lines on Nimitz Highway be placed underground, it may be necessary to underground electrical services to several other customers as well. The cost of undergrounding these service lines in private property must be borne by the property owner.

12. Construction Impacts

Short-term impacts, beneficial and adverse will result from construction related activities. Consequently, these impacts are temporary and should not last longer than the duration of the construction period.

*Hwy 6400*



**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
Southwest Region  
Western Pacific Program Office  
P. O. Box 3830  
Honolulu, Hawaii 96812

February 27, 1984

F/SWR1:ETN

Mr. T. Harano  
Chief, Highways Division  
Department of Transportation  
State of Hawaii  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Mr. Harano:

We have reviewed the fact sheet provided for the Makai Boulevard Concept, Keehi Interchange to Pier 18, Project No. F-092-1(16). There should be no impact to any threatened or endangered species under the jurisdiction of the National Marine Fisheries Service (NMFS). Thus, formal consultation by the Federal Highway Administration under the Endangered Species Act of 1973, as amended will not be required for this proposed project.

We appreciate the opportunity to provide comments.

Sincerely yours,

Eugene T. Nitta  
Marine Mammal Coordinator

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DEPT. OF TRANSPORTATION  
HIGHWAYS DIVISION

Each respective alternative will impact the existing roadway at varying degrees, since each alternative proposes various actions. Some flora may be cleared during construction. However, existing vegetation is limited and located only on the roadway's adjacent sidewalks and medial strips. This project will provide landscaping which will replace uprooted vegetation and will be consistent with the Honolulu Gateway Beautification Project.

Fauna may be displaced or frightened away. However, after completion of the construction, it is anticipated that the fauna will return for food and shelter in the area.

Some disruption is anticipated to the Puuhale Elementary School, which is located along Nimitz Highway. However, this disruption should be minimal, since the school is located in the zone where adverse noise levels will be minimal. The possible methods for minimizing noise produced during construction were indicated in section VI. C.2., pages VI-12.

Dust will also be generated during construction. Efforts to minimize air pollution have been discussed in section VI. C.1. There will also be some short-term air pollutant emissions from heavy construction vehicles.

Erosion problems could arise during site preparation of the project, which may impact the adjacent streams. Though no significant problems are anticipated, the project will conform to Federal, State, and City & County of Honolulu regulations which stipulate erosion control measures.

In an attempt to minimize harm to residents of the community, a notice of the construction would be made public and all construction activities would be restricted to non-peak hour traffic periods. The contractor will also cone-off the roadway to prevent access, if and when necessary. Therefore, travel



patterns normally undertaken would need to be altered and other routes of travel would need to be found.

The recommended alternative, since it proposes less substantial improvements, will have proportionately fewer and less significant impacts.

D. Historic and Archaeological Prevention Effects

There are no known historic or archaeological sites within the project area.<sup>34</sup> In the event that any sites or remains are uncovered, the contractor will halt work and the State Historic Preservation Officer will be notified.

E. Section 4(f) Impacts

There are no parks, recreation areas, historic sites, wildlife refuges, etc. along the project alignment or within the general vicinity. Therefore, the preparation of a Section 4(f) Evaluation is unnecessary and does not apply to this project.



V. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED AND MITIGATION MEASURES PROPOSED TO MINIMIZE IMPACT

A. Short-term Impact

1. Noise Levels. Short-term noise originating from construction activity can be mitigated by limiting construction activities to regular work hours. Other noise reduction measures include installing mufflers on all construction equipment and trucks and discouraging the "gunning" of trucks and construction equipment. There are specific State, County, and OSHA Standards and Codes which must be complied with. Compliance with these standards will effectively reduce noise levels during construction, and are included in the construction specifications.
2. Air Quality. There are several methods for reducing fugitive dust during construction. The most popular method is to frequently "water down" the disturbed area with water or oil. Other methods include erecting dust screens, good housekeeping, and working only small areas at any one time. The proposed project will also regard construction specifications and the State Department of Health, Rules and Regulations, which stipulate control measures.
3. Water Quality. Wetting down the area too frequently or heavy rainfall may result in stormwater runoff or ponding within the project boundaries. In order to avoid this problem, the contractor will need to construct temporary swales and ponding basins. The impact of construction activities on water quality can also be mitigated by conforming to strict erosion control measures, particularly those specified in applicable Federal, State, and County regulations (see section VI. C. 8).

4. Disruption of Traffic Flow. Construction activities will partially affect the normal traffic flow on Nimitz Highway and on several of the sidestreets. However, it is anticipated that motorists can utilize Dillingham Boulevard and other thoroughfares to reach their respective destinations.

B. Long-Term Impacts

1. Noise Quality. If noise complaints are significant, acoustical treatment (e.g. air conditioning, insulation, etc.) of structures along the corridor may be considered.
2. Parking Availability. Some parking spaces will be taken but this demand should be readily absorbed by surrounding areas.



VI. AN INDICATION OF WHAT OTHER INTERESTS AND CONSIDERATIONS OF GOVERNMENT POLICIES ARE THOUGHT TO OFFSET THE ADVERSE ENVIRONMENTAL EFFECTS OF THE PROPOSED ACTION

The State has endorsed the 1995 Honolulu Harbor Master Plan in which the improvement of Nimitz Highway is a critical factor. Without the improvements, traffic congestion will seriously impair the land transportation network along this corridor. Furthermore, continual congestion and the lack of action will eventually curtail industrial and commercial development of this area.

The proposed action will be consistent with the Honolulu Gateway Beautification Project which proposes to provide a comprehensive conceptual design for beautification and to maintain a safe and pleasant environment for both vehicular and pedestrian circulation within Nimitz Highway. Better access to Kewalo Basin, the Aloha Tower Plaza, and Piers 2 to 18 will be provided.

Although the consequences of the selected alternative would result in noise increases, adverse ambient air quality, and possible water quality impacts, it is felt that the overall total benefits to the existing uses and the adjacent waterfront sites justify these negative impacts.



VII. THE RELATONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The selected alternative may result in short-term adverse impacts such as increased generation of noise and fugitive dust, and disturbed traffic flow.

The long-term productivity of this project will offset these adverse impacts. The long-term productivity of this project includes the partial reduction of present and future traffic congestion and improved access to and from the Honolulu Harbor Waterfront and other sites.

Based on these considerations, and the fact that the adversity of all impacts can be minimized, it is considered that the long-term productivity of the selected alternative is beneficial for the community as well as the present and future land uses in the surrounding area.



VIII  
COMMITMENT  
OF  
RESOURCES

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VIII. ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

As in any proposed action involving construction, the selected alternative will result in the commitment of various resources which include:

- 1) Construction materials such as concrete, steel, asphalt, rock, etc., may be utilized. Once used, these materials will be utilized for Nimitz Highway for an indefinite time period.
- 2) Labor will be used. Labor for this project will be required for construction, planning, engineering design, landscaping, purchasing, and services, etc. Once utilized, this labor is irretrievable. However, labor can be compensated, thus, generating monies into the island's economy.

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IX  
PREPARERS

## IX. LIST OF PREPARERS

Below is a listing of persons who provided information for the preparation of or were primarily responsible for preparing this Draft Environmental Impact Statement (DEIS).

A. Tony D'Alessio, P.E.

Educational Background: B.C.E.

Professional Experience: 19 years in planning, design, and environmental assessment of highway and other civil engineering projects. Engineer at Parsons, Brinckerhoff, Quade, and Douglas, Inc.

Responsibility: Coordinated efforts of engineering design.

B. Stan Kawaguchi, P.E.

Educational Background: B.S.C.E., M.S.C.E.

Professional Experience: 18 years in civil, structural, and transportation engineering. Vice President at Parsons, Brinckerhoff, Quade, and Douglas, Inc.

Responsibility: Coordinated overall efforts of engineering design.

C. Taeyong M. Kim

Educational Background: B.A. Sociology, M.U.R.P. Candidate

Professional Experience: 1st year Environmental Impact Statement preparer with Environmental Communications, Inc.

Responsibility: Prepared Final EIS document.

D. Iwao Miyake, P.E.

Educational Background: Ph.D. Engineering

Professional Experience: Professor (retired) University of Hawaii at Manoa; Principal, Design Engineering, Inc. - consultants on noise and acoustical concerns.

Responsibility: Prepared Makai Boulevard Concept, Keehi I.C. to Pier 18 Project N. F-092-1 (16) Noise Study

E. Duane Morita

Educational Background: M.U.R.P., Urban and Regional Planning.

Professional Experience: 5 years work relating to Urban Planning; 2 years Environmental Impact Statement preparer with Environmental Communications, Inc.

Responsibility: Prepared Draft EIS document.

F. Julian Ng, P.E.

Educational Background: B.S.C.E.

Professional Experience: 11 years civil and traffic engineering and transportation planning. Staff engineer at Parsons, Brinckerhoff, Quade, and Douglas, Inc.

Responsibility: Assist in coordinating efforts of engineering design.

G. F. J. Rodriguez

Educational Background: B.A. Sociology/Business Administration

Professional Experience: 12 years work relating to environmental concerns and impact statements in Hawaii; President, Environmental Communications, Inc.

Responsibility: Coordinated efforts with subconsultants on technical environmental support studies; prepared the overall document.

H. Barry D. Root

Educational Background: M.A. Geography/Public Health

Professional Experience: 5 years duty with U.S. Air Force, Air Weather Service; 6 years University Geography assistant/instruction; 5 years air pollution consultant in Hawaii.

Responsibility: Prepared Air Quality Study for the Makai Boulevard Concept and Comparative Energy Analysis for the Makai Boulevard Concept.

Responsible for reviewing this document will be, Ken Myers, Area Engineer, Federal Highway Administration, U.S. Department of Transportation, Nelson Sagum, Project Engineer, Highways Division, State of Hawaii Department of Transportation and, Albert Ng, Project Manager, Highways Division, State of Hawaii Department of Transportation.

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X  
UNRESOLVED  
ISSUES

X. SUMMARY OF UNRESOLVED ISSUES

At this time, there are no unresolved issues from the standpoint of potential environmental impacts.

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XI  
APPROVALS



## XI. LIST OF NECESSARY APPROVALS

The following approvals or permits may be required for the selected proposed action prior to its construction:

- A. Community Noise Permit. This permit must be obtained from the Department of Health when anticipated noise levels are expected to exceed the noise standards set forth in Chapter 44B, Public Health Regulations, "Community Noise Control for Oahu."
- B. Building Permit. This permit is required by the City and County of Honolulu Building Department when construction work is involved that would alter any sidewalk, curb or driveway in a public right-of-way.
- C. Grubbing, Grading, and Stockpiling Permit. This permit is required by the City and County of Honolulu Department of Public Works when any type of excavation work is employed.
- D. Special Management Area Permit. The Special Management Area (SMA) represent the critical interim nearshore land management zone as designated by the City and County of Honolulu. The western portion of the project boundaries is within this SMA boundary.

The Department of Land Utilization, City and County of Honolulu, makes the initial determination for requirement. If required, an application along with a completed Negative Declaration or EIS, is filed. The Department of Land Utilization reviews the application and prepares a staff report with recommendations to the City Council. The City Council holds a public hearing on the SMA Permit, and approves or disapproves the application.

It should be recognized that an accepted EIS document is necessary to process these permits and approvals. Therefore, this EIS document is prepared to meet both Federal and State requirements.

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XII  
COMMENTS  
AND  
COORDINATION

XII. COMMENTS AND COORDINATION AND LIST OF FEDERAL AGENCIES,  
STATE AND LOCAL ENTITIES, AND CITIZENS TO WHOM THE  
PREPARATION NOTICE AND DEIS WERE SENT

A. Early Coordination

To comply with regulations regarding Early Coordination and Consultation, the State DOT has contacted and presented the project to various agencies and associations. The following is a listing of these groups and the dates when contact was made:

November 19, 1980: Presentation to Oahu Metropolitan Planning Organization.

January 22, 1981: Meeting with Highways Division.

July 16, 1981: Public Information Meeting.

September 4, 1981: Meeting with Kalihi Business Association and Kalihi-Palama Neighborhood Board No. 15.

September 16, 1981: Presentation at Kalihi-Palama Neighborhood Board No. 15.

B. Comments From Preparation Notice

In accordance with the Federal Highway Administration and NEPA procedures and the State's statute (Chapter 343, Hawaii Revised Statutes) an "EIS Preparation Notice" was submitted to the Environmental Quality Commission (EQC) for publication in its EQC Bulletin. A "Consultation Period" of 30 to 60 days commenced after the EIS Preparation Notice was officially filed (the date of the Bulletin on which the EIS Preparation Notice was first published). The Consultation Period allowed interested

agencies and organizations to make comments and to become consulting parties in the actual preparation of the EIS. As required by the Federal and State regulations, responses were sent to each agency and organization that provided substantive comments. The following are copies of the letters received and its subsequent responses.

A total of twenty five (25) letters were received in response to the EIS Preparation Notice. In most cases, the comments identified specific concerns that should be addressed in the EIS.

Table 11 identifies the agencies to whom copies of the EIS Preparation Notice were sent, the date of the comment, and the date of the response to the comment (when necessary).

The DEIS will be sent to parties from which, comments from the Preparation Notice were received.

Reduced, half-size copies of the letters received and DOT's responses to the comments are provided in the following section.

Table 12 identifies the organizations and agencies to whom the DEIS were sent.

C. Comments From Draft EIS

Pages XIV-47 to XIV-65 contain reduced sized copies of the comments and responses received during the Draft EIS review.

Table 13 identifies the organizations and agencies from which comments on the Draft EIS were received.

Table 14 lists those commenting agencies not requiring an evaluation.

TABLE 11

ORGANIZATIONS AND AGENCIES CONSULTED DURING THE EIS PREPARATION  
NOTICE

<u>ORGANIZATIONS/AGENCIES</u>	<u>Date Notice Mailed</u>	<u>Date of Comments</u>	<u>Date of Responses</u>
<u>City and County</u>			
Building Department	1/18/82	1/25/82	3/01/82
Department of Parks and Recreation	1/18/82	1/27/82	
Department of Public Works	1/18/82	1/28/82	4/02/82
Department of Land Utilization	1/18/82	2/03/82	3/12/82
Department of Transportation Services	1/18/82	2/09/82	3/15/82
Fire Department	1/18/82	2/11/82	3/18/82
Department of General Planning	1/18/82	2/19/82	3/30/82
Police Department	1/18/82	--	
<u>State</u>			
Department of Social Services and Housing	1/18/82	1/25/82	
Department of Health	1/18/82	1/28/82	
Department of Accounting and General Services	1/18/82	2/04/82	3/12/82
Water Resources Research Center, University of Hawaii at Manoa	1/18/82	2/05/82	
Department of Land and Natural Resources	1/18/82	2/09/82	3/18/82
Department of Education	1/18/82	2/11/82	3/23/82
Department of Planning and Economic Development	1/18/82	2/16/82	3/18/82
State Historic Preservation Officer, DLNR	1/18/82	--	
Environmental Center, University of Hawaii at Manoa	1/18/82	--	
Division of State Parks, Department of Land and Natural Resources	1/18/82	--	
<u>Federal</u>			
U.S. Fish and Wildlife Service	1/18/82	1/25/82	2/16/82
U.S. Geological Survey	1/18/82	--	
Federal Aviation Administration	1/18/82	2/03/82	3/15/82
U.S. Department of Housing and Urban Development	1/18/82	2/04/82	3/12/82
U.S. Army Corps of Engineers, Honolulu	1/18/82	2/10/82	3/23/82
U.S. Coast Guard	1/18/82	--	
Advisory Council on Historic Preservation	1/18/82	--	

TABLE 11  
(continued)

<u>ORGANIZATIONS/AGENCIES</u>	<u>Date Notice Mailed</u>	<u>Date of Comments</u>	<u>Date of Responses</u>
<u>Private Agencies</u>			
Oahu Development Conference	1/18/82	1/25/82	2/17/82
Hawaiian Dredging and Construction Company	1/18/82	2/11/82	3/23/82
Shell Oil Company	1/18/82	2/12/82	3/12/82
Hawaiian Electric Company	1/18/82	2/16/82	3/18/82
Hawaiian Telephone Company	1/18/82	2/16/82	3/12/82
Outdoor Circle	1/18/82	2/17/82	3/15/82
Kalihi Business Association	1/18/82	3/15/82	--
Kalihi-Palama Community Council	1/18/82	--	--
Kalihi-Palama Neighborhood Board	1/18/82	--	--
American Lung Association of Hawaii	1/18/82	--	--
Dillingham Corporation	1/18/82	--	--
Chervron USA, Inc.	1/18/82	--	--
Chamber of Commerce of Hawaii	1/18/82	--	--
Union Oil Company of California	1/18/82	--	--
Downtown Improvement Association	1/18/82	--	--
Life of the Land	1/18/82	--	--
Sierra Club	1/18/82	--	--
Shoreline Protection Alliance	1/18/82	--	--
Conservation Council	1/18/82	--	--
Hawaii Audubon Society	1/18/82	--	--
Hawaiian Historical Society	1/18/82	--	--
Matson Navigation Company	1/18/82	--	--
Nimitz Business Association	1/18/82	--	--
Kalihi Satellite	1/18/82	--	--
Kapalama Canal Committee	1/18/82	--	--
Downtown Business Council	1/18/82	--	--

BUILDING DEPARTMENT  
CITY AND COUNTY OF HONOLULU  
HONOLULU MUNICIPAL BUILDING  
430 SOUTH KING STREET  
HONOLULU, HAWAII 96813



ROY H. TANJI  
DIRECTOR AND BUILDING SUPERINTENDENT

PB 62-65

January 25, 1982

Mr. Ryokichi Higashionna, Director  
Department of Transportation  
State of Hawaii  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Mr. Higashionna:

Subject: Makai Boulevard Concept, Keehi I.C.  
to Pier 18, Project No. F-092-1(16)  
Environmental Impact Statement  
Preparation Notice

The proposed project may affect our Kalia Kai Fire  
Station.

We would like to review the design plans of the project.

Very truly yours,

ROY H. TANJI  
Director and Building Superintendent

TH:jo  
cc: J. Harada

XII-5

MAR 1 1982

HWY-PA  
2.68241

Mr. Roy H. Tanji  
Director & Building Superintendent  
City & County of Honolulu  
Building Department  
650 S. King Street  
Honolulu, Hawaii 96813

Dear Mr. Tanji:

Makai Boulevard Concept, Keehi I.C.  
to Pier 18, Project No. F-092-1(16)

Thank you for your letter of January 25, 1982 which  
stated your comments in conjunction with our EIS Prepara-  
tion Notice for this project.

Please be assured that we will inform you of the pro-  
gress of this project and of the availability of our design  
plans. We have also contacted the Fire Department for  
their comments and we intend to keep them apprised of all  
future project developments.

Very truly yours,

Ryokichi Higashionna  
Director of Transportation

NS:gm

cc: PBQD, ECI

FEB 10 1982

MAR 2 1982



**CITY AND COUNTY OF HONOLULU**

FIRE DEPARTMENT  
1455 S. BERETANIA STREET, ROOM 305  
HONOLULU, HAWAII 96814



GILLEN M. ANDERSON  
MAYOR

M. M. NONAKA  
CHIEF

GEORGE R. ARTOSH  
GOVERNOR



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

RYOKICHI HIGASHIONNA, LTD.  
DIRECTOR

DEPUTY DIRECTORS  
WAYNE J. YAMASAKI  
JAMES R. CARRAS  
JAMES B. MCCORMACK  
JONATHAN K. SHIMADA, Ph.D.

BY REPLY REFER TO  
HRY-PA  
2.68598

March 18, 1982

February 11, 1982

Mr. Ryokichi Higashionna  
State of Hawaii  
Department of Transportation  
805 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Mr. Higashionna:

Re: Makai Boulevard Concept, Keehi I.C. to  
Pier 18, Project No. F-092-1(16) Environ-  
mental Impact Statement Preparation Notice

We are very concerned with the proposed Makai Boulevard Concept, inas-  
much as it will affect some of our emergency responses in the proposed  
area.

The proposed widening of Nimitz Highway in both directions and the  
changing of the traffic pattern are some of our present concerns. This  
proposed project will affect the emergency responses of the Kalihi-Kali,  
Kalihi and Iwilei Fire Stations, which normally provide fire protection.

In closing, we would like to be informed of any future plans concerning  
this proposed Makai Boulevard Concept.

Very truly yours,

Melvin M. Nonaka,  
Fire Chief

MHI:ct/LS

Mr. Melvin M. Nonaka  
Chief, Fire Department  
City and County of Honolulu  
1455 S. Beretania Street, Room 305  
Honolulu, Hawaii 96814

Dear Mr. Nonaka:

Makai Boulevard Concept, Keehi I.C.  
to Pier 18, Project No. F-092-1(16)

Thank you for your letter of February 11, 1982 which  
commented on the EIS Preparation Notice for this project.

Please be assured that the emergency response func-  
tions of the Kalihi Kai, Kalihi, and Iwilei Fire Stations  
will be considered during the development of our project  
alternatives.

We appreciate your concern and interest, and will  
keep you apprised of the progress of this project.

Very truly yours,

Ryokichi Higashionna  
Director of Transportation

FEB 25 1982

DEPARTMENT OF GENERAL PLANNING  
**CITY AND COUNTY OF HONOLULU**

350 SOUTH KING STREET  
HONOLULU, HAWAII 96813



EILEEN R. ANDERSON  
MAKER

WILLARD T. CHOW  
CHIEF PLANNING OFFICER  
RALPH FORTMORE  
DEPUTY CHIEF PLANNING OFFICER

DGPL/82-182

February 19, 1982

Dr. Ryokichi Higashionna  
Page 2

3. The initiation of street improvements on Dillingham Boulevard rather than on Nimitz Highway as an alternative to the action being proposed. If the intent of Nimitz Highway improvements is to relieve traffic congestion, an improved Dillingham facility may bring about the desired results.
4. A statement of the project's conformance to the Primary Urban Center Development Plan, including project identification and the desired sequence for construction.

Thank you for affording us the opportunity of reviewing your preparation notice.

Sincerely,

*Ralph Kawamoto*  
RALPH KAWAMOTO  
Planner

Dear Dr. Higashionna:  
Makai Boulevard Concept, Keehi I.C. to Pier 18  
Environmental Impact Statement Preparation Notice

The preparation notice proposes two alternative actions on the Nimitz Highway section between Pier 18 and Kapalama Canal and 10 alternatives from Kapalama Canal to Middle Street. Until the final action is determined, the preparation notice is somewhat premature.

However, there are other items of interest we feel need to be discussed regardless of the improvement action finally selected. They include:

1. The relationship of this project with the Sand Island Access Road Widening Project scheduled for construction in the near future. The particular area of interest is the interchange proposals of the two projects at the junction of Sand Island Access Road and Nimitz Highway.
2. The traffic impact upon Dillingham Boulevard, a nearby parallel route which also provides motorists with an east-west travel opportunity. Higher traffic volume may result on Dillingham as motorists try to avoid the inconvenience on Nimitz during the construction phase.

APPROVED:

*W. T. Chow*

WILLARD T. CHOW

MAR 2 1982



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

March 30, 1982

RYOKICHI HIGASHIZONNA, PH.D.  
DIRECTOR

DEPUTY DIRECTORS  
WAYNE J. YAMASAKI  
JAMES R. CARRAS  
JAMES B. MCCORMACK  
JOHN HANK K. SHIMADA, PH.D.

IN REPLY REFER TO

HWY-PA  
2.68740

Mr. Ralph Kawamoto  
Page 2

HWY-PA 2.68740

Mr. Ralph Kawamoto  
Planner  
Department of General Planning  
650 South King Street  
Honolulu, Hawaii 96813

Dear Mr. Kawamoto:

Makai Boulevard Concept, Keehi I.C.  
to Pier 18, Project No. P-092-1(16)  
EIS Preparation Notice

Thank you for your letter of February 19, 1982.

We have compiled the following responses with respect to each comment as listed in your letter.

1. The Sand Island Widening project and the Sand Island Interchange have already been approved, and this project will connect to the interchange. Some design modifications to the interchange may be needed to accommodate the Nimitz Highway alternatives and consequently both projects are being closely coordinated.
2. We agree that some impact to Dillingham traffic could result if motorists try to avoid Nimitz Highway. It should also be noted that other east-west corridors exist which could be impacted by motorists trying to avoid construction on Nimitz Highway. These impacts would be temporary, of course, and would depend to a great extent on the amount of inconvenience on Nimitz Highway.

3. The Dillingham Boulevard route was reviewed by our consultant for possible use as a diversion route for Nimitz Highway traffic. Based upon screening traffic volumes, the capacity available on Dillingham Boulevard is insufficient to attract or divert Nimitz Highway traffic without modifications to Dillingham Boulevard such as those being considered for Nimitz Highway.

4. Please be assured that the EIS will address the proposed action's consistency and compliance regarding project identification and desired construction servicing, with the PUC Development Plan.

Also, for your information, several of these responses will be included or expanded upon in the project EIS.

We appreciate your concern and interest in this project and look forward to your continued support.

Very truly yours,

*Ryokichi Higashizonna*  
Ryokichi Higashizonna  
Director of Transportation

DEPARTMENT OF LAND UTILIZATION  
**CITY AND COUNTY OF HONOLULU**  
850 SOUTH KING STREET  
HONOLULU, HAWAII 96813 9 10813 933-4433



EILEEN R. ANDERSON  
MAYOR

MICHAEL M. McELROY  
DIRECTOR

ROBERT B. JONES  
DEPUTY DIRECTOR

LU1/82-326(SH)

Dr. Ryokichi Higashionna, Director  
Page 2

5. How will traffic be channelled during the course of construction? We are particularly concerned about the container traffic to and from Sand Island Access Road.
  6. Will construction occur in the evening? If so, will there be any adverse noise impacts?
- If there are any questions, please contact Sampson Har of our staff at 523-4077.

Very truly yours,

MICHAEL M. McELROY  
Director of Land Utilization

February 3, 1982

Dr. Ryokichi Higashionna, Director  
Department of Transportation  
State of Hawaii  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Dr. Higashionna:

Environmental Impact Statement Preparation Notice  
Makai Boulevard Concept, Keahi I.C. to Pler 18,  
Project No. F-092-1(16)  
Honolulu, Oahu, Hawaii

We have reviewed the above and have the following comments to offer:

1. Will all the improvements occur within the existing right-of-way, or will acquisition of adjacent lands be necessary for this project?
2. When the final design alternate for the improvement for this corridor is selected, we would like to see a schedule of all the phases involved, with a phasing plan and a tentative time frame required for the completion of the project.
3. Will any excavation or embankment be required? If so, the quantities and locations where these activities are required should be specified.  
What erosion control measures, if any, will be taken during the course of this project?
4. Plans and elevations of the specific design alternatives, as well as visual renderings of the complete project, would aid reviewers in conceptualizing the narrative portions of this document.

XII-9

FEB 18 1982



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
KAPOLAHUENI BUILDING  
HONOLULU, HAWAII 96813

RYOKICHI HIGASHIYAMA, PhD  
DIRECTOR

DEPUTY DIRECTORS  
Wayne J. Yamazaki  
James R. Capra  
James B. McCracken  
Jonathan K. Shumada, PhD

MEMBER SERVICES

HWY-PA  
2.68474

March 12, 1982

Mr. Michael M. McElroy  
Director  
Department of Land Utilization  
City & County of Honolulu  
650 South King Street  
Honolulu, Hawaii 96813

Dear Mr. McElroy:

Kakai Boulevard Concept, Keshi I. C.  
to Pic 18, Project No. F092-1(16)

We have received your comments of February 3, 1982, which addressed the EIS Preparation Notice for this project. With respect to each of your comments, we have compiled the following responses:

1. All alternatives being considered, except "no-build" will involve some land acquisition, although such acquisition is expected to be minor.
2. Where phasing of construction operations can be reasonably anticipated, this will be indicated in the project EIS.
3. Excavation and embankment are likely components of this highway improvement. Although quantities of earthwork will be indicated in the EIS, the location of cuts-and-fills will be shown only if this information is of some significance in determining a preferred alternative.

Erosion control measures will be outlined in the EIS, and these procedures will conform with City and County grading ordinances.

Mr. Michael M. McElroy  
Page 2

HWY-PA 2.68474

4. Plans and typical sections of several selected alternatives will be shown in the EIS for this project. Renderings of these alternatives will also be provided if a definite need arises.
5. The phasing of construction operations will be determined in the final design stage and consequently the actual re-routing of traffic will also be determined during this later stage. However, the EIS will propose in general terms the probable measures to maintain the existing flow of traffic.
6. Construction during the evening is not usual although for this project it could occur occasionally. A noise study is part of the normal EIS requirements, and any noise impacts during construction would be identified at that time.

We appreciate your cooperation and will be contacting you during later project phases.

Very truly yours,  
*Ryokichi Higashiyama*  
Ryokichi Higashiyama  
Director of Transportation

NS:9K

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



SILEEN R. ANDERSON  
MAYOR

GEORGE R. ARTOSE  
COMMISSIONER



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION

MAR 15 1982

RYOKICHI HIGASHIYONNA PH.D.  
DIRECTOR

DEPUTY DIRECTOR  
Wayne J. Yamazaki  
JAMES R. CURRAN  
JAMES R. MCCORMACK  
JOHN W. SHAWDA PH.D.

RYOKICHI HIGASHIYONNA  
HHY-1A  
2.68504

ROY A. PARKER  
DIRECTOR  
TEL/82-216

February 9, 1982

Honorable Ryokichi Higashiyonna, Director  
Department of Transportation  
State of Hawaii  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Dr. Higashiyonna:

Subject: Makai Boulevard Concept, Keehi I. C. to  
Pier 18, Project No. F-092-1(16), EIS  
Preparation Notice (Ref: HWY-PA2.6757D)

The EIS should assess the impact on intersecting City streets and  
CBD traffic. Mitigating measures for any adverse impact to CBD  
traffic and service to intersecting streets should also be addressed.

We would appreciate the opportunity to review any plans prior to  
implementation.

Very truly yours,

*ROY A. PARKER*  
ROY A. PARKER  
Director

Mr. Roy A. Parker  
Director  
Department of Transportation  
Services  
City and County of Honolulu  
650 South King Street  
Honolulu, Hawaii 96813

Dear Mr. Parker:

Makai Boulevard Concept, Keehi I.C.  
to Pier 18, Project No. F-092-1(16)

Thank you for your letter of February 9, 1982 which  
provided comments pursuant to the EIS Preparation Notice  
for this project.

Please be assured that the EIS will discuss the prob-  
able adverse effects to intersecting streets and to CBD  
traffic. The EIS will also address mitigating measures  
for any such impacts.

We appreciate your concern and interest in this pro-  
ject and will notify you regarding the availability of our  
preliminary plans.

Very truly yours,

*Ryokichi Higashiyonna*  
Ryokichi Higashiyonna  
Director of Transportation

NS:gm

FEB 23 1982

RYOKICHI HIGASHIONNA  
DIRECTOR

DEPUTY DIRECTOR  
Wayne J. Yamasaki  
JAMES H. CARBON  
JAMES B. MCCORMACK  
JOHNATHAN SHIMADA, PhD

1111 UNIVERSITY  
HONOLULU, HAWAII  
96813  
HY-PA  
2-68505



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
1111 UNIVERSITY STREET  
HONOLULU, HAWAII 96813

March 12, 1982

GEORGE R. ARYOSHA  
COMPTROLLER

HIDEO MURAKAMI  
COMPTROLLER  
SUITE 1111, TOWER 11A  
SEVENTH FLOOR

LETTER NO. (P) 1097.2



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

FEB 4 1982

Honorable Ryokichi Higashionna  
Director  
Department of Transportation  
State of Hawaii  
Honolulu, Hawaii

Dear Mr. Higashionna:

Subject: Makai Boulevard Concept  
Keehi I.C. to Pier 18  
Project No. F-092-1(16)  
Environmental Impact Statement  
Preparation Notice

We have reviewed the subject document and found that Alternatives C, D and I in the Kailahi Section may adversely affect Puuhale Elementary School. The first possible impact would be the reduction of the school site size below the Department of Education's (DOE) minimum standard of 6 acres. The second possible impact is that the traffic noise in the school buildings will be increased.

In order to minimize the impacts on the school, we request that other alternatives be selected for the project. We also request to be consulted with during the formulation phase of the preferred alternative for the project.

If we can provide any assistance in this matter, please have your staff contact Mr. Stanley Shin of the Public Works Division at 548-5703.

Very truly yours,

*Hideo Murakami*  
HIDEO MURAKAMI  
State Comptroller

XII-12

TO: The Honorable Hideo Murakami, Comptroller  
Department of Accounting & General Services

FROM: Director of Transportation

SUBJECT: Makai Boulevard Concept, Keehi I.C. to Pier 18,  
Project No. F-092-1(16)

Thank you for your letter of February 4, 1982, which commented on the EIS Preparation Notice for this project.

Please be assured that your recommendation will be considered in the selection of a preferred alternative for this project. It should be noted that a modification of Alternative C (Alternative CF) is being retained for further investigation and this is the only tentative proposal which would directly impact Puuhale Elementary School. As this alternative is developed, we will also incorporate measures to mitigate adverse effects to the school ground and facilities.

We intend to periodically inform you of the progress of this project and should be consulting with your staff in the near future.

*Ryokichi Higashionna*  
Ryokichi Higashionna

NS9k:jo

FEB 18 1982





STATE OF HAWAII  
DEPARTMENT OF EDUCATION  
P. O. BOX 2204  
HONOLULU, HAWAII 96810

OFFICE OF THE DEPARTMENT

February 11, 1982

MEMO TO: Honorable Ryokichi Higashionna, Director  
Department of Transportation

FROM: *Roy K. Thompson*  
Dr. Donniss H. Thompson, Superintendent  
Department of Education

SUBJECT: Makai Boulevard Concept  
Keehi I.C. to Pier 18  
Environmental Impact Statement Preparation Notice

Our review of the subject project indicates a possible adverse impact on Puuhale Elementary School from Alternatives C, D and I as discussed in the Kalihi Section. Our other concern involves the problem of noise, dust and safety for children during the construction phase of the project.

We would appreciate being kept informed as to the status of the alternatives being considered and consulted on the implementation phase so as to minimize the interruption to our school program.

Should there be any questions, please contact Mr. Howard Lau at 737-5231.

DHT:HL:mh

cc: Honolulu District  
DACS



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
MARSHALL STREET  
HONOLULU, HAWAII 96813

March 23, 1982

MEMORANDUM

TO: The Honorable Donniss Thompson, Superintendent  
Department of Education

FROM: Director of Transportation

SUBJECT: MAKAI BOULEVARD CONCEPT, KEEHI I.C.  
TO PIER 18, PROJECT NO. F-092-1(16)

Thank you for your memorandum of February 11, 1982, which addressed the EIS Preparation Notice for this project.

For your information, we are currently studying one alternative (Alternative CF) which may encroach onto the grounds of Puuhale Elementary School and the project EIS will contain a full discussion of this impact. Also, we agree that noise, safety and dust problems would likely arise during the construction stage; however, for these impacts, we can assure you that appropriate mitigation measures will be taken.

We appreciate your concern and interest and will keep you apprised of the progress of this project.

NS:9k

*Ryokichi Higashionna*  
Ryokichi Higashionna





CEUNGER ARITOSH  
MEMBER



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
898 KALANANAKU AVENUE  
HONOLULU, HAWAII 96813

March 18, 1982

DIRECTOR

DEPUTY DIRECTORS  
WAYNE J. YALASKAI  
JAMES R. COOPER  
JAMES B. COCHRAN  
JOHNATHAN L. SPILLER, Ph.D.

WHILE REFER TO  
HWY-PA  
2.68597

MEMORANDUM

TO: The Honorable Susumu Ono, Chairman  
Board of Land & Natural Resources  
Department of Land & Natural Resources

FROM: Director of Transportation

SUBJECT: MAKAHI BOULEVARD CONCEPT, KEHEI I.C.  
TO PIER 18, PROJECT NO. F-092-1(16)

Thank you for your letter of February 9, 1982 which addressed the EIS Preparation Notice for this project.

Please be assured that proper procedures will be followed concerning the location and recovery of historical and/or archaeological sites in the project area. The EIS will identify these sites and propose mitigative measures in conformance with appropriate Federal and State statutes should any of these sites be impacted.

As indicated in your letter, the project EIS will discuss the short and long-term effects on the surface water quality and recreational uses of the Honolulu Harbor and Keahi Lagoon drainage basins. Also, the EIS will examine the probable impacts to aquatic lifeforms and will propose measures to minimize any adverse effects.

We appreciate your concern and interest in the project and will be contacting you in the near future.

*Ryokichi Higashionna*  
Ryokichi Higashionna



DEPARTMENT OF PLANNING AND ECONOMIC DEVELOPMENT

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

GEORGE R. ANTONIS  
Director  
HIDEO KUNO  
Director  
FRANK SKRVARAK  
Director

GEORGE R. ANTONIS  
Director



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
809 FULMOLOKA STREET  
HONOLULU, HAWAII 96813

DEPUTY DIRECTORS  
WAYNE J. YALUSAI  
JAMES R. CURRAN  
JAMES B. MCCORMACK  
JOHN W. K. SMITH, Ph.D.

IN REPLY REFER TO:

HWY-PA  
2.68588

March 18, 1982

February 16, 1982

Ref. No. 4276

The Honorable Ryokichi Higashionna  
Director  
Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Dr. Higashionna:

Subject: Preparation Notice for the Environmental Impact Statement on the Makai Boulevard Concept, Keehi I.C. to Pier 18, Project No. F-092-1(16)

Thank you for your letter of January 18, 1982, and the descriptive document on the above project.

Since the Hawaii Coastal Zone Management (CZM) Program's statutory concerns include recreational resources, economic uses, coastal hazards and coastal ecosystems, we recommend that the EIS contain a discussion on the relevant CZM objectives and policies of Chapter 205A, Hawaii Revised Statutes. This will assist in the evaluation of the project's consistency and compliance with the Hawaii CZM program.

Thank you for the opportunity to comment on this matter.

Sincerely,  
  
Hideto Kono

cc: Office of Environmental Quality Control

MEMORANDUM

TO: The Honorable Hideto Kono, Director  
Department of Planning & Economic Development

FROM: Director of Transportation

SUBJECT: MAKAI BOULEVARD CONCEPT, KEEHI I.C.  
TO PIER 18, PROJECT NO. F-092-1(16)  
EIS PREPARATION NOTICE

Thank you for your letter of February 16, 1982.

As recommended, we will include in the EIS a discussion on the relevant CZM objectives and policies as provided in Chapter 205A, Hawaii Revised Statutes.

We appreciate your guidance in these matters and will be contacting your staff during the later phases of this project.

Ryokichi Higashionna

MAR 2 1982



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

PODED-PV

20 February 1982

Dr. R. Higashionna, Director  
Department of Transportation  
State of Hawaii  
869 Punchbowl Street  
Honolulu, HI 96813


Dear Dr. Higashionna:

Thank you for the opportunity to review the Environmental Impact Statement (EIS) Preparation Notice for the Proposed Hakaia Boulevard Concept, Middle Street to Pier 18, Honolulu, Hawaii, sent to us on 18 January 1982. Based on our review, we provide the following comments:

- a. Any work in the Kapalama Canal may require a Department of the Army permit.
- b. Most of the improvements to Himitz Highway will occur in a Zone C, or area of minimal flooding, according to the Flood Insurance Study for Oahu by the Federal Insurance Administration (FIA). One section of the highway improvements will occur in the Kalia Stream flood plain, or more specifically, in the flood fringe area of Zone A0 designation, where the average depth of flooding is 1 to 2 feet. See Inclosures 1 and 2, prepared as part of the FIA flood study.

We will be happy to comment further on the draft EIS for the project when it becomes available.

Sincerely,

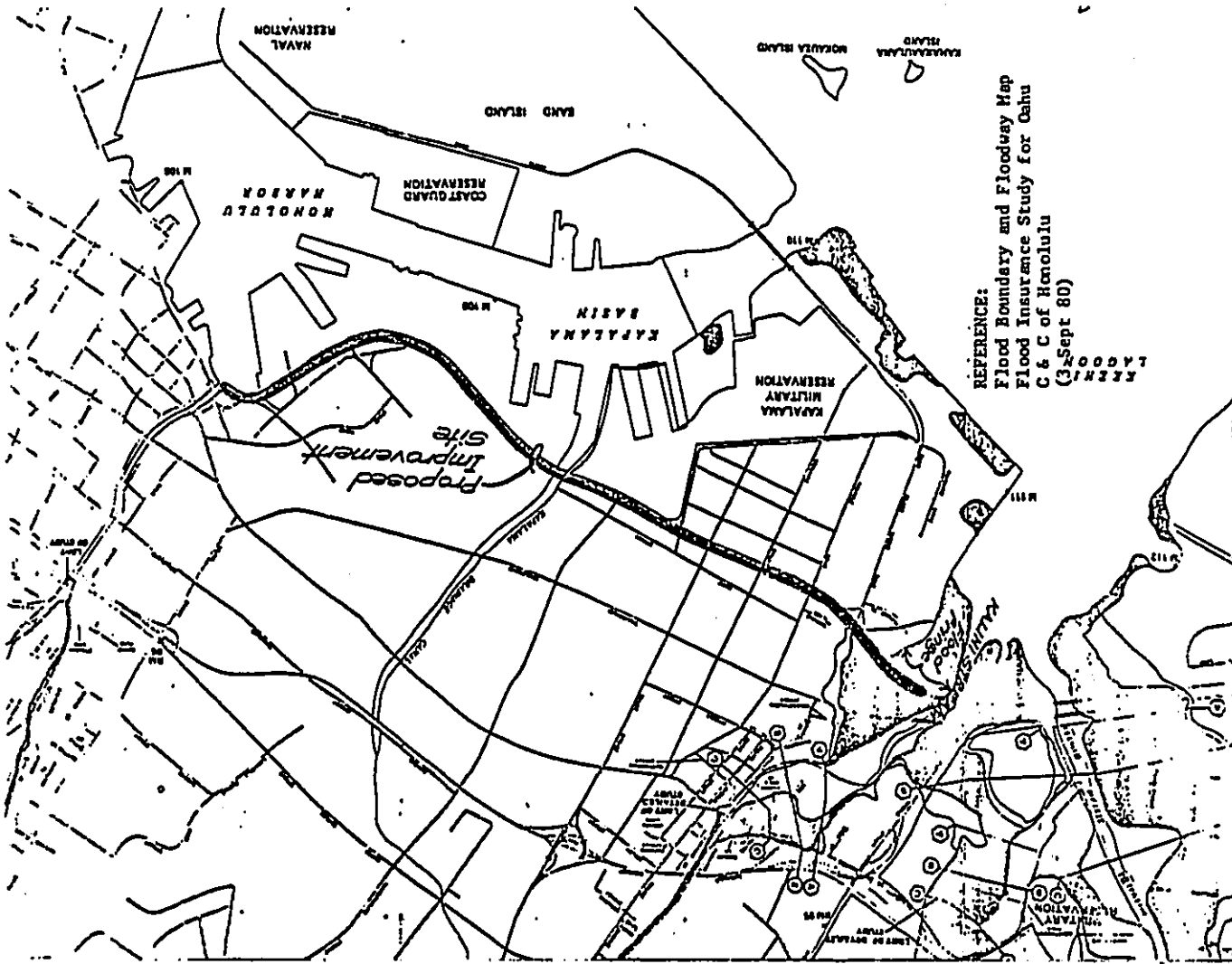
  
KISUK CHEUNG  
Chief, Engineering Division

2 Inc  
As stated

EXPLANATION

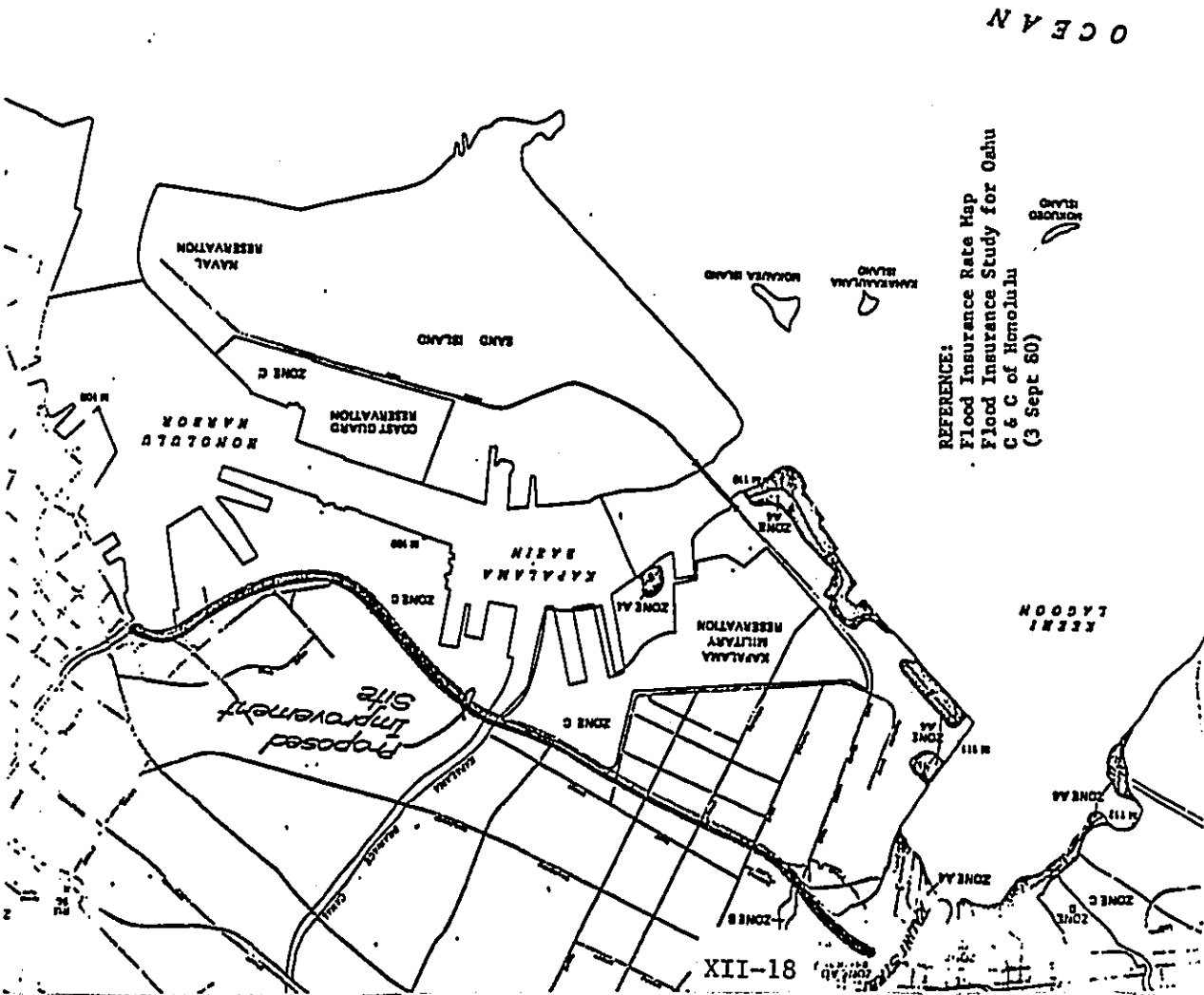
- A Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
- A0 Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
- AH Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; based flood elevations are shown, but no flood hazard factors are determined.
- A1-A30\* Areas of 100-year flood, base flood elevations and flood hazard factors determined.
- A99 Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
- B Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
- C Areas of minimal flooding. (No shading)
- D Areas of undetermined, but possible, flood hazards.
- V Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
- V1-V30\* Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.
- \* The numerals indicate the magnitude of difference between the 100-year and 10-year flood elevations. For numerals between 1-20, the difference is one half of the value; for values greater than 20, the difference is 10 less than the numerals shown. This information is used in establishing insurance rates.
- 18— 100-year tsunami or riverine elevation line, with elevation in feet above mean sea level.
- Zone boundary line

FEB 23 1982



REFERENCE:  
 Flood Boundary and Floodway Map  
 Flood Insurance Study for Oahu  
 C & C of Honolulu  
 (3 Sept 80)

Sheet 2



REFERENCE:  
 Flood Insurance Rate Map  
 Flood Insurance Study for Oahu  
 C & C of Honolulu  
 (3 Sept 80)

XII-18

1001

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

GEORGE R. ARIKISHI  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
808 KAPUNIA STREET  
HONOLULU, HAWAII 96813

March 23, 1982

DEPARTMENT OF TRANSPORTATION  
DIRECTOR

DEPUTY DIRECTORS  
Mayne J. Yasasaki  
James R. Curran  
James B. McCorrack  
Josephine Shimada PhD

WIRETELEPHONE TO  
HWY-PA  
2-68635

Mr. Kisuk Cheung  
Chief, Engineering Division  
Department of the Army  
U. S. Army Engineer District, Honolulu  
Fort Shafter, Hawaii 96858

Dear Mr. Cheung:

Makai Boulevard Concept, Keehi I.C.  
to Pier 18, Project No. F-092-1(16)  
EIS Preparation Notice

Thank you for your letter and enclosures of February 10, 1982.

Please be assured that if the construction of the proposed improvements directly impacts the Kapalama Canal, the State Department of Transportation will comply with your permit requirements and this will be indicated in the project EIS.

We appreciate receiving the information on existing flood plains located in the project area. Adverse impacts associated with flood hazards will be addressed in the EIS and considered during development of alternatives.

Your support of this project is appreciated and we look forward to contacting you again.

Very truly yours,

*Ryokichi Higashionna*  
Ryokichi Higashionna  
Director of Transportation



DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT  
HONOLULU AREA OFFICE  
300 ALA MOANA BLVD., RM. 3318, P.O. BOX 6007  
HONOLULU, HAWAII 96850  
February 4, 1982

GEORGE R. JOHNSON  
DIRECTOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
MUNICIPAL PLANS  
DIVISION OF PLANNING  
FEB 12 1982

RYOKICHI HIGASHIONNA, Ph.D.  
DIRECTOR

DEPUTY DIRECTOR  
Wayne J. Yamasaki  
JAMES R. CARROLL  
JAMES R. MACORZOK  
JOHNATHAN S. SHINGO, Ph.D.

TELEPHONE NO.  
10MY-1A  
2-66506

IN REPLY REFER TO:  
9-JSS (Johnson/  
546-2198)

Dr. Ryokichi Higashionna  
Director  
Department of Transportation  
State of Hawaii  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Dr. Higashionna:

Subject: Makai Boulevard Concept, Keehi I.C.  
to Pier 18, Project No. F-092-1(16)  
Environmental Impact Statement (EIS)  
Preparation Notice

The subject notice was reviewed for HUD concerns and issues to be addressed in the Environmental Impact Statement.

The Honolulu Area Office finds that the proposed action does not impact on any existing or proposed housing projects that have or will receive HUD assistance.

We are pleased to note that the short-term and long-term impacts on air quality and noise generated by the project will be studied in detail.

We appreciate the opportunity to comment on the Notice and we look forward to receiving a copy of the Draft EIS.

Sincerely,

*Robert K. Fukuda*  
Robert K. Fukuda  
Area Manager

Mr. Robert K. Fukuda  
Area Manager  
U. S. Department of Housing  
and Urban Development  
300 Ala Moana Boulevard, Room 3318  
Honolulu, Hawaii 96850

Dear Mr. Fukuda:

Makai Boulevard Concept, Keehi I.C.  
to Pier 18, Project No. F-092-1(16)

Thank you for your letter of February 4, 1982, which addressed the EIS Preparation Notice for this project.

We deeply appreciate your continued assistance and will keep you informed of the progress of our studies.

Very truly yours,

*Ryokichi Higashionna*  
Ryokichi Higashionna  
Director of Transportation

Respectfully,  
Ryokichi Higashionna  
Director of Transportation

FEB 18 1982

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

FEB 03 1982

Western-Pacific Region  
Air Traffic Division  
P. O. Box 92007, Worldway Pl  
Los Angeles, CA 90009



State of Hawaii  
Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Gentlemen,

Environmental Impact Statement Preparation Notice  
for the Proposed Makai Boulevard Concept, Middle  
Street to Pier 18, Project No. F-092-1(14); HWY-  
PA 2.67570.

Generally, any construction including construction equipment which exceeds  
a height of 68 feet above mean sea level at the west end of the project  
would meet the notice requirement of Part 77 of the Federal Aviation Regu-  
lations, Section 77.13(a)(2)(1). That height increases one foot in height  
for each additional 100 feet (100:1) horizontally from the nearest point  
of runway 26R at Honolulu International Airport.

With regard to Section F - Identification and Evaluation of Potential Im-  
pacts of the Preparation Notice, we suggest that a paragraph entitled,  
"Impact on Navigable Airspace" contain the following:

"All construction, including appurtenances (i.e. lighting standards,  
street markers) and construction equipment of less than an overall  
height of 163 feet above mean sea level are not anticipated to affect  
the safe and efficient use of navigable airspace for Honolulu Inter-  
national Airport."

A copy of Advisory Circular AC No. 70/7460-2G is enclosed for perusal.  
If you have any questions, please contact our Honolulu Office for Air-  
space and Obstructions at 734-6663.

*Jerry D. Luce*  
Jerry D. Luce  
Chief, Airspace and Procedures Branch

enc.

FEB 18 1982

Initiated by: AAT-240

AC NO: 70/7460-2G  
DATE: November 30, 1977



ADVISORY  
CIRCULAR

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

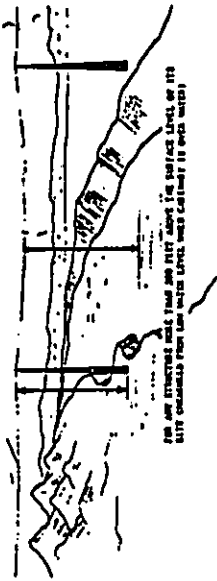
SUBJECT: PROPOSED CONSTRUCTION OR ALTERATION OF OBJECTS  
THAT MAY AFFECT THE NAVIGABLE AIRSPACE

- PURPOSE.** The purpose of this advisory circular is to advise those persons proposing to erect or alter an object that may affect the navigable airspace of the requirement to submit a notice to the Administrator of the Federal Aviation Administration (FAA). It also contains the addresses of the regional offices and availability of associated publications.
- CANCELLATION.** This cancels AC 70/7460-2F, dated January 22, 1976.
- KIND OF OBJECTS.** The notice requirement criteria apply to the proposed construction or alteration of any structure (building, tower, roadway, overhead wires and their supporting structures, etc.), including any construction equipment employed. These criteria apply to the height of overhead communications and electric transmission lines above the terrain, or water if so situated, as well as the height of their supporting structures.
- WHO MUST FILE A NOTICE.** A construction sponsor is required by regulation to submit notice to the Administrator of the FAA if his proposed construction or alteration exceeds one or more of the following conditions:
  - Greater Than 200 Feet in Height. If the proposed object would be more than 200 feet above ground level (AGL) at its location.



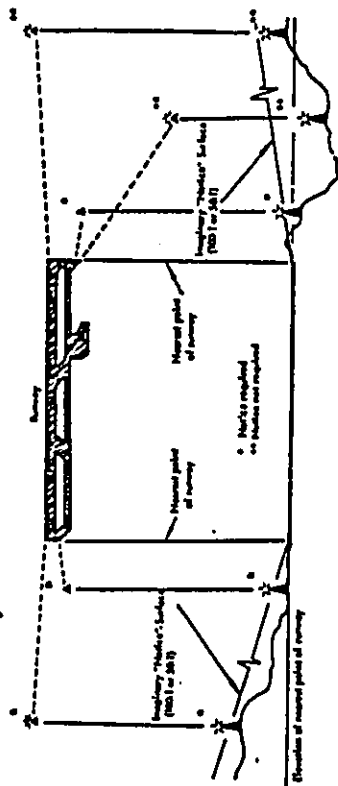
1/ Persons failing to comply with the provisions of the Federal Aviation Regulations, Part 77, may be liable to a fine of up to five hundred dollars (\$500.00) as provided for by Section 902(a) of the Federal Aviation Act of 1958, as amended.





b. Near an Airport.<sup>2/</sup>

- (1) If the proposed object would be within 20,000 feet of an airport with at least one runway more than 3,200 feet in length; and would exceed one foot in height for each 100 feet (100:1) horizontally from the nearest point of the nearest runway.



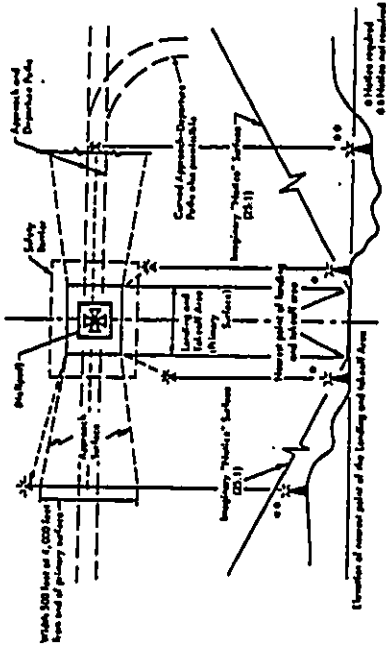
XII-22

- (2) If the proposed object would be within 10,000 feet of an airport<sup>2/</sup> having no runway more than 3,200 feet in length; and would exceed one foot in height for each 50 feet (50:1) horizontally from the nearest point of the nearest runway. (See diagram under item 4b(1))

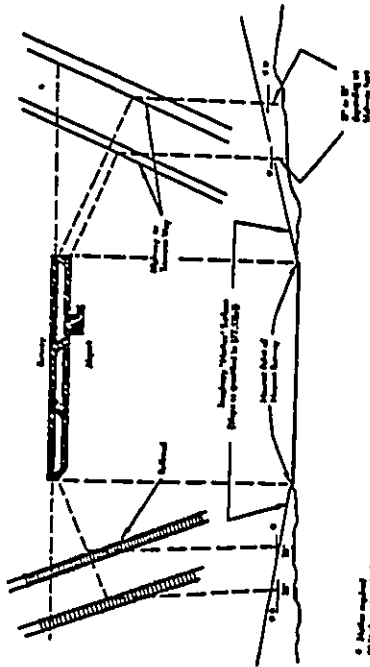
c. Near a Seaplane Base.<sup>2/</sup> If the proposed object would be near a seaplane base, apply item b(1) or (2) above as applicable.

<sup>2/</sup> To qualify, an airport, or visually marked seaplane base, must be listed in the "Airport Directory" of the current Airman's Information Manual or in either the Alaska or Pacific Airman's Guide and Chart Supplement or operated by a Federal military agency.

- d. Near a Heliport. If the proposed object would be within 5,000 feet of a heliport listed in the "Airport Directory" or operated by a Federal military agency; and would exceed one foot in height for each 25 feet (25:1), horizontally from the nearest landing and takeoff area of that heliport.



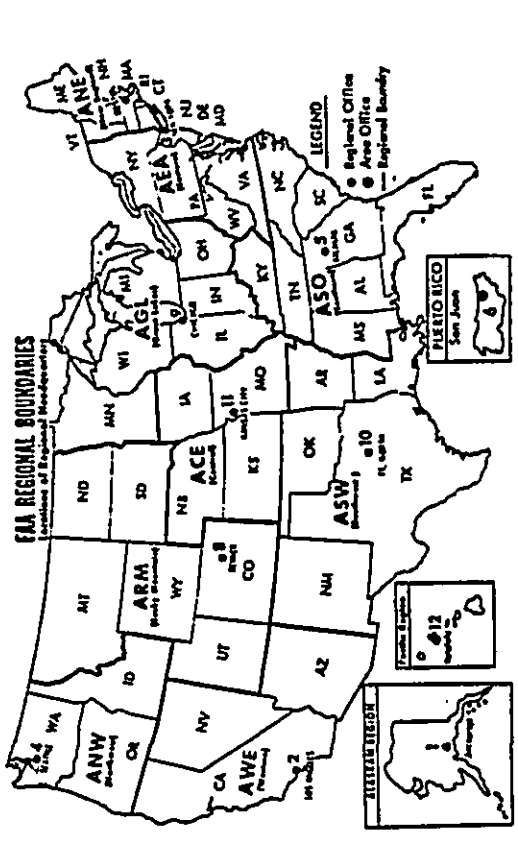
- e. Highways and Railroads. If the proposed object is a traverse way which would exceed at least one of the standards listed in Items a - d above, after its height is adjusted upward 17 feet for an Interstate Highway, 15 feet for any other public roadway, 10 feet (or the height of the highest mobile objects that would normally traverse the road) for a private road, 23 feet for a railroad, or an amount equal to the height of the highest mobile objects that would traverse a waterway or any other thoroughfare not previously mentioned.



13 01 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

7. **HOW TO NOTIFY FAA.** Notification to the FAA may be made by forwarding one completed set of FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the Chief, Air Traffic Division, at the regional office having jurisdiction over the area within which the construction or alteration will be located. In Puerto Rico, notices should be forwarded to the Chief, Air Traffic Branch, San Juan Area Office.

8. **WHERE TO FILE A NOTICE.** The geographic area of jurisdiction for each FAA office is indicated below:



ADDRESS OF REGIONAL OFFICES AND SAN JUAN AREA OFFICE

- 1 **ALASKA REGION**  
Alaska Regional Office  
415 Third Avenue  
Anchorage, AK 99501  
Tel. 907-545-4171
- 2 **WESTERN REGION**  
Western Regional Office  
15000 Aviation Boulevard  
Hawthorne, CA 90240  
P.O. Box 97007  
Van Nuys, CA 91411  
Tel. 213-338-4186
- 3 **EASTERN REGION**  
Eastern Regional Office  
JFK International Airport  
Federal Building  
Jamaica, NY 11430  
Tel. 212-975-3190
- 4  **NORTHWEST REGION**  
Northwest Regional Office  
FAA Building, Building 1714  
Seattle, WA 98108  
Tel. 206-742-2410
- 5 **NEW ENGLAND REGION**  
New England Regional Office  
17 Air England Executive Park  
Burlington, MA 01803  
Tel. 617-272-7785
- 6  **SOUTHWEST REGION**  
Southwest Regional Office  
2400 Blue Island Road  
Fort Worth, TX 76101  
Mail Address:  
P.O. Box 1489  
Fort Worth, TX 76101  
Tel. 817-324-4911, ext. 304
- 7  **CENTRAL REGION**  
Central Regional Office  
201 East 15th Street  
Kansas City, MO 64106  
Tel. 816-374-3408
- 8  **ROCKY MOUNTAIN REGION**  
Rocky Mountain Regional Office  
Aurora, CO 80010  
10415 East 21st Avenue  
Aurora, CO 80010  
Tel. 303-307-2927
- 9  **GREAT LAKES REGION**  
Great Lakes Regional Office  
3381 East Devon Avenue  
Oak Park, IL 60278  
Tel. 312-494-4500, ext. 436
- 10  **SOUTH REGION**  
South Regional Office  
2000 West 17th Street  
Fort Worth, TX 76101  
Tel. 817-324-4911, ext. 304
- 11  **SOUTHEAST REGION**  
Southeast Regional Office  
1111 East Peachtree Street  
Atlanta, GA 30309  
Tel. 404-743-7446
- 12  **SAN JUAN AREA**  
San Juan Area Office  
1000 West Ave.  
San Juan, PR 00914  
Tel. 809-771-1170

**Pacific Ocean Area**  
Honolulu ARTCC  
Office for Airspace and Obstructions  
4204 Diamond Head Road, Room 511H

f. **Object on an Airport.** If the proposed construction or alteration would be on an airport.

g. **When Requested by FAA.** The FAA may request a notice if available information indicates the proposal may exceed a standard.

5. **WHEN TO FILE A NOTICE.** The notice required under Item 4a through 8 above must be submitted.

- a. At least 30 days before:
- (1) the construction or alteration is to begin; or,
  - (2) the application for a construction permit is to be filed.

b. On or before the date the application for construction is filed with the Federal Communications Commission (FCC), if the proposed structure would be subject to FCC licensing requirements.

c. Immediately by telephone or other expeditious means, with written notification submitted within five days thereafter, if immediate construction or alteration is required as in cases involving public services, health or safety.

d. As early as possible, and preferably in the planning stage, for construction or alteration on an airport or near an air navigational facility if the proposal could possibly have an adverse effect on air traffic control operations or an air navigation facility. This includes the effect of the physical presence of structures upon the line-of-sight capability of airport air traffic control towers and the operation of air traffic control radar, as well as the interference effect of electrical signals transmitted by some structures upon ground-based or airborne air navigation equipment.

6. **WHY A NOTICE IS REQUIRED.** Notice of proposed construction or alteration is required so that the FAA may:

- a. Issue notices to airmen (NOTAMS).
- b. Depict obstructions on aeronautical charts.
- c. Recommend appropriate marking and lighting.
- d. Be made aware of potential aeronautical hazards in order to attempt to prevent or minimize them.
- e. Insure judicious use of airspace.
- f. Protect the lives and property of persons in the air and on the ground.

#### 9. ASSISTANCE.

- a. Specialists. Airspace specialists are available in the FAA area and regional offices to provide technical assistance, if required.
- b. Maps. Topographical Map Series, 7.5 minute, Quadrangle maps (Scale 1:24,000), showing the shape and elevation of the terrain and selected man-made and natural features of the earth's surface plotted to a definite scale, and geographic coordinates are available for most sections of the country from U. S. Geological Survey, Map Distribution Section, 1200 Eads Street, Arlington, Virginia 22202. A check or money order in the amount of \$1.25 for each map should accompany the order. Customers west of the Mississippi should order from: Branch of Distribution, U.S. Geological Survey, Box 25286, Federal Center, Denver, Colorado 80225.

c. Geographic Coordinates and Mean Sea Level Elevations. This information is generally obtainable from the above maps; local zoning boards and surveyors may also be able to provide this information.

10. ASSOCIATED PUBLICATIONS. The following publications contain obstruction criteria, marking and lighting standards and paint specifications:

#### a. Advisory Circulars.

- (1) AC 70/7460-1, Obstruction Marking and Lighting.

Purpose. To describe the standards for marking and lighting of structures such as buildings, chimneys, antenna towers, cooling towers, storage tanks, supporting structures of overhead wires, etc.

- (2) AC 150/5345-1, Approved Airport Lighting Equipment.

Purpose. Lists the approved airport and obstruction lighting equipment by model number and the manufacturers qualified to supply products in accordance with the indicated specification requirements.

- (3) AC 150/5340-21, Airport Miscellaneous Lighting Visual Aids.

Purpose. To provide guidance for the installation, maintenance, testing and inspection of airport visual aids and the red flashing and steady burning obstruction lighting systems. (It is anticipated that guidance for the installation and maintenance of the high intensity white obstruction lighting system will be included in the next revision.)

Availability. FAA advisory circulars are available free of charge from: Department of Transportation, Publications Section, TAD-443.1, 400 7th Street, S.W., Washington, D. C. 20590.

#### b. FAA Forms.

- (1) FAA Form 7460-1, Notice of Proposed Construction or Alteration.

Purpose. To notify the FAA of the proposed construction or alteration of an object that may interfere with the navigable airspace.

- (2) FAA Form 7460-2, Notice of Progress of Construction or Alteration.

Purpose. To notify the FAA of progress, when and as requested on the form. This form will be automatically furnished by the FAA regional office issuing the determination whenever notification is needed for charting purposes and to change affected aeronautical procedures.

Availability. FAA forms are available free of charge from all FAA regional offices. (See Item 8.)

#### c. Federal Aviation Regulation.

- (1) Federal Aviation Regulation (FAR) Part 77, "Objects Affecting the Navigable Airspace."

Purpose. To prescribe the standards for determining obstructions in navigable airspace and to set forth the requirements for notice to the FAA of proposed construction or alteration.

Availability. FAR, Part 77 is available for \$1.10 from: Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402. Make check or money order payable to Superintendent of Documents.

- d. Marking Specifications and Standards. Aviation colors and paint should conform with the following:

- (1) Federal Standard Number 595, Color Guide, Ready Mixed Paint.

(a) Orange Number 12197

(b) White Number 17875

- (2) Federal Specification TT-P-59, Aviation Surface Paint, Ready Mixed, International Orange.

11/30/77

- (3) Federal Specification TT-P-102, Aviation Surface Paint, Oil Titanium Lead-Zinc and Oil, Exterior, Ready Mixed, White and Light Tints.

Availability. FAA standards and specifications are available free of charge from: Business Service Center, General Services Administration, Washington, D. C. 20405.

e. Lighting Specifications.

- (1) Aviation Red Obstruction Lighting Systems.

(a) Color. Military Specification MIL-C-25050 Colors; Aeronautical Lights and Lighting Equipment

(b) Rotating Beacons.

1 Military Specification MIL-L-7185 Lamp Assembly, 24-inch, Rigid Drum-Type Rotating Beacon

2 FAA Specification 291 Beacon, 36-inch, Rotating Double-Ended Type

(c) Flashing Code Beacons.

FAA Specification 446 Code Beacons, 300 MM

(d) Double and Single Obstruction Lights.

1 Military Specification MIL-L-7830 Light, Navigational Boundary and Obstruction Markers.

2 FAA Advisory Circular Number 150/5345-2 Specifications for L-810 Obstruction Light

(2) High Intensity White Obstruction Lighting Systems.

FAA Advisory Circular Number 150/5345-43, FAA/DOD Specification L-856, High Intensity Obstruction Lighting Systems.

Availability. The lighting specifications listed above may be obtained free of charge from the designated facility.

11/30/77

AC 70/7460-20

Military Specifications:

Commanding Officer  
Naval Publications and Forms Center  
5801 Tabor Avenue  
Attention: NPFC-105  
Philadelphia, Pennsylvania 19120

FAA Specifications:

Chief, Airports Engineering Division, ANP-500  
Department of Transportation  
Federal Aviation Administration  
800 Independence Avenue, S.W.  
Washington, D. C. 20591

FAA Advisory Circulars:

Department of Transportation  
Publications Section, TAD-443.1  
400 7th Street, S.W.  
Washington, D. C. 20590

11. HOW TO OBTAIN ADDITIONAL COPIES OF THIS ADVISORY CIRCULAR.

- a. AC 70/7460-20, Proposed Construction or Alteration That May Affect the Navigable Airspace, dated 11/30/77.
- b. Identify the publication by its full title as in a. above and order from: Department of Transportation, Publications Section, TAD-443-1, 400 7th Street, S.W., Washington, D.C. 20590. FAA employees obtain copies through normal distribution system.
- c. Payment. There is no charge for this publication.

*Raymond G. Belanger*

RAYMOND G. BELANGER  
Director, Air Traffic Service

GEORGE R. ARYOSH  
COMPTROLLER



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION

1001 KALANOAU DRIVE  
HONOLULU, HAWAII 96813

MAR 15 1952

RYOKUJI HIGASHIMURA, Ph.D.  
DIRECTOR

DEPUTY DIRECTORS  
Wayne J. Yamasaki  
James R. Cairns  
James B. McCorkick  
Jonathan S. Shalada, Ph.D.

PLEASE REFER TO

HRV-27  
2-68455

Mr. Jerry D. Luce, Chief  
Airspace and Procedures Branch  
Department of Transportation  
Federal Aviation Agency  
Western-Pacific Region  
Air Traffic Division  
P. O. Box 92007, Worldway Postal Center  
Los Angeles, California 90809

Dear Mr. Luce:

Maka'i Boulevard Concept, Keel I.C.  
to Pier 10, Project No. F-052-1(16)

Thank you for your letter and enclosure of  
February 3, 1952, which were submitted pursuant to the  
LIS Interpretation Notice for this project.

Please be assured that we will comply with the  
notice requirement of Part 77 of the Federal Avia-  
tion Regulations, Section 77.13(a)(2)(f), should  
any construction equipment exceed your height  
limitations.

We sincerely appreciate your assistance and look  
forward to contacting you again.

Very truly yours,  
*Shunichi Higashimura*  
Shunichi Higashimura  
Director of Transportation

MS:sk





United States Department of the Interior

FISH AND WILDLIFE SERVICE  
300 ALA MOANA BOULEVARD  
P.O. BOX 50187  
HONOLULU, HAWAII 96850

RECEIVED  
ES  
Room 6307  
JAN 25 1982

Mr. Ryokichi Higashionna  
Director of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Re: EIS Preparation Notice  
Makai Boulevard Concept -  
Project No. P-092-1(16)  
Honolulu, Hawaii

Dear Mr. Higashionna:

We have reviewed the subject EIS Preparation Notice, dated January 18, 1982, and offer the following comments.

The project as described will have no adverse impact on significant terrestrial wildlife resources. It is possible that several of the alternatives could have an adverse impact on the water quality and aquatic biota of Keahi Lagoon and Honolulu Harbor; therefore, we recommend that this subject be addressed in the Environmental Impact Statement.

We appreciate this opportunity to comment.

Sincerely yours,

*Derral Herbst*

Derral Herbst  
Acting Project Leader  
Office of Environmental Services

cc: NIFS  
HDF6G  
EPA, San Francisco



Save Energy and You Serve America!

FEB 2 1982

GEORGE R. ARTIOS  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
MAR 16 1982  
PMS J 6 1982

RYOKICHI HIGASHIONNA Ph.D.  
DIRECTOR

DEPUTY DIRECTORS  
Wayne J. Yamasaki  
JAMES R. CURRAN  
JAMES B. MCCORMACK  
JONATHAN K. SELUDA Ph.D.

WIRYUWIRIATO

HNY-PA  
2.66651

Mr. Derral Herbst  
Office of Environmental Services  
U.S. Department of the Interior  
Fish & Wildlife Service  
300 Ala Moana Boulevard  
Honolulu, Hawaii 96850

Dear Mr. Herbst:

Makai Boulevard Concept, Keahi I.C.  
to Pier 16, Project No. P-092-1(16)  
EIS Preparation Notice

Thank you for your letter of January 25, 1982 which commented on the EIS Preparation Notice for the proposed Makai Boulevard Concept. For your information, we have attached an article from a State Department of Health Publication, "Water Quality Segment Criterion Document", which describes the water pollution of Honolulu Harbor and Keahi Lagoon. Despite its present level of pollution and contrary to the Preparation Notice, the waters of these coastal areas are in basic compliance with the Class B classification.

Nevertheless, please be assured that the probable impacts on the water quality and aquatic biota of Honolulu Harbor and Keahi Lagoon will be discussed in the project EIS.

We sincerely appreciate your cooperative efforts in the development of this project.

Very truly yours,  
*Ryokichi Higashionna*  
Ryokichi Higashionna  
Director of Transportation

NR:197

Enclosure

cc: ECI, PRQP

## HONOLULU HARBOR

Honolulu Harbor (Figure 6) is located on the south shore of Oahu, and is the only commercial deepwater harbor on the island. Due to its location in the Pacific, Honolulu Harbor has become our important port of call. Besides the normal port services and businesses, Honolulu Harbor is a Foreign Trade Zone (FTZ), Headquarters 14th Coast Guard District, and houses the University of Hawaii Marine Center. All types of goods ranging from pineapple, cattle, automobiles to petroleum products enter the harbor. Such diverse commodities handling has had a direct effect on the water quality of the harbor.

Historically, Honolulu Harbor was just that portion fronting Nuuanu Stream. The freshwater flow of Nuuanu Stream formed a natural channel in the reef leading out into Mamala Bay. Successive dredging efforts starting in the 1850's have increased the size and depth of the harbor. Later, Kapalama Basin fronting Kapalama Canal was joined to the harbor with the dredging of the shallow reef between them. During this time, Sand Island was created with the dredged fill, to further protect the harbor from surges. Sand Island subsequently was connected to the mainland at its NW corner. Later, a channel was dredged at its connection to improve circulation of the harbor and a bascule bridge now connects the island with the mainland.

As mentioned above, both Nuuanu Stream and Kapalama Canal enter the harbor. Nuuanu Stream has its head waters in the Koolau Range, flowing past residential and commercial areas. Average flow at the 630 ft. level is about 5 mgd, while the maximum discharge in 1979 was about 314 mgd (U.S.G.S. 1980). Kapalama Canal collects stream flow from the Kapalama Stream and runoff from the Kam Heights and the Palama area. Additional wastewater from Del Monte and Dole Corporation enters into the canal. Canal flow at a tidal dam prior to the wastewater discharge is about 6.2 mgd and about 14.6 in the discharge ditch, giving a total flow into a canal of about 20.8 mgd (Young, et al., 1972).

The Hawaiian Electric Power Plant pumps harbor water into their plant for cooling and discharges the water back into the harbor. Maximum daily flow is about 304 mgd for the plant located on the NE shore of the harbor.

Several fish kills have been reported in the Kapalama Canal (Cox and Gordon 1970). The largest occurring in 1985 where our estimated 100,000 fish died. The most recent reported fish kill occurred in May 1980 where an estimated 100-150 dead fish were observed.

Circulation inside the harbor as indicated by Bathen (1978) shows a straight flush cycle with flood waters entering both entrances of the harbor and receding also through both entrances. The net flow is always out of the harbor indicating volume of water entering the harbor from Nuuanu Stream and Kapalama Canal is significant.

### Water Quality

Historically, the waters of Honolulu Harbor have been noted for its unfavorable conditions. Keller et al. (1920) describes stagnant and polluted conditions that indicated poor tidal and stream flow circulation and flushing. Metcalf and Eddy (1944) indicated high bacterial concentration in the waters of Honolulu Harbor. With the opening of the western end of Honolulu Harbor in the 1950's, circulation has improved. Where previously water remained in the harbor for indefinite periods, the residence time of the water under present conditions was put at six hours by Baske and McCain (1972).

Although creation of a western approach to Honolulu Harbor did improve its circulation and water quality, there still exist problem areas. Most notable is the influence of the Kapalama Canal, the drainage ditch carrying wastewater from Dole and Del Monte Corporation, and the water of Honolulu Harbor.

Studies by Ultramar (1968) and Young et al. (1972) indicated low levels of D.O. and pH. At times, the D.O. was reported as 0.0 mg/l and the pH as low as 5.30. High levels of total phosphorus, non-filterable residue, and fecal coliform were noted also. At times, fecal coliform concentrations reached astronomical numbers of 227X106/100 ml (Ultramar 1968). While Young's (1972) result for fecal coliform of 14X106/100 ml is considerably lower, it still exceeds the water quality standards.

The same study by Ultramar (1968) noted low levels of D.O. in violation of water quality standards at the confluence of Nuuanu Stream and Honolulu Harbor. However, fecal coliform, pH, and total phosphorus were all within the water quality standards.

Data from the DOH (Table 10) at pier 11 show exceedance of the water quality standards for total Kjeldahl nitrogen, total phosphorus, and turbidity. Among the causes for the elevated values are storm drains and runoff from the surrounding city proper and nonpoint sources from harbor operations.

The harbor is also receiving waters for eight point discharges, which are listed in Table 11. Presently with the exception of Anuenue Fisheries, only thermal and storm runoff is being discharged into the harbor. Bland wastes of Dole and Del Monte previously discharged with thermal waters are currently being processed through the new Sand Island Treatment Plant. This in effect considerably reduces the nutrient and BOD loadings into the Kapalama sector of Honolulu Harbor.

Admittedly, the segment designation is based on dated information. Until further studies on remaining non-point sources can be made, the full effects of the abated action cannot be determined. Till then, the designation of being a water quality segment will stand.

TABLE 10  
WATER QUALITY SUMMARY  
HONOLULU HARBOR (PIER 11)  
January, 1973 - October, 1975

Parameter	Number of Values	Mean	Median	Number of Violations	Percent Violation	Minimum Violation	Mean Violation	Maximum Violation	Maximum Criteria
Ammonia Nitrogen (ug/l)	0	0	0	0	0	0	0	0	15.0
Nitrate-Nitrite-N (ug/l)	0	0	0	0	0	0	0	0	25.0
Total Kjeldahl-N (ug/l)	35	188.0	200.0	4	11	370.0	410.0	450.0	350.0
Ortho-Phosphate (ug/l)	0	0	0	0	0	0	0	0	17.0
Total Phosphorus (ug/l)	35	29.3	20.0	1	3	308.0	308.0	308.0	60.0
Turbidity (NTU)	34	1.880	1.550	17	50	1.600	2.771	8.000	1.500
Suspended Solids (ug/l)	0	0	0	0	0	0	0	0	35,000
Dissolved Oxygen (mg/l)	35	6.271	6.200	0	0	0	0	0	-



KEEHI LAGOON

TABLE 11  
POINT DISCHARGES INTO HONOLULU HARBOR

Discharge	Type of Discharge	Flow mgd	Permit No.
Hawaiian Electric Co.	Industrial: thermal water	304.1	0000027
Dole Cannery	Industrial: thermal water	3.5	0000043
Del Monte Cannery	Industrial: thermal water	2.6	0000051
Gasco Inc.	Industrial: thermal water	0.8	0000035
Shell Oil			
Discharge Serial No. 001	Industrial: thermal storm water runoff	0.003	0000582
Discharge Serial No. 002	Industrial: thermal storm water runoff	0.020	0000582
Dillingham Corporation Drydock	Industrial: wash water	1.0	0020753
Pacific Resources Terminal	Industrial: storm water	Emergency Discharge Only	0000663
Anuenue Fisheries Research Center	Industrial: aquatic water	150,000 gpd.	0000370

Keehi Lagoon is the largest lagoon in the State. Its shoreline has undergone drastic changes since 1917, to the extent that the shoreline is nearly all man made. Most of the changes were due to the construction of the Honolulu International Airport and recently completed reef runway. During World War II, the U. S. Navy dredged three intersecting seaplane channels to form a triangularly shaped basin.

Presently, light industries, businesses, parks, and harbor facilities line the shoreline. On the NE shore of the lagoon is the Keehi Small Boat Harbor, Amfac Marina and drydock, and light industrial baseyards. The NW shore is for the main part open filled areas, except for a park located on the extreme northern portion.

The lagoon is presently used for bait fishing, crabbing, water skiing, and to some extent, recreational fishing. By far, the most intense use is boating activity. The two public boat ramps of the Keehi Small Boat Harbor receive intense use during weekends and holidays. A boat washing facility is part of the harbor facilities.

The perennial streams enter into Keehi Lagoon at the northern end. Moanalua Stream is the larger of the two streams with maximum 1979 discharge of 616.4 mgd as compared to 565.0 mgd for Kalihi Stream. However, actual discharge for these two streams far exceeds these numbers. The stream gauge stations are located at considerable distances above feeder drains and ditches of the Mapunapuna Industrial area which contributes considerable amounts of stormwater runoff. This runoff from the Mapunapuna Industrial area has a major influence on the quality of the stream waters entering the lagoon. Additionally, a large drainage ditch bordering the northern perimeter of the Honolulu International Airport contributes runoff from the airport industrial area.

Current studies by Bathen (1978) indicate the flood waters enter Keehi Lagoon through the channel entrances and follow the seaplane runway around the center reef. Ebb flow is just the opposite with a very significant flow coming out of Honolulu Harbor. This flow follows along the southern seaplane runway and out through the

channel along the NE end of the reef runway. The current in the main channel always appears to be flooding, while the channel just east of the reef runway appears to be ebbing.

#### Water Quality

Water quality data for Keehi Lagoon are shown in Table 13. Among the most significant violations are that of phosphorus turbidity and suspended solids. Almost all of the shoreline around the lagoon is man made and the reefs in the lagoon were dredged during World War II to form a triangular basin. Although construction of the reef runway closed off the SW channel to Mamala Bay, water quality in general has reportedly improved. There still remain non-point sources and runoff from Moanalua and Keolu Streams which contribute considerably to the problem, however. This area of the lagoon is where quality characteristics are the poorest.

There is also boating activity in the lagoon that will constantly stir up the accumulated silt and dredging residuals. The current system recirculates the suspended matters within the lagoon. That same current system brings into the lagoon waters from Honolulu Harbors, waters whose quality also exceeds the standards.

TABLE 13  
WATER QUALITY SUMMARY  
KEEHI LAGOON  
January, 1973 - July, 1980

	Ammonia Nitrogen (ug/l)	Nitrate- Nitrite-N (ug/l)	Total Kjeldahl-N (ug/l)	Ortho- Phosphate (ug/l)	Total Phosphorus (ug/l)	Turbidity (NTU)	Suspended Solids (ug/l)	Dissolved Oxygen (mg/l)
NUMBER OF VALUES	0	0	54	5	54	51	6	53
MEAN	0	0	175.0	18.2	41.2	17.331	106,670	6.358
MEDIAN	0	0	100.0	12.0	26.0	3.400	81,500	6.300
NUMBER OF VIOLATIONS	0	0	1	2	5	45	4	0
PERCENT VIOLATION	0	0	2	40	9	88	67	0
MINIMUM VIOLATION	0	0	450.0	21.0	64.0	1.600	52,000	0
MEAN VIOLATION	0	0	450.0	29.5	185.0	19.1549	145,500	0
MAXIMUM VIOLATION	0	0	450.0	38.0	344.0	500.000	223,000	0
MAXIMUM CRITERIA	15.0	25.0	350.0	17.0	60.0	1.500	35,000	-

HAWAIIAN ELECTRIC COMPANY, INC.

Dr. Ryokichi Higashionna  
February 16, 1982  
Page Two

HAWAIIAN ELECTRIC COMPANY, INC.

Box 2750 / Honolulu, Hawaii / 96840

February 16, 1982

ENV 2-1  
HW/G

EDWARD L. O'CONNELL, P.E.  
MANAGER, ENVIRONMENTAL DEPARTMENT

Dr. Ryokichi Higashionna  
Director of Transportation  
State of Hawaii  
Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Dr. Higashionna:

Subject: Makai Boulevard Concept (Nimitz Boulevard, Keehi Interchange to Pier 18), Project No. F-092-1(16).  
Summary of Potential Effects on Hawaiian Electric Company

We have reviewed the attached EIS Preparation Notice for the proposed Makai Boulevard Concept and have the following comments:

WILEI SECTION (Pier 18 to Kapalama Canal)

Alternative A - No effect.

Alternative B -

Item C - "Improve super-elevation of outbound lane in curve at Ewa end.....of.....median."

Comments: HECO has 6" diameter fuel oil pipe in the vicinity. However, it is located along the mauka edge of the medial strip, is buried roughly 4' to 5' below grade and would be in the high side of the "super" since curve is to the right (onbound).

All other items, a thru G, should have little, if any, effect on our facilities.

KALIHI SECTION (Kapalama Canal to Middle Street)

Alternative A - No effect.

Alternative B - Intersection improvements, minor repairs, etc.

Comments: Negligible effect - maybe a few poles to be relocated.

Alternative C - Adding additional townbound lane.

Comments: Negligible effect.

Alternative D - Widening - adds 3 lanes, 2 townbound and one outbound.

Comments: This would probably require minor road realignment that could cause HECO to relocate a few poles near the Middle Street intersection and between Waikamilo and Kapalama Canal.

Alternative E - Restricting left turns.

Comments: No effect.

Alternative F - Adding contraflow (HO V) to Alternative E.

Comments: No effect.

Alternative G - Schematic - similar traffic movements at locations.

Comments: No effect.

Alternative H - Overpass - underpass at Kalihi and Nimitz; Hart and Kalani Streets; one way between Mokauea and Kalihi.

Comments: By elevating Kalihi Street (overpass) HECO's overhead line crossing Nimitz may need additional clearance.

Additionally, if Mokauea and Kalani Streets are upgraded, our pole lines (2 on Kalani and 1 on Hart) might have to be moved.

Alternative I - Grade separation: 2 lanes in each direction below grade from Puuhale Road to Kalihi Street; 2 lanes townbound above grade from Libby to Kapalama Canal.

Comments: Only apparent effect is that lines crossing Nimitz at Waikamilo, and Nimitz and Libby would have to be raised for clearance.

FEB 25 1982

HAWAIIAN ELECTRIC COMPANY, INC.

Dr. Ryokichi Higashionna  
February 16, 1982  
Page Three

Alternative J - Overhead 4-lane viaduct from Middle to Kapalama Canal. Ground level will have 2 lanes in each direction, etc.

Comments: Probably mandates undergrounding existing overhead lines crossing on Puuhale, Mokauea, Kalihi, Libby and Waialeale.

Alternative K - Same as Alternative J except for traffic pattern on viaduct.

Comments: Same as Alternative J.

Thank you for letting us comment on this project.

Sincerely,



Richard L. O'Connell  
Manager, Environmental Department

JFB:cal

GEORGE R. ARYOSH  
(212) 444-1111



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
481 PUNOHONO STREET  
HONOLULU, HAWAII 96813

March 18, 1982

DIRECTOR

DEPUTY DIRECTORS  
WAYNE I. YAMASAKI  
JAMES R. CARRAS  
JAMES R. MCCORMACK  
JONATHAN K. SHIMADA, Ph.D.

IF REPLY REFER TO:  
HWY-PA  
2.68587

Mr. Richard L. O'Connell  
Manager, Environmental Department  
Hawaiian Electric Company, Inc.  
P. O. Box 2750  
Honolulu, Hawaii 96840

Dear Mr. O'Connell:

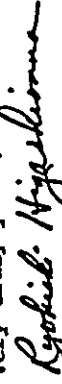
Makai Boulevard Concept, Keehi I.C.  
to Pier 18, Project No. F-092-1(16)  
EIS Preparation Notice

Thank you for your letter of February 16, 1982.

We are especially appreciative of the information contained in your letter which will be helpful during this stage of our project. Please be assured that any serious adverse impacts to your facilities will be indicated in the project EIS.

We look forward to contacting you again.

Very truly yours,



Ryokichi Higashionna  
Director of Transportation

**HAWAIIAN TELEPHONE**  
**GTS**

February 16, 1982

Mr. Ryokichi Higashionna  
Director of Transportation  
State of Hawaii  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Mr. Higashionna:

Environmental Impact Statement Preparation Notice for the  
Proposed Makai Boulevard Concept, Keehi I.C. to Pier 18  
Project No. Y-092-1(16)

We have reviewed the subject EIS Preparation Notice and find that the proposed improvements of Nimitz Highway between Middle Street and Pier 18 will have no significant effect upon our existing facilities or our ability to maintain communication services during construction.

In the area designated as the "Kalihii Section", between Middle Street and the Kapalama Canal, existing Hawaiian Telephone Company and Military facilities extend underground along the makai side of the tombound lanes. There are also existing underground crossings at the Mokuaves Street and Kalihi Street intersections. In the area designated as the "Iwilei Section", between Kapalama Canal and Pier 18, there exist Hawaiian Telephone Company aerial and underground facilities on the makai side of the tombound lane from the Canal to the Pacific Street intersection. There are also aerial crossings at the various locations along this route serving customers on the mauka side of the easa bound lanes. From Pacific Street to Pier 18, there are existing aerial and underground facilities along the mauka side of the easa bound lanes with crossings to serve subscribers on the makai side of the highway.

Whatever construction, if any, that is to be performed by Hawaiian Telephone Company depends upon the State's selection from the various alternatives outlined in your Preparation Notice dated January 18, 1982.

We appreciate the opportunity to comment on this proposed improvement project. If there are any further questions on this matter, please contact Mr. K. Yoshihara at 836-6122.

Sincerely,

*G. Kaneko*  
G. Kaneko  
Oahu Engineering & Construction  
Manager

MAR 2 1982

PO BOX 2200 • HONOLULU, HAWAII 96841 • TELEPHONE (808) 537-7111 • CABLE: TELHAWAII

GEORGE R. ARYTESA  
DIRECTOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION

MAR 1 2 1982

RYOKICHI HIGASHIONNA  
DIRECTOR

DEPUTY DIRECTORS  
Wayne J. Yamabaki  
JAMES R. CARRAS  
JAMES R. MATTIACK  
JOHNATHAN K. SHIMADA

REPLY TO: 100-1000

HWY-22  
2.66514

Mr. G. Kaneko, Manager  
Oahu Engineering & Construction  
Lakawiki Telephone Company  
P. O. Box 2200  
Honolulu, Hawaii 96841

Dear Mr. Kaneko:

Makai Boulevard Concept, Keehi I.C.  
to Pier 18, Project No. Y-092-1(16)

Thank you for your letter of February 16, 1982 which addressed the EIS Preparation Notice for this project.

Please be assured that the EIS will indicate adverse impacts to your facilities which may arise during construction.

We sincerely appreciate your assistance during this phase of our project.

Very truly yours,

*Ryokichi Higashionna*  
Ryokichi Higashionna  
Director of Transportation

NS:gm



**Hawaiian Dredging & Construction Company**

February 11, 1982

Hawaiian Dredging & Construction Company

Mr. Ryokichi Higashionna, Ph.D.  
February 11, 1982  
Page 2

Mr. Ryokichi Higashionna, Ph.D.  
Director  
State of Hawaii  
Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Subject: Comments on Proposed Nimitz Highway EIS

Dear Mr. Higashionna:

As requested, we are offering the following comments for your consideration:


- 1) Regards the Iwilei section, Alternative "B" seems to be the only solution. To do nothing will create a traffic mess in the year 2002 as well as additional problems in constructing relief measures due to the added congestion. Of course construction costs and public safety will be worsened with time.
- 2) Regards the Kalihi section, we feel that Alternative "j" seems to be the best solution. An overhead 4-lane viaduct from Middle Street to Kapalema would efficiently move traffic that is destined for farther destinations such as Waikiki. This area is also not a very scenic area that would be missed by the thru-Viaduct traffic. The Viaduct itself will not obstruct any views because of the business nature of this area. The Viaduct will also tie traffic nicely to the Keehi Interchange and the proposed Sand Island Parkway Interchange. Also if the Viaduct had planters designed into the scheme, it would enhance the area. Local traffic would also flow more smoothly on the under Viaduct roads. Public safety as well as the bikers would be better taken care of with the thru traffic on the Viaduct.

In regards to both the Kalihi and Iwilei schemes, whatever alternative that is chosen should address the impact on the businesses along the route. Measures must also be planned to alleviate problems caused to the businesses during construction.

In closing, we would like to reiterate that to do nothing would be a real disservice to the City of Honolulu and that any of the other alternatives, but particularly the ones we have mentioned, will really enhance the traffic conditions along the length and surrounding areas of Nimitz Highway.

Very truly yours,

HAWAIIAN DREDGING & CONSTRUCTION COMPANY

  
S. H. Osada  
Division Manager  
Heavy Engineering

SHO:mp

FEB 23 1982

HIKOKI KANAKA HAWAII  
DIRECTOR  
WYOMING  
Mayne J. Yamasaki  
JAMES R. CURRAN  
JAMES H. CONNOR  
KONATIANKI SAKURA P.H.D.

WIRIYIYIYI IO  
HWY-PA  
2.68632



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
MAHUKONA SIREI  
KONOLUHU HAWAII

March 23, 1982

GEORGE H. ARMITAGE  
CHAIRMAN

Mr. S. H. Osada  
Division Manager, Heavy Engineering  
Hawaiian Dredging and Construction  
Company  
P. O. Box 4088  
Honolulu, Hawaii 96813

Dear Mr. Osada:

Makai Boulevard Concept, Keehi I.C.  
to Pier 18, Project No. F-092-1(16)  
EIS Preparation Notice

Thank you for your letter of February 11, 1982.

Please be assured that your recommendations will be considered throughout our study and during the selection of a preferred alternative. Also, all potential impacts, including short- and long-term effects on businesses, will be addressed in the EIS.

We appreciate your concern and interest in this project and look forward to contacting you again.

Very truly yours,  
*Ryokichi Higashimura*  
Ryokichi Higashimura  
Director of Transportation

# KALIHI BUSINESS ASSOCIATION

P. O. BOX 17729 • HONOLULU, HAWAII 96817

GEORGE R. ARNTSEN  
CHAIRMAN



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

RYOKICHI HIGASHIONNA, Ph.D.  
DIRECTOR

DEPUTY DIRECTORS  
WAYNE J. YAMAGUCHI  
JAMES R. CARROLL  
JAMES B. ACCORACCIO  
JOHN HARTLEY SHIMADA, Ph.D.

IN REPLY REFER TO:  
HWY-29  
2-68778

PRESIDENT  
Eddie K. Fujino  
1st VICE PRESIDENT  
Allen Miyakado  
2nd VICE PRESIDENT  
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March 15, 1982

Mr. Ryokichi Higashionna  
Director of Transportation  
Department of Transportation, State of Hawaii  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Mr. Higashionna:

The Kalihi Business Association would like to provide the following input to your Project No. F-092-1 (16) referred to as the Hakai Boulevard Concept, Keeki I. C. to Pier 18:

- 1) That the various alternative proposals consider keeping Puuhale Street opened at the Hakai Nimitz Highway intersection. At the minimum, we would like to see at least a right turn onto Nimitz be allowed. We feel that closing of the Nimitz connection will provide undue hardship for the properties located on Puuhale Road between Nimitz Highway and Auiki Street.
- 2) That a right-of-way be considered connecting Waiakamilo Road Hakai of Nimitz Highway with Sand Island Access Road just before the bescule bridge. This would lighten the traffic on Sand Island Access Road and keep the noise and dust levels down for businesses in that area.

Your considerations to our proposals are appreciated. If there are any questions or should you need additional information, please do not hesitate to contact us.

Sincerely,

*Allen Miyakado*

A. H. Miyakado  
First Vice President

AMH/jr

Mr. A. H. Miyakado  
First Vice President  
Kalihi Business Association  
P. O. Box 17729  
Honolulu, Hawaii 96817

Dear Mr. Miyakado:

Makai Boulevard Concept, Keeki I.C.  
to Pier 18, Project No. F-092-1(16)

Thank you for your letter of March 15, 1982.

Our responses to your comments follow:

1. The proposed Sand Island Interchange ramp between the Sand Island Access Road and Nimitz Highway prevents providing a right turn at Puuhale Road. However, properties between Nimitz Highway and Auiki Street will be able to make the turns at Mokauea Street and Sand Island Access Road.
2. Extending Waiakamilo Road was briefly considered as an alternative to the Sand Island Access Road improvement project. However, this alternative was dropped since the Army property was not available to us.

We trust we have adequately addressed your concerns. Please contact us should you have any questions.

Very truly yours,

*Ryokichi Higashionna*

Ryokichi Higashionna  
Director of Transportation

MAR 23 1982





# OAHU DEVELOPMENT CONFERENCE

141 MERCHANT STREET - SUITE 313 - HONOLULU, HAWAII 96813 - TEL. (808) 837-5271

January 25, 1982

Dr. Ryokichi Higashionna  
 Director  
 Department of Transportation  
 State of Hawaii  
 869 Punchbowl Street  
 Honolulu, Hawaii 96813

Reference: HWY-PA  
 2.67570


Dear Ric:

In regard to the EIS preparation notice for the 2.2 mile section of the proposed Makai Boulevard concept project, I recognize that the alternatives are still in the preliminary phase.

However, I want to point out that serious problems could arise from the viaduct alternative which would end in the vicinity of Pier 18. It would impact adversely the Aloha Tower complex nearby. Furthermore, the downtown area should not have the recurring threat of an elevated highway being constructed along its waterfront.

Although this EIS will not deal with those results, it is not too early in the planning stage to consider the consequences of alternatives which would have such great impact externally.

Sincerely yours,

  
 Aaron Levine  
 President

cc: Hideto Kono  
 William A Grant

## OFFICERS AND BOARD OF DIRECTORS

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 VICE PRESIDENT  
 VICE PRESIDENT  
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FEB 3 1982

RECEIVED  
 DIRECTOR

Wayne J. Yamasaki  
 JAMES E. CALDWELL  
 JAMES E. CALDWELL  
 JAMES E. CALDWELL

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HONOLULU, HAWAII 96813



STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HONOLULU, HAWAII 96813

Mr. Aaron Levine  
 Oahu Development Conference  
 141 Merchant Street, Suite 213  
 Honolulu, Hawaii 96813

Dear Mr. Levine:

Makai Boulevard Concept, Keolu I.C.  
 to Pier 18, Project No. F-092-1(16)  
 EIS Preparation Notice

In response to your letter of January 25, 1982 concerning the viaduct alternative for this project, please be advised that the viaduct would extend only from the vicinity of Sarg Island Access Road to Kapelaia Canal. The intent is to provide a by-pass for through traffic in this congested commercial-industrial area, where intersections along Aiea Highway are presently operating above capacity. A viaduct between these limits should have very minor impact on the Aloha Tower complex and the downtown waterfront.

We also wish to assure you that we are committed to your desire to maintain the openness of Honolulu Harbor, and this will be given serious consideration during the development of the various alternatives.

We sincerely appreciate your efforts in providing us with your comments and we look forward to your participation in the development of this project.

Very truly yours,

Ryokichi Higashionna  
 Director of Transportation

NS:G1

CC: ECT, PE:GD

GEORGE H. ADAMS  
DIRECTOR



THE OUTDOOR CIRCLE 200 No. Vineyard, Honolulu, Hawaii 96817

RYOKICHI HIGASHIONNA  
DIRECTOR

DEPUTY DIRECTOR  
Wayne J. Yamazaki  
JAMES R. CAHILL  
JAMES B. MCCORMACK  
JOYANTHUS K. SHIMADA  
PH.D.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION

MAR 15 1982

HWY-7A  
2-68512

February 17, 1982

Dr. Ryokichi Higashionna, Director  
Department of Transportation  
869 Punchbowl  
Honolulu, Hawaii 96813

RE: Makai Blvd. Concept, Keel I. C. to Pier 18,  
Project #F/092/1 (16), E.I.S. Preparation Notice.

Dear Dr. Higashionna:

The Outdoor Circle welcomes the opportunity to reply to the  
Preparation Notice and addresses concern to Alternative B,  
Statement G, page 4.

Our concern is relocating the bike route from the pavement  
area to landscape area.

The whole area involved in this project is one of the most  
unsightly in Honolulu with regard to landscaping and it is  
The Outdoor Circle's concern that no landscaping is included  
in this plan other than the relocating of the bike lanes into  
the "landscaped area."

This would be an excellent opportunity to include detailed  
landscaping in the final Environmental Impact Statement.

Thank you for this opportunity to address the concerns of  
The Outdoor Circle.

Sincerely,

*William L. McKeever*

Mrs. William L. McKeever  
President

SlcK/cc

Mrs. Suzanne V. McKeever  
President  
The Outdoor Circle  
200 North Vineyard Street  
Honolulu, Hawaii 96817

Dear Mrs. McKeever:

Makai Boulevard Concept, Keel I. C.  
to Pier 18, Project No. F-092-1(16)

Thank you for your letter of February 17, 1982,  
which commented on the EIS Preparation Notice for  
this project.

As you may know, the State Department of  
Transportation is currently landscaping the road-  
side areas from the Heleia Canal to the vicinity  
of Pacific Street, as part of the Honolulu Airport  
Gateway Beautification project. We intend to  
minimize future impacts to this area and to its  
plantings, and this will be described in greater  
detail in the project EIS.

Also, for your information, plans for land-  
scaping are usually accomplished during later  
project stages, following the determination of  
engineering requirements. However, the EIS will  
propose that landscaping be provided and will  
indicate general areas in which this proposal may  
be implemented.

We trust that the above is satisfactory and we  
look forward to contacting you again.

Very truly yours,

Ryokichi Higashionna  
Director of Transportation

RS:cl

FEB 25 1982

BRANCHES

KONA OUTDOOR CIRCLE

MAUI OUTDOOR CIRCLE

HAWAII OUTDOOR CIRCLE

KAHOLA OUTDOOR CIRCLE

MAUI OUTDOOR CIRCLE

HAWAII OUTDOOR CIRCLE

KAHOLA OUTDOOR CIRCLE

MAUI OUTDOOR CIRCLE

HAWAII OUTDOOR CIRCLE

KAHOLA OUTDOOR CIRCLE

MAUI OUTDOOR CIRCLE

HAWAII OUTDOOR CIRCLE

ROUCHA HIGASHIONNA, Ph.D.  
DIRECTOR  
DEPUTY DIRECTORS  
WAYNE J. YAMASAKI  
JAMES R. CURRAN  
JAMES B. SHAW  
JOHNATHAN K. SHAWDA, Ph.D.  
N ERTY REF 10  
HWY-PA  
2.68850



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
15 FUNDING STREET  
HONOLULU (PEARL MALL)  
April 2, 1982

CEINGER ARYOSSE  
CONTINUA

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



MICHAEL J. CHUN, Ph.D.  
DIRECTOR AND CHIEF ENGINEER  
ENV 82-39

SILEEN R. ANDERSON  
SECRET

January 28, 1982

Dr. Ryokichi Higashionna  
Director of Transportation  
Department of Transportation  
State of Hawaii  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Dr. Higashionna:  
Re: EIS Preparation Notice for Makai Boulevard  
Concept, Keehi I. C. to Pier 18,  
Project No. F-092-1(16)

We are responding to your letter of January 18, 1982, concerning  
the potential impact of the subject proposed project.

1. Any improvement to this segment of the highway should include increasing drainage capacities across the roadway to a suitable discharge point. The present system is inadequate and results in the backup of storm runoff and flooding of mauka streets and properties.
2. If Alternatives "H" and "I" are adopted, the existing sewer lines crossing Nimitz Highway at Mokauea and Kalihi Streets may be affected. These are gravity lines and should not be redesigned as inverted siphons.
3. The discharge from the Sand Island sewage treatment plant meets the water quality standards applicable to Class A waters. If water quality is poor around Sand Island and Honolulu Harbor, it is caused by sources other than the Sand Island outfall.

Me ke aloha pumehana,  
*Michael J. Chun*  
MICHAEL J. CHUN  
Director and Chief Engineer

cc: Div. of Engineering  
Div. of Wastewater Management

Dr. Michael J. Chun  
Director and Chief Engineer  
Department of Public Works  
City and County of Honolulu  
650 South King Street  
Honolulu, Hawaii 96813

Dear Dr. Chun:

Makai Boulevard Concept, Keehi I.C.  
to Pier 18, Project No. F-092-1(16)  
EIS Preparation Notice

Thank you for your letter of January 28, 1982,  
concerning the potential impacts of this project.

Please be assured that the drainage facilities of  
Nimitz Highway will be thoroughly evaluated during the  
development of this project. Also, the gravity sewer  
lines which cross Nimitz Highway at Kalihi and Mokauea  
Streets will be considered in the future for all  
alternatives.

For your information, Alternatives II and I have  
been eliminated from further study.

It should also be noted that your comments  
regarding the discharge from the sewer treatment plant  
will be taken under advisement, and accordingly, our  
statement in the EIS Preparation Notice may be revised.

We sincerely appreciate your concern and interest  
in this project. Should you have any questions, please  
feel free to contact us.

Very truly yours,  
*Ryokichi Higashionna*  
Ryokichi Higashionna  
Director of Transportation

FEB 10 1982

GEORGE B. ARUYOSHI  
DIRECTOR



STATE OF HAWAII  
DEPARTMENT OF SOCIAL SERVICES AND HOUSING  
January 25, 1982

FRANKLIN Y. K. SUNN  
DIRECTOR  
RICHARD P. OLMSTEAD  
DEPUTY DIRECTOR  
ALFRED K. SUGA  
DEPUTY DIRECTOR

GEORGE B. ARUYOSHI  
DIRECTOR



STATE OF HAWAII  
DEPARTMENT OF HEALTH

PO BOX 3118  
HONOLULU, HAWAII 96813  
January 28, 1982

FRANKLIN Y. K. SUNN  
DIRECTOR  
RICHARD P. OLMSTEAD, M.D.  
DEPUTY DIRECTOR  
ALFRED K. SUGA, M.D.  
DEPUTY DIRECTOR  
MELVIN K. KOIZUMI  
DEPUTY DIRECTOR  
MELVIN K. KOIZUMI  
DEPUTY DIRECTOR  
MELVIN K. KOIZUMI  
DEPUTY DIRECTOR

NO REPLY  
EHS-55

MEMORANDUM:

TO: The Honorable Ryokichi Higashionna, Director  
Department of Transportation

FROM: Franklin Y. K. Sunn, Director

SUBJECT: Makai Boulevard Concept, Keehi I.C. to  
Pier 18, Project No. F-092-1(16) -  
Environmental Impact Statement Preparation  
Notice

The Hawaii Housing Authority has reviewed the EIS  
Preparation Notice for the subject project and has no  
comments to offer relative to the proposed action.

Thank you for the opportunity to comment on this matter.

*Franklin Y. K. Sunn*  
FRANKLIN Y. K. SUNN  
Director

NO RESPONSES NECESSARY

FEB 2 1982

Hr. Ryokichi Higashionna  
Director of Transportation  
State of Hawaii  
869 Punchbowl St.  
Honolulu, Hawaii 96813

Dear Mr. Higashionna:

Subject: Request for Comments on Proposed Environmental Impact  
Statement (EIS) for Makai Boulevard Concept, Keehi I.C. to  
Pier 18, Project No. F-092-1(16)

Thank you for allowing us to review and comment on the subject  
proposed EIS. Please be informed that we do not have any comments or  
objections to this project at this time.

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

Sincerely,

*Melvin K. Koizumi*  
MELVIN K. KOIZUMI  
Deputy Director for  
Environmental Health

NO RESPONSES NECESSARY

FEB 10 1982

DEPARTMENT OF PARKS AND RECREATION  
**CITY AND COUNTY OF HONOLULU**  
850 SOUTH KING STREET  
HONOLULU, HAWAII 96813



ROBERT K. HASUDA  
DIRECTOR

January 27, 1982

Dr. Ryokichi Higashionna,  
Director  
Department of Transportation  
State of Hawaii  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Dr. Higashionna:

SUBJECT: MAKAI BOULEVARD CONCEPT,  
KEEHI I.C. TO PIER 18,  
PROJECT NO. F-092-1(16)  
ENVIRONMENTAL IMPACT STATEMENT  
PREPARATION NOTICE

The proposed action will not have any impact on our parks and recreation facilities.

Thank you for the opportunity to review the EIS Preparation Notice.

Sincerely yours,

*Robert K. Hasuda*  
ROBERT K. HASUDA, Director

RKH:vc

FEB 10 1982

NO RESPONSES NECESSARY



**University of Hawaii at Manoa**

Water Resources Research Center  
Hohoku Hall 201 • 2540 Ukelele Street  
Honolulu, Hawaii 96822

5 February 1982

Mr. Ryokichi Higashionna  
Director, Dept. of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii

Dear Mr. Higashionna:

Subject: HWY-PA 2-67570, EIS Preparation Notice Makai  
Boulevard Concept, Keehi I.C. to Pier 18,  
Project No. F-092-1(16).

We have reviewed the subject EIS Preparation Notice and have no comment to offer at this time. Thank you for the opportunity to comment. This material was reviewed by WRRC personnel.

Sincerely,

*Edwin T. Murabayashi*  
Edwin T. Murabayashi  
EIS Coordinator

ETH:jm

cc: Y.S. Fok  
H. Gee

FEB 10

AN EQUAL OPPORTUNITY EMPLOYER

NO RESPONSES NECESSARY

TABLE 12

ORGANIZATIONS AND AGENCIES FROM WHOM COMMENTS FROM THE  
PREPARATION NOTICE WERE RECEIVED AND/OR THE DEIS SENT

City and County

Building Department  
Department of Parks and Recreation  
Department of Public Works  
Department of Land Utilization  
Department of Transportation Services  
Fire Department  
Department of General Planning  
Board of Water Supply  
Honolulu City Council  
Neighborhood Commission

State

Department of Social Services and Housing  
Department of Health  
Department of Accounting and General Services  
Water Resources Research Center, University of Hawaii at Manoa  
Environmental Center, University of Hawaii  
Department of Land and Natural Resources  
Department of Education  
Department of Planning and Economic Development  
Environmental Quality Commission  
Oahu Metropolitan Planning Organization  
State Commission on Transportation

Federal

U.S. Fish and Wildlife Service  
Federal Aviation Administration  
U.S. Department of Housing and Urban Development  
U.S. Army Corps of Engineers, Honolulu  
Advisory Council on Historic Preservation  
U.S. Department of Health, Education and Welfare  
U.S. Department of Commerce  
U.S. Department of Energy  
U.S. Department of Interior  
U.S. Coast Guard  
U.S. Environmental Protection Agency, Region IX  
San Francisco, California; Washington, D.C.

TABLE 12  
(continued)

Private Agencies

Oahu Development Conference  
Hawaiian Dredging and Construction Company  
Shell Oil Company  
Hawaiian Electric Company  
Hawaiian Telephone Company  
Outdoor Circle  
Kalihi Business Association  
Y. Higa Enterprises Ltd.  
Kalihi-Palama Neighborhood Board  
American Lung Association of Hawaii  
Downtown Business Council  
Life of the Land  
Shoreline Protection Alliance  
Conservation Council  
Nimitz Business Association  
Kapalama Canal Committee



TABLE 13

ORGANIZATIONS AND AGENCIES COMMENTING ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

<u>ORGANIZATIONS/AGENCIES</u>	<u>Date of Comments</u>
<u>City and County</u>	
Board of Water Supply	3/02/83
Building Department	2/24/83
Department of Parks and Recreation	3/02/83
Department of Public Works	3/09/83
Department of Land Utilization	3/28/83
Department of General Planning	4/07/83
<u>State</u>	
Department of Education	2/28/83
Department of Accounting & General Services	2/28/83
Office of Environmental Quality Control	4/18/83
University of Hawaii - Water Resources Research Center	3/07/83
Department of Health	3/18/83
Department of Land and Natural Resources	3/21/83
<u>Federal</u>	
Fish & Wildlife Service	2/17/83
U.S. Coast Guard	2/23/83
U.S. Navy	2/28/83
U.S. Army Support Command, Hawaii	4/05/83
Department of the Army, COE	3/11/83
U.S. Department of the Interior	3/23/83
Federal Aviation Administration, Airports District Office	4/01/83
U.S. Air Force	3/4/83
U.S. Department of Transportation, Environmental Division	3/11/83
U.S. Environmental Protection Agency	4/14/83
<u>Private Agencies</u>	
Hawaiian Telephone	3/11/83
Hawaiian Electric Company	4/14/83
Akinaka and Associates, Ltd.	6/01/83



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX  
215 Fremont Street  
San Francisco, Ca. 94105

APR 14 1983

Mr. H. Kusumoto, Division Administrator  
Federal Highway Administration  
P.O. Box 50206  
300 Ala Moana Boulevard  
Honolulu, Hawaii 96850

Dear Mr. Kusumoto:

The Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (EIS) titled HAKAI BOULEVARD CONCEPT, MIDDLE STREET TO PIER 18, HONOLULU, OAHU. We have the enclosed comments regarding this Draft EIS.

We have classified this Draft EIS as Category LO-2. Definitions of the categories are provided by the enclosure. The classification and date of EPA's comments will be published in the Federal Register in accordance with our public disclosure responsibilities under Section 309 of the Clean Air Act.

We appreciate the opportunity to review this Draft EIS. Please send three copies of the Final EIS to this office at the same time it is officially filed with our Washington, D.C. office. If you have any questions, please contact Loretta Kahn Barsamian, Chief, EIS Review Section, at (415) 974-8188 or FTS 454-8188.

Sincerely yours,

*Charles W. Murray*  
Charles W. Murray, Jr.,  
Assistant Regional Administrator  
for Policy, Technical, and  
Resources Management

Enclosures (2)

cc: Dr. Ryokichi Higashionna, Director  
Hawaii Transportation Department

Water Quality Comments

1. The following statement concerning the Hakai Boulevard Concept Draft Environmental Impact Statement (DEIS) ignores the statutory mandate of Congress:

Any adverse impact to the coastal water quality is anticipated to be insignificant since the waters are currently degraded due to the industrial uses prevalent in the area. (Page 1-4)

(1A)

Designated uses for the coastal waters include the support and propagation of wildlife, bait fishing and compatible recreation, and aesthetic enjoyment. Industrial and municipal dischargers have been issued discharge permits with specific discharge requirements to attain these uses.

Federal agencies must use all practicable means to restore and enhance the quality of the human environment. (40 CFR 1500.2(f)). The Federal Highway Administration should identify specific mitigation measures to be implemented, both during and after project construction, to alleviate potential adverse impacts to coastal water quality.

2. The DEIS states on page 5-6 that "the proposed action will undoubtedly facilitate an increase in surface water runoff...this increase is anticipated to be minimal and consistent with existing levels of runoff." The Final EIS should define "existing levels" of runoff. It should also estimate the effects of increased constituent loads (e.g., nitrogen, phosphorus and suspended solids) entering the streams within the project vicinity, and hence coastal waters. Mitigation measures should be discussed, such as the use of stilling basins to reduce the levels of sediments and other pollutants entering surface and coastal waters. Stilling basins could also be used to reduce sediments from adjacent roadways and streets.

(1B)

(1C) 3. The last paragraph on page 7-1 should be revised to include impacts to surface and coastal water quality.

EIS CATEGORY CODES

Environmental Impact of the Action

10—Lack of Objections

EPA has no objection to the proposed action as described in the draft impact statement; or suggests only minor changes in the proposed action.

ER—Environmental Reservations

EPA has reservations concerning the environmental effects of certain aspects of the proposed action. EPA believes that further study of suggested alternatives or modifications is required and has asked the originating Federal agency to reassess these aspects.

EI—Environmentally Unsatisfactory

EPA believes that the proposed action is unsatisfactory because of its potentially harmful effect on the environment. Furthermore, the Agency believes that the potential safeguards which might be utilized may not adequately protect the environment from hazards arising from this action. The Agency recommends that alternatives to the action be analyzed further (including the possibility of no action at all).

Adequacy of the Impact Statement

Category 1—Adequate

The draft impact statement adequately sets forth the environmental impact of the proposed project or action as well as alternatives reasonably available to the project or action.

Category 2—Insufficient Information

EPA believes that the draft impact statement does not contain sufficient information to assess fully the environmental impact of the proposed project or action. However, from the information submitted, the Agency is able to make a preliminary determination of the impact on the environment. EPA has requested that the originator provide the information that was not included in the draft statement.

Category 3—Inadequate

EPA believes that the draft impact statement does not adequately assess the environmental impact of the proposed project or action, or that the statement inadequately analyzes reasonably available alternatives. The Agency has requested more information and analysis concerning the potential environmental hazards and has asked that substantial revision be made to the impact statement.

If a draft impact statement is assigned a Category 3, no rating will be made of the project or action, since a basis does not generally exist on which to make such a determination.

EVALUATION - U.S. ENVIRONMENTAL PROTECTION AGENCY (4/14/83)

1A. The statement has been deleted from the Final EIS, due to its inappropriateness.

Adverse water quality impacts should be minimized due to the selection of Alternate IA. Only minor improvements are being proposed, relative to the other alternatives, and excessive amounts of erosion and sedimentation are not probable. The Final EIS, however, does discuss erosion control measures which will mitigate impacts resulting from construction. The selected alternative would not create any substantial amounts of impervious surfaces to increase the amount of runoff, and wherever possible, the drainage system will be improved to reduce the level of sediments and other pollutants entering surface and coastal waters.

1B. As stated above, the selected alternative will not substantially increase surface runoff. Based on 10-year and 20-year storm data, the surface runoff for the highway is approximately 2,500 cubic feet per second. The use of catch basins to reduce the levels of sediment entering adjacent waters will be considered as indicated above.

1C. The Final EIS addresses the impacts of Alternate IA upon surface and coastal water quality.

HAWAIIAN ELECTRIC COMPANY, INC.

Box 2750 Honolulu, Hawaii 96840

APR 14 1983

ENV 2-1  
NV/G

RICHARD L. O'CONNELL, P.E.  
MANAGER, ENVIRONMENTAL DEPARTMENT  
PH 513-5446

April 14, 1983

Mr. H. Kusumoto  
Division Administrator  
U.S. Department of Transportation  
Federal Highway Administration  
P. O. Box 50206  
Honolulu, Hawaii 96850

Dear Mr. Kusumoto:

Subject: Draft EIS, Makai Boulevard Concept, Middle Street  
to Pier 18, EIS No. FHWA-HI-EIS-83-01-D

We have reviewed the above Draft Environmental Impact Statement and offer the following comments:

- (2A) 1. Plans for future facilities should be formulated so that proper provisions can be made for undergrounding if existing available routes for overhead facilities become unusable.
- (2B) 2. Reference page 4-15, paragraph 4.10.6. HECO also has some electrical service lines along Nimitz Highway at distribution voltages.
- (2C) 3. Reference page 5-8, paragraph 5.2.6. We believe two additional subparas are required which state in substance that should overhead lines on Nimitz Highway be placed underground, it may be necessary to underground electrical services to several customers as well. The cost of undergrounding these service lines in private property must be borne by the property owner.
- (2D) 4. That the cost of relocating the electric utility lines will be shared by HECO and the State under the provisions of HRS Section 264-33.
- (2E) 5. Alternative I-A, the widening of Kalihī Street north of Nimitz Highway to Dillingham Boulevard shall affect the overhead lines presently located on the Diamond Head side of Kalihī Street.
- (2F) 6. Alternative I-B, no effect on HECO facilities.
- (2F) 7. Alternative I-C, the proposed ramp for Waikamilo Road will have an effect on the overhead lines at the inter-

HAWAIIAN ELECTRIC COMPANY, INC.

Mr. H. Kusumoto  
April 14, 1983  
Page Two

section of Kalani Street and at the intersection of Nimitz Highway.

- (2F) 8. Alternative II, the effect is the same as in Alternative I-A, above.
- (2F) 9. Alternative III, the effect is the same as in Alternative I-A above. In addition, the overhead lines respectively along Puuhale Road, Hokauea Street, Kalihī Street and Libby Street may have to be placed underground in order to clear the proposed viaduct along Nimitz Highway.
- (2F) 10. Alternative IV, the effect is the same as in Alternative III, but in addition, the overhead line along Kanakanui Street may also be affected.

Thank you for the opportunity to comment on this Draft Environmental Impact Statement. Please send a copy of the Final EIS.

Sincerely,

Richard L. O'Connell  
Manager, Environmental Department

JMP, Jr.:ca1

EVALUATION - HAWAIIAN ELECTRIC COMPANY, INC. (4/14/83)

Alternative IA has been selected as the most economically feasible and socially acceptable plan. However, review of your letter indicates that your concerns relate more to Alternatives III and IV, than the selected Alternative IA. Your comments have been evaluated in light of this selection:

- 2A. Highway facilities are usually planned with a "utility strip" within which various utilities may be accommodated. This project is not an exception.
- 2B. The information provided by you will be included in the Final EIS.
- 2C. Since the selected alternative has a very limited scope, it is unlikely that overhead facilities would be placed underground. However, your statement will be included in the Final EIS.
- 2D. We agree. However, we believe that this statement is not necessary in the Final EIS.
- 2E. Should the alternative affect the overhead lines located on Kailhi Street, the DOT will coordinate design plans with HECO, so as to minimize all potential adverse effects.
- 2F. The proposed project will not implement these alternatives and therefore, will not cause any of the stated effects.



**AKINAKA & ASSOCIATES, LTD.**  
CONSULTING ENGINEERS  
Civil and Structural Engineering • Land Surveying

ROOM 201, 1319 NORTH SCHOOL STREET, HONOLULU, HAWAII 96817 • TELEPHONE 845-7296

ARTHUR Y. AKINAKA  
DONALD T. YAMA  
SALVADOR M. GUTIERREZ  
WALTER A. MOHRING

June 1, 1983

Mr. H. Kusumoto  
Division Administrator  
Federal Highway Administration  
Box 50206  
Honolulu, Hawaii 96850

Dear Mr. Kusumoto:

We acknowledge belatedly your letter of Feb. 18, 1983 with Draft Environmental Impact Statement enclosed on the Hakaui Boulevard Concept. We had been awaiting further scheduled informational meetings before commenting.

(3A) As to need for improvements, there appears to be unanimous agreement at the meetings among users of the Boulevard for the proposed project to relieve the traffic congestion.

Thanking you for the opportunity to comment, and am responding as an individual--a life-long resident of the vicinity.

Your very truly,

*Arthur Y. Akinaka*  
Arthur Y. Akinaka

EVALUATION - MR. ARTHUR Y. AKINAKA (6/1/83)

3A. Your stated assessment regarding the need to relieve traffic congestion is accurate, and due to the EIS process and several public meetings, an alternative has been selected to meet these ends. In view of present time schedules and budget constraints, Alternatives III and IV (viaduct alternatives) were not determined to be economically feasible at this time. Alternative IA has been selected as the most feasible and socially acceptable plan. The Final EIS reflects this determination and discusses in more detail, impacts associated with Alternative IA.

CITY AND COUNTY OF HONOLULU

DEPARTMENT OF LAND UTILIZATION  
830 SOUTH KING STREET  
HONOLULU, HAWAII 96813

*Handwritten:* King Hwy



FILED M. ANDERSON  
MAY 1983

MICHAEL M. McELROY  
DIRECTOR

ROBERT B. JONES  
DEPUTY DIRECTOR

LU2/83-759(SM)  
LUL/82-326

March 28, 1983

Dr. Ryokichi Higashionna, Director  
Department of Transportation  
State of Hawaii  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Dr. Higashionna:

Draft Environmental Impact Statement  
Makai Boulevard Concept, Keehi Interchange to Pier 18  
Project No. F-092-1(16)--Honolulu, Oahu, Hawaii

We have reviewed the above and have the following comments to offer:

1. Reference: Pages 3-3 to 3-11

(4A)

Comment: We question the alternative to open Libby Street for westbound left turns to Kalihi Kai, for a number of reasons:  
(1) Currently Libby Street is a very small, narrow road which is used for local eastbound access. Local residents and businesses use both sides of this road for parking; (2) Libby Street and Auiki Street meet at an angle, which would require greater controls with higher volumes of traffic; (3) Libby Street is not perpendicular to Nimitz Highway, creating a sharp turn onto Libby from the westbound direction; and (4) Libby Street is only 400 feet from Kalihi Street, which could affect left-turn storage for Kalihi Street.

2. Comment: As you are aware, the main thoroughfares serving the Kalihi Kai/Kapalama area are Sand Island Access Road, which has been scheduled for improvements, and Kalihi Street, which channels traffic into this area from Likelike Highway. One potential long-term, at-grade solution which has not been discussed is the possibility of extending Auiki Street to the Waiakamilo Road/ Nimitz Highway intersection, then improving Auiki Street and Kalihi Street. We realize that this area is owned by the Federal Government; however, the possibility of obtaining an access/roadway easement could be explored.

(4B)

Dr. Ryokichi Higashionna, Director  
Page 2

3. Reference: Pages 3-13 to 3-16

Comment: We feel that the gradual increase in traffic on the Nimitz Highway corridor between Middle Street and Pier 18 warrants a long-term solution. It appears that the at-grade solutions (Alternatives I and II) will improve the existing conditions to a degree, but will not solve the overall traffic situation in the long-run. We consider Alternative III as an intermediate step, in terms of both implementation and costs, between the at-grade solutions and the construction of a full viaduct. The design of Alternative III should be integrated with the newly-constructed Keehi Interchange.

(4C)

If there are any questions, please contact Sampson Mar of our staff at 523-4077.

Very truly yours,

*Handwritten signature:* Michael M. McElroy

MICHAEL M. McELROY  
Director of Land Utilization

HMM:s1

EVALUATION - CITY AND COUNTY OF HONOLULU,  
DEPARTMENT OF LAND UTILIZATION (3/28/83)

- 4A. Libby Street is proposed as an additional access to Kailhi Kai to relieve the high demand projected at Kailhi Street for westbound left turns. Other alternatives considered, but rejected, because of greater adverse impacts or less traffic accommodation, include double left turn lanes at Kailhi Street, grade separation of Kailhi Street, and forced "jug-handle" movements through Hari Street. (1) The impact of this improvement to on-street parking along Libby Street would be minimal. (2) and (3) The layout of the left turn lane and channelization recognizes the angle of the intersection; design of the intersection would provide the necessary controls. (4) The amount of signal time which could be given to the westbound left turn at Kailhi Street is limited; a long storage lane for it would not be appropriate.
- 4B. The possible solution of extending Auliki Street through the containeryard was studied and found to be impractical and infeasible because of ongoing harbor development to relocate the interisland barge operations to the Pier 39-40 area. A new public roadway across the site would isolate the containeryard from the piers. This alternative was not mentioned in the DEIS because its scope is beyond the project limits.
- 4C. The DOT has selected Alternative IA as the most economically feasible and socially acceptable plan at this time. It has the lowest construction cost and a minimal amount of right-of-way take. It would retain the existing traffic movements and landscaping along Nimitz Highway. Also, it may be implemented more quickly (less design and construction time) and will have the least impact on traffic during construction. Improvements made under Alternative IA would support any long-range solution and were a part of Alternatives II, III, and IV.
- Alternative IA would not preclude the implementation of a long-range solution, whether it be a viaduct as described by Alternative IV or other major improvement, at a later date. Additional studies, including completion by the Oahu Metropolitan Planning Organization of the update of the Oahu Long-Range Transportation Plan (Fall 2000), truck route studies, a possible Kailhi-Palama area-wide transportation study, and other studies could provide additional data to support a long-range solution. Finally, Alternative IA will provide additional capacity to serve present and short-term, interim, traffic demands without predetermining a long-range commitment.



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



SILEEN R. ANDERSON  
MAYOR

WILLARD T. CHOW  
CHIEF PLANNING OFFICER  
RALPH PORTIMORE  
DEPUTY CHIEF PLANNING OFFICER  
DGP2/83-5144

Mr. H. Kusumoto  
Page 2  
April 7, 1983

April 7, 1983

Mr. H. Kusumoto, Division Administrator  
U.S. Department of Transportation  
Federal Highway Administration  
Region Nine, Hawaii Division  
Box 50206  
Honolulu, Hawaii 96850

Dear Mr. Kusumoto:

Draft EIS, Makai Boulevard Concept  
Middle Street to Pier 18  
EIS No. FHWA-HI-EIS-83-01-D

We have reviewed the above draft EIS and offer the following comments:

XII-54

(5C) 3. Although it might be true that impact on scenic views may be insignificant if a ground level alternative is selected, it might not hold true if the construction of a viaduct becomes a reality. In that event, assessments should be provided not only from the standpoints of viaduct users' standpoint, but also from the standpoint of ground level Nimitz Highway motorists and those properties immediately neighboring the viaduct alignment. Discussion on obstruction to north/south and east/west viewing might be included as well as feelings of loss of open space.

(5D) 4. It seems that a particularly vulnerable area might be the neighborhood bounded by Nimitz Highway, Libby Street, Auiki Street, and Sand Island Access Road. With a prevailing wind generally from the northeasterly direction, the area might face potentially severe and continuous problems from construction related activities in the form of fugitive dust, noise, and air pollutant emissions generated by construction trucks and heavy equipment. Additionally, these makai side residents may find trying to reach destination areas mauka of Nimitz Highway difficult, i.e., schools, recreation areas, churches, businesses, etc.

(5E) 5. In addition to a general statement that DOT has committed itself to a highway beautification program along Nimitz Highway, information may also be needed which provides details on the project's conceptual landscape design plans to mitigate the project's adverse visual and scenic impacts.

(5F) 6. Since the report establishes the fact that the proposed project would undoubtedly impact on the proposed Aloha Tower Plaza project, discussion on the extent and type of adverse impact foreseen should be provided.

Sincerely,

*Ralph Kawamoto*

RALPH KAWAMOTO  
Planner

APPROVED:

*Willard T. Chow*

WILLARD T. CHOW

(5A) 1. The conclusion that vehicular and pedestrian accessibility to commercial/industrial properties fronting the Nimitz Highway section is not a major factor for their economic survival and the impacts are likely to be minimal may need to be substantiated in view of recent experiences near the Honolulu International Airport. Information which might help would be a list of the type of commercial/industrial activities being conducted, ingress and egress points to the properties, hours of operation, peak periods of highway traffic, traffic rerouting patterns and the like.

(5B) 2. Each alternative should be evaluated in terms of the increased traffic load (after improvements) on Nimitz Highway beginning at Pier 18 in the Diamond Head direction. What is the impact on (1) Nimitz and Ala Moana, and (2) the downtown street system of channeling the load through the downtown area? This analysis is especially critical for Alternatives III and IV which include construction of viaducts. Would the viaduct solution and the subsequent increase in capacity establish a situation where a viaduct will become a virtual necessity through the downtown area?

EVALUATION - CITY AND COUNTY OF HONOLULU  
DEPARTMENT OF GENERAL PLANNING (4/7/83)

- 5A. Alternative IA has been selected for implementation. The alternative will require only minimal taking of land, and will not alter ingress and egress points, or alter traffic patterns. It is anticipated that impacts associated with Alternative IA would occur only during construction and not during operations. Therefore, impacts should be of short-duration and not be as significant as those resulting from Alternatives III and IV.
- 5B. As you have stated in your comment, the analysis being requested would be "...critical for Alternatives III and IV which include construction of viaducts." Since Alternative IA has been selected, further analysis of the viaducts is unnecessary in the Final EIS.
- 5C. Alternative IA will not propose any improvements which will alter existing scenic views.
- 5D. Construction activities will generate fugitive dust and noise, which ultimately, will impact adjacent neighborhoods and communities. However, since Alternative IA proposes minor improvements in comparison to the other alternatives, subsequent construction and associated impacts would also be of shorter duration.
- 5E. Alternative IA will remove a minimal amount of the existing landscaping found within the corridor. Although proposed landscaping will not be extensive, plans will be formulated during the design phase to maintain the Gateway concept.
- 5F. This paragraph has been extracted from the Environmental Impact Statement. At first, it was believed that an increased volume of traffic would pose a problem for the proposed Aloha Tower complex. A traffic study for the proposed complex indicated that the projected volumes could be accommodated satisfactorily.

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



EILEEN R. ANDERSON  
MAIOP

MICHAEL J. CHUN, Ph.D.  
DIRECTOR AND CHIEF ENGINEER

ENV 83-64

March 9, 1983

Mr. H. Kusumoto  
Division Administrator  
Federal Highway Administration  
U. S. Department of Transportation  
P. O. Box 50206  
Honolulu, Hawaii 96850

Dear Mr. Kusumoto:

Re: Draft EIS, Makai Boulevard Concept,  
Middle Street to Pier 18,  
EIS No. FHWA-HI-EIS-83-01-D

We have reviewed the subject Draft EIS and have the following comments.

- (6A) 1. If any bridges are to be built over Kalihi and Moanalua Streams, their waterways should be adequately sized.
- (6B) 2. All alternatives requiring construction of ramps or viaducts should be coordinated with the Division of Wastewater Management to prevent disturbing the existing sewer lines in the area. In addition, construction drawings should be coordinated with the Division of Engineering.
- (6C) 3. We would like to receive the Final EIS.

Me ke aloha pumehana,

MICHAEL J. CHUN  
Director and Chief Engineer

cc: Div. of Engineering  
Div. of Wastewater Management

EVALUATION - CITY AND COUNTY OF HONOLULU,  
DEPARTMENT OF PUBLIC WORKS (3/9/83)

- 6A. Alternative 1A has been selected for implementation. No bridges are to be built over the Kalihi and Moanalua Streams.
- 6B. Alternative 1A does not propose the construction of ramps or viaducts and should therefore, not disturb existing sewer lines in the area. Should any lines need to be relocated or altered, all drawings will be coordinated with the Division of Engineering.
- 6C. Your office will receive the Final EIS.

DEPARTMENT OF THE ARMY  
PACIFIC OCEAN DIVISION, CORPS OF ENGINEERS  
FT. SHAFTER, HAWAII 96859

March 11, 1983



Mr. H. Kusumoto  
Division Administrator  
Federal Highway Administration  
U.S. Department of Transportation  
P.O. Box 50206  
300 Ala Moana Boulevard  
Honolulu, Hawaii 96850

Dear Mr. Kusumoto:

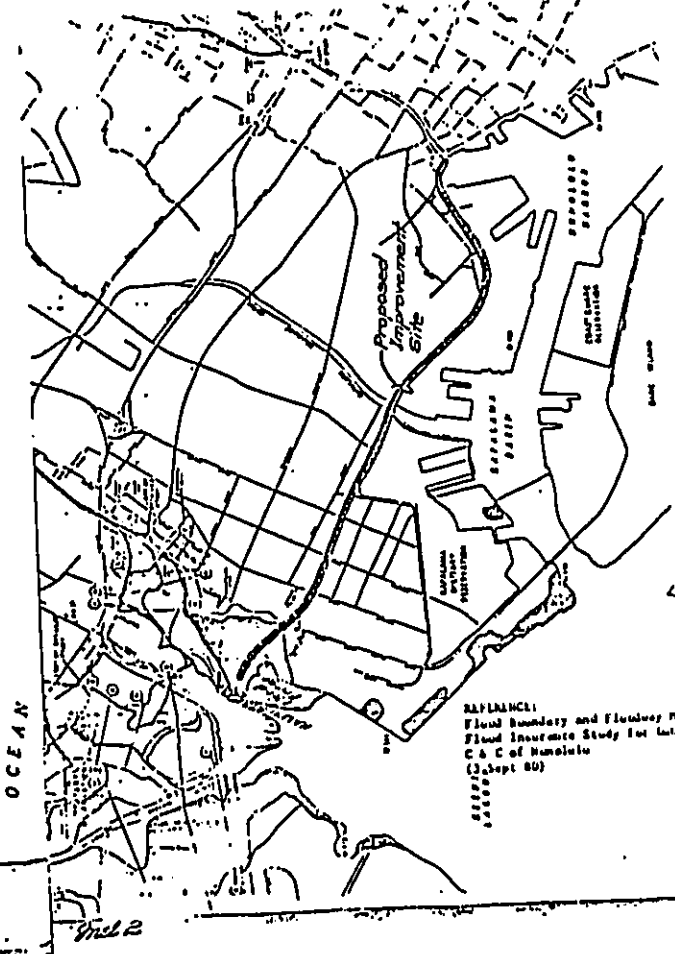
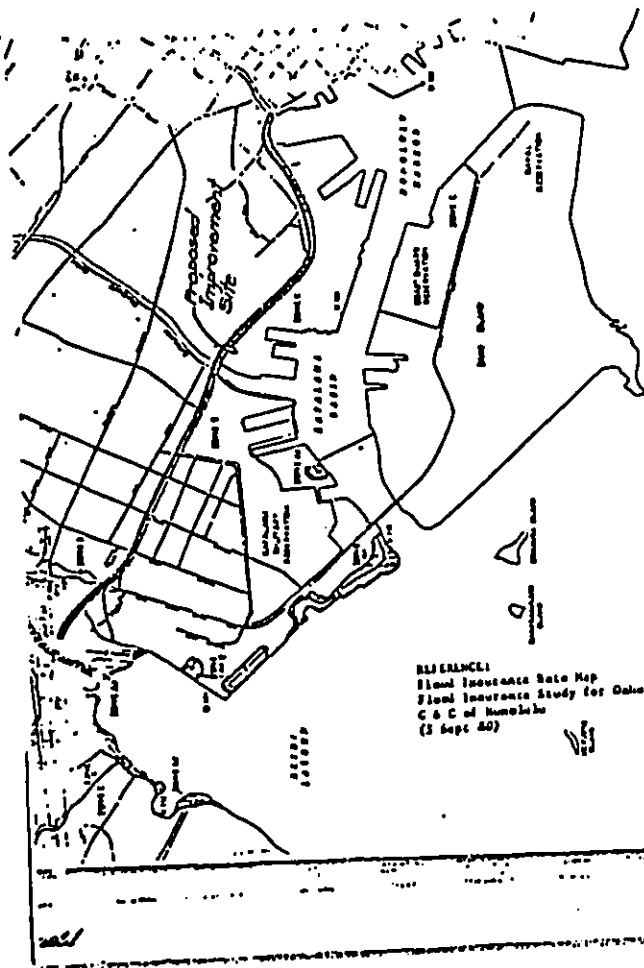
Thank you for the opportunity to review the Draft Environmental Impact Statement (DEIS) for the Proposed Makai Boulevard Concept, Middle Street to Pier 18, Honolulu, Hawaii sent to us on February 18, 1983. Based on our review, we provide the following comments:

- a. Any work in the Kapalama Canal may require a Department of the Army (DA) permit.
- b. Most of the improvements to Nimitz Highway will occur in a Zone C, or area of minimal flooding, according to the Flood Insurance Study for the Oahu by the Federal Insurance Administration (FIA). One section of the highway improvements will occur in the Kalihi Stream flood plain, or more specifically, in the flood fringe area of Zone AO designation, where the average depth of flooding is 1 to 2 feet. See enclosures 1 and 2, prepared as part of the FIA flood study.

Sincerely,

Kiatuk Cheung  
Chief, Engineering Division

Enclosures



(7A)

(7B)

EVALUATION - U.S. DEPARTMENT OF THE ARMY, PACIFIC OCFAN DIVISION,  
CORPS OF ENGINEERS (3/11/83)

7A. Alternative IA has been selected for implementation. No work will be done in the Kapaia Canal; therefore, the project will not require a Department of the Army permit.

7B. The information regarding flooding has been included in the Final EIS.

BUILDING DEPARTMENT  
**CITY AND COUNTY OF HONOLULU**  
HONOLULU MUNICIPAL BUILDING  
500 SOUTH KING STREET  
HONOLULU, HAWAII 96813



EILEEN M. ANDERSON  
MAYOR

ROY H. TANZI  
DIRECTOR AND BUILDING SUPERINTENDENT

WILLIAM F. KEMULAR  
DEPUTY DIRECTOR

PB 83-153

EVALUATION - CITY AND COUNTY OF HONOLULU,  
BUILDING DEPARTMENT (2/24/83)

8A. The design plans for the project will be made available to your office upon completion.

February 24, 1983

U. S. Department of Transportation  
Federal Highway Administration  
Box 50206  
Honolulu, Hawaii 96850

Gentlemen:

Subject: Draft EIS, Makai Boulevard Concept  
(Middle Street to Pier 18)  
EIS NO. FHWA-HI-EIS-83-01-D

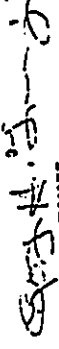
The proposed project may affect the Kalihī Kai Fire

Station.

We would like to review the design plans of the project when the plans become available.

Thank you for the opportunity to review the Draft EIS.

Very truly yours,

  
ROY H. TANZI  
Director and Building Superintendent

cc: J. Harada

1  
GEORGE B. JARVIS  
Governor of Hawaii



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
P O BOX 821  
HONOLULU, HAWAII 96809

MAR 21 1983 Your: HDA-HI

Mr. H. Kusumoto  
Division Administrator  
Federal Highway Administration  
Hawaii Division, Region Nine  
U. S. Department of Transportation  
Box 50206  
Honolulu, Hawaii 96850

Dear Mr. Kusumoto:

Thank you for the opportunity to comment on the draft environmental impact statement for the Hakai Boulevard concept.

Our records indicate that this project does not occur on historic properties listed on the Hawaii Register or the National Register of Historic Places, or eligible for inclusion on the National Register of Historic Places.

Due to the lack of archaeological surveys in the vicinity, we are unaware that significant resources exist in the project area. This does not confirm the absence of historical, cultural, architectural and/or archaeological resources on the property. If any previously unidentified sites or remains (such as artifacts, shell, bone, or charcoal) deposits; human burials; rock or coral alignments, pavings, or walls) are encountered, please inform the contractor to stop work and contact our historic sites office at 548-7460 immediately.

Sincerely,

SUSUMU ONO  
Chairman of the Board  
and

State Historic Preservation Officer

EVALUATION - STATE DEPARTMENT OF LAND AND NATURAL RESOURCES (3/21/83)

9A. Should any sites or remains be uncovered during construction, the contractor will halt work and the historic sites office will be notified.

SUSUMU ONO, Chairman  
Office of Land & Natural Resources  
1000 KALANOAU  
HONOLULU, HAWAII 96813  
DIVISIONS:  
ARCHAEOLOGICAL RESOURCES  
PLANT AND ANIMAL LIFE  
SCIENTIFIC RESOURCES  
CONSERVATION AND  
RECREATION  
CULTURAL RESOURCES  
LAND MANAGEMENT  
WATER AND LAND RELATIONS

EVALUATION - STATE DEPARTMENT OF HEALTH (3/18/83)

10A. The project will comply with the provisions of Title 11, Administrative Rules, Chapter 43, Community Noise Control for Oahu, Section 11-43-5(b)(2) Highway Noise.  
Alternative 1A has been selected for implementation.

CHARLES G. CLARK  
DIRECTOR OF HEALTH  
JOHN F. CHAMBERS, M.D.  
DEPUTY DIRECTOR OF HEALTH  
HENRY M. THOMPSON, M.A.  
DEPUTY DIRECTOR OF HEALTH  
MELVIN E. HOZUMI  
DEPUTY DIRECTOR OF HEALTH  
ADJUTANT GENERAL  
MELVIN E. HOZUMI  
DEPUTY DIRECTOR OF HEALTH



STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P.O. BOX 2193  
HONOLULU, HAWAII 96821  
March 18, 1983

IN REPLY, REFER TO FILE NO. EHS-55

**MEMORANDUM**  
To: Mr. H. Kusumoto, Division Administrator  
Federal Highway Administration, U.S. Department of Transportation  
From: Deputy Director for Environmental Health  
Subject: Environmental Impact Statement (EIS) for Makai Boulevard Concept,  
Middle Street to Pier 18, EIS No. FHWA-HI-EIS-83-01-D

Thank you for allowing us to review and comment on the subject EIS. On the basis that the project will comply with all applicable Public Health Regulations, please be informed that we do not have any objections to this project.

Alternatives III and IV are recommended because they adequately address both noise impact and air quality considerations.

(10A) The noise impact of the proposed project on Puuhale Elementary School is of the utmost concern. The project must be designed to conform with the provisions of Title 11, Administrative Rules, Chapter 43, Community Noise Control for Oahu, Section 11-43-5(b)(2) Highway Noise. If the school should be seriously affected by the construction of this project, mitigative measures such as scheduling of the loud operations during periods of school vacations, restricting the hours of construction activity, erecting noise barriers and relocating equipment must be instituted.

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

*Melvin E. Hozumi*  
MELVIN E. HOZUMI

cc: OEQC



EVALUATION - STATE DEPARTMENT OF ACCOUNTING  
AND GENERAL SERVICES (2/28/83)

WORLD WIDE  
MAILING SERVICE  
1000 N. KAUAIA  
HONOLULU, HAWAII

LETTER NO (P)1201.3



STATE OF HAWAII  
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES  
P. O. BOX 110, HONOLULU, HAWAII 96840

FEB 28 1983

Mr. H. Kusumoto  
Division Administrator  
U.S. Department of Transportation  
Federal Highway Administration  
Region Nine  
Hawaii Division  
Box 50206  
Honolulu, Hawaii 96850

Dear Mr. Kusumoto:

Subject: Draft EIS, Makai Boulevard Concept  
Middle Street to Pier 18  
EIS No. FHWA-HI-EIS-83-01-D

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

- (11A) 1. The four alternatives being considered will have minimum negative impact on Puuhale Elementary School.
- (11B) 2. Alternative IV (Full Viaduct) would be the most favorable alternative for Puuhale Elementary School because it would reduce traffic congestion and traffic noise and increase student safety.

If there are any questions, please have your staff call Mr. Herbert Ishida of the Public Works Division at 548-3921.

Very truly yours,

*Hideo Murakami*  
HIDEO MURAKAMI  
State Comptroller

- 11A. The project will have minimal impact on Puuhale Elementary School.
- 11B. The DOT has selected Alternative IA as the most economically feasible and acceptable plan.



DEPARTMENT OF THE ARMY  
HEADQUARTERS UNITED STATES ARMY SUPPORT COMMAND, HAWAII  
FORT SHAFTER, HAWAII 96859

April 5, 1983

REPLY TO  
ATTENTION OF:

Directorate of Facilities Engineering

EVALUATION - U.S. ARMY SUPPORT COMMAND, HAWAII (4/5/83)

- 12A. A formal request will be submitted to the Real Estate Division, Directorate of Facilities Engineering for the transfer of Department of Army properties during the design phase of the project.

US Department of Transportation  
Federal Highway Administration  
Box 50206  
Honolulu, Hawaii 96850

Gentlemen:

The Draft Environmental Impact Statement (DEIS) for the Haka Boulevard Concept, Middle Street to Pier 18, Honolulu has been reviewed. If rights-of-way through Department of Army (DA) properties are required for completion of the project, a formal request must be submitted to the Real Estate Division, Directorate of Facilities Engineering, US Army Support Command, Hawaii for timely consideration. The request should include a map delineating the DA tracts required for the project.

Thank you for the opportunity to comment on the DEIS.

Sincerely,

*Ronald A. Borrello*

Ronald A. Borrello  
Colonel, Corps of Engineers  
Director of Facilities Engineering

(12A)

XII-63

1/20/83



GEORGE R. ARYOHAN  
DIRECTOR

STATE OF HAWAII  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL  
130 HALEKUAHOLA STREET  
HONOLULU, HAWAII 96813

APR 19 1983  
RECEIVED  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL  
130 HALEKUAHOLA STREET  
HONOLULU, HAWAII 96813

EVALUATION - STATE OFFICE OF ENVIRONMENTAL  
QUALITY CONTROL (4/18/83)

13A: Alternative 1A has been selected as the most economically feasible and socially acceptable plan. Alternative 1A would propose improvements that would be consistent with your recommendation of an at-grade solution.

April 18, 1983

Dr. Ryokichi Higashionna, Director  
Department of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Dr. Higashionna:

Subject: Makai Boulevard Concept EIS

We have reviewed your alternatives for the Makai Boulevard Project. We would prefer an at-grade solution to your transportation problem rather than an above-grade one.

(13A)

XII-64

Sincerely,

*Jacqueline Parfell*  
Director

cc: Mr. H. Kusumoto  
Division Administrator  
Federal High Administration  
U.S. Dept. of Transportation  
P.O. Box 50206  
Honolulu, Hawaii 96850

APR 20 9 10 AM '83  
DEPARTMENT OF TRANSPORTATION  
HIGHWAY DIVISION

RECEIVED  
STATE DEPARTMENT  
OF TRANSPORTATION  
HIGHWAY DIVISION  
PLANNING BRANCH  
APR 20 2 27 PM '83





US Department  
of Transportation  
Federal Aviation  
Administration

AIRPORTS DISTRICT-OFFICE  
P.O. BOX 50244  
HONOLULU, HAWAII 96850

PU Box 52407  
Wilshire Plaza Center  
Los Angeles, CA 90009

EVALUATION - FEDERAL AVIATION ADMINISTRATION (4/1/83)

APR 1 1983

Mr. H. Kusumoto  
Division Administrator  
DOT, Federal Highway Administration  
Hawaii Division  
Box 50206  
Honolulu, Hawaii 96850

Dear Mr. Kusumoto:

This responds to your letter HDA-HI dated February 18, 1983, requesting comments on the Draft EIS, Makai Boulevard Concept, Middle Street to Pier 18, EIS No. FHWA-HI-EIS-83-01-D.

(14A) We have reviewed the document and request that Section 13 - List of Necessary Approvals - be expanded to include the following:

"Notice of Proposed Construction or Alteration

If Alternative III or IV is selected, notification to FAA may be required through submittal of data shown on FAA Form 7460-1, Notice of Proposed Construction of Alteration, to determine whether airport obstruction standards defined in FAR Part 77 are not violated."

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

Sincerely,

*David S. Yokoyama*  
DAVID S. YOKOYAMA  
Planning Engineer

James M. Cox  
Airports District Office Manager

14A. Alternative IA has been selected as the most economically feasible and socially acceptable plan. The alternative does not include any improvements that would violate airport obstruction standards.



UNITED STATES  
DEPARTMENT OF THE INTERIOR

OFFICE OF THE SECRETARY

PACIFIC SOUTHWEST REGION  
BOX 35099 • 450 GOLDEN GATE AVENUE  
SAN FRANCISCO, CALIFORNIA 94102  
(415) 558-8200

In Reply Refer To:  
ER 81/164

March 23, 1983

Mr. H. Kusumoto  
Division Administrator  
Federal Highway Administration  
U.S. Department of Transportation  
P.O. Box 50206  
300 Ala Moana Boulevard  
Honolulu, Hawaii 96850

Dear Mr. Kusumoto:

The Department of the Interior has reviewed the draft environmental statement for the Makai Boulevard Concept, Honolulu, Honolulu County, Hawaii. We offer the following comments.

The subject DEIS does not contain adequate discussion of potential impacts upon the water quality and the recreational and commercial fishery resources of Kechi Lagoon. Specifically, the statement does not address the concerns expressed in the letter sent by the Fish and Wildlife Service, on January 25, 1982, nor does it address the concerns of the State's Department of Land and Natural Resources as stated in their letter of February 9, 1982 regarding water quality and aquatic resources effects of the proposed activity.

(15B) We recommend that sections 4.4 and 4.6 of the DEIS be substantially revised and expanded to include a description of the estuarine environment of Kechi Lagoon and its important recreational and commercially valuable fishery resources. Sections 5.1, 5.2 and 6.1 also require expansion to include adequate consideration of project related impacts upon these resources. Specific measures to prevent silt- and pollutant-laden runoff waters from entering Kechi Lagoon should be developed and discussed, and alternatives for habitat degradation should be considered.

Thank you for the opportunity to review this document.

Sincerely,

*Patricia Sanderson*  
Patricia Sanderson Port  
Regional Environmental Officer

cc:  
Director, OEPR (w/incoming)  
Director, National Park Service  
Director, Fish and Wildlife Service  
Director, Geologic Survey

*Original letters for State.*

HONOLULU

To : Regional Director, National Park Service, San Francisco, CA

From : Pacific Islands Administrator, Fish and Wildlife Service, Honolulu, HI

Subject: Review of draft environmental impact statement (DEIS) for Makai Boulevard Concept (Militz Highway from Middle Street to Pier 18), Honolulu, Hawaii (ER 83/164)

The subject DEIS does not contain adequate discussion of potential impacts upon the water quality and the recreational and commercial fishery resources of Kechi Lagoon. Specifically, the statement does not address the concerns expressed in our letter of January 25, 1982, nor does it address the concerns of the State's Department of Land and Natural Resources as stated in their letter of February 9, 1982 regarding water quality and aquatic resources effects of the proposed activity.

We recommend that sections 4.4 and 4.6 of the DEIS be substantially revised and expanded to include a description of the estuarine environment of Kechi Lagoon and its important recreational and commercially valuable fishery resources. Sections 5.1, 5.2 and 6.1 also require expansion to include adequate consideration of project related impacts upon these resources. Specific measures to prevent silt- and pollutant-laden runoff waters from entering Kechi Lagoon should be developed and discussed, and alternatives for mitigation of habitat degradation should be considered.

cc: PWS/OEC, Washington, D.C.  
Regional Director, Portland, OR (AHP)

JIFord:sr:2/16/83  
Fig D

EVALUATION - U.S. DEPARTMENT OF INTERIOR (3/23/83)  
AND FISH AND WILDLIFE SERVICE (2/17/83)

- 15A. Alternative IA has been selected for implementation. Alternative IA proposes minor paving, restriping, provision for a new left turn opening to Libby Street and double left turn lanes to Sand Island Access and Waiakamilo Roads, and an improved traffic signal system. Improvements being proposed are quite minor, in comparison to the other alternatives. Therefore, there would be no significant impact upon water quality and commercial fishery resources.
- 15B. Discussions regarding Biological and Hydrological characteristics have been revised in the Final EIS to reflect the selected alternative.
- 15C. Adverse impacts to water quality or aquatic resources should not result due to the implementation of Alternative IA. Only minor improvements are being proposed, relative to the other alternatives, and excessive amounts of erosion and sedimentation are not probable. The Final EIS, however, does discuss erosion control measures to mitigate impacts which could occur during construction. The constructed improvements would not create substantial amounts of impervious surfaces, and should therefore, not facilitate an increase in surface runoff. Subsequently, pollutants that may potentially be swept into adjacent waters with increased runoff, will not result during operations of the project. Moreover, appropriate sections of the drainage system may be improved to lessen the levels of sediments and other contaminants entering surface and coastal waters.

TABLE 14

COMMENTING AGENCIES NOT REQUIRING AN EVALUATION

1. U.S. Navy, Facilities Engineer
2. U.S. Department of Transportation, Environmental Division
3. U.S. Department of Transportation, U.S. Coast Guard
4. University of Hawaii, Water Resources Research Center
5. U.S. Air Force
6. City & County of Honolulu, Board of Water Supply
7. State Department of Education
8. Hawaiian Telephone
9. City & County of Honolulu, Department of Parks and Recreation




HEADQUARTERS  
NAVAL BASE PEARL HARBOR  
PEARL HARBOR, HAWAII 96850

REPLY REFER TO:  
OOZA:Q1B:jam  
Ser 276

28 FEB 1983

# Memorandum

 U.S. Department of  
Transportation  
Office of the Secretary  
of Transportation

Mr. Heiوشي Kusumoto, Division Administrator  
Federal Highway Administration  
U.S. Department of Transportation  
Box 50206  
Honolulu, Hawaii 96850

Dear Mr. Kusumoto:

Draft Environmental Impact Statement  
Makai Boulevard Concept, Middle Street to Pier 18  
EIS No. FHMA-HI-EIS-83-01-D

The draft EIS for the Makai Boulevard Concept has been reviewed and the Navy has no comments to offer. When the study is completed, please provide us a copy of the final EIS.

Thank you for the opportunity to review the EIS.

Sincerely,




M. M. DAILAM  
CAPTAIN, CEC, U. S. NAVY  
FACILITIES ENGINEER  
BY DIRECTION OF THE COMMANDER

NO RESPONSE NECESSARY

Subject: Draft EIS: Hawaii, Makai Boulevard Concept, Oahu Date March 11, 1983  
FHMA-HI-EIS-83-01-D

Reply to  
Att'n of

from Eugene L. Lehr, Chief  
Environmental Division, P-37 

To Ali F. Sevin, Director  
Office of Environmental Policy, FHMA/HEV-1

We appreciate the opportunity to review this draft EIS. We have no comments.

NO RESPONSE NECESSARY





DEPARTMENT OF TRANSPORTATION  
UNITED STATES COAST GUARD

COMMANDER (dpl)  
Fourteenth Coast Guard District  
Prince Kahanui Federal Bldg  
300 Ala Moana Blvd  
Honolulu, Hawaii 96850  
(808) 546-2861

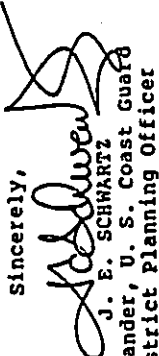
11000  
Serial 520  
23 FEB 1983

U. S. Department of Transportation  
Federal Highway Administration  
Box 50206  
Honolulu, Hawaii 96850

Dear Sir:

The Fourteenth Coast Guard District has reviewed the Draft EIS, Makai Boulevard Concept, Middle Street to Pier 18, and has no objection or constructive comments to offer at the present time.

Sincerely,

  
J. E. SCHWARTZ  
Commander, U. S. Coast Guard  
District Planning Officer  
By direction of

Commander, Fourteenth Coast Guard District

NO RESPONSE NECESSARY



University of Hawaii at Manoa

Water Resources Research Center  
Holmes Hall 283 - 2540 Dole Street  
Honolulu, Hawaii 96822

7 March 1983

Mr. H. Kusumoto  
Division Administrator  
Federal Highway Administration  
Region Nine, Hawaii Division  
Box 50206  
Honolulu, Hawaii 96850

Dear Mr. Kusumoto:

Subject: Draft Environmental Impact Statement for Makai Boulevard  
Concept, Middle Street to Pier 18, Project No. F-092-1 (16),  
Honolulu, Hawaii, January 21, 1983

We have reviewed the subject DEIS and have no comments to offer at this time. Thank you for the opportunity to comment. This material was reviewed by MRRC personnel.

Sincerely,

  
Edwin T. Murabayashi  
EIS Coordinator

ETH:ja

NO RESPONSE NECESSARY

AN EQUAL OPPORTUNITY EMPLOYER



DEPARTMENT OF THE AIR FORCE  
 HEADQUARTERS 1314 A. BASH WING (PALACE)  
 HICKAM AIR FORCE BASE, HAWAII 96852

4 MAR 1983

MAIL TO DEEV (Mr Yamada, 449-1831)

SUBJECT: Environmental Impact Statement for the Makai Boulevard Concept, Middle Street to Pier 18

TO: Office of Environmental Quality Control  
 550 Halekaunila Street, Room 301  
 Honolulu, HI 96813

1. This office has reviewed the subject EIS and has no comment relative to the proposed project.
2. We greatly appreciate your cooperative efforts in keeping the Air Force apprised of your project and thank you for the opportunity to review the document.
3. We are returning the copy of the EIS.

*Robert H. Okazaki*  
 ROBERT H. OKAZAKI  
 Chief, Engrg & Envtl Plng Div  
 Directorate of Civil Engineering

1 Atch  
 EIS

Cy to: US Department of Transportation, two Atch  
 Federal Highway Administration  
 Box 50206  
 Honolulu, HI 96850

NO RESPONSE NECESSARY

BOARD OF WATER SUPPLY  
 CITY AND COUNTY OF HONOLULU  
 630 SOUTH BERETANIA  
 HONOLULU HAWAII 96843



March 2, 1983

Mr. H. Kusumoto, Division Administrator  
 Federal Highway Administration  
 U. S. Department of Transportation  
 P. O. Box 50206  
 Honolulu, Hawaii 96850

Dear Mr. Kusumoto:

Subject: Your Letter of February 18, 1983 on the Draft EIS for the Makai Boulevard Concept, Middle Street to Pier 8

We have no objections to the proposed project. We anticipate no adverse impacts to potable groundwater resources or our water system facilities in the area.

*Response*

If you have any questions, please contact Lawrence Whang at 548-5221.

Very truly yours,

*Kazu Hayashida*  
 KAZU HAYASHIDA  
 Manager and Chief Engineer

EILEEN R ANDERSON, Mayor  
 YOSHIE H FUJINAKA, Councilwoman  
 ROBERT A SOULE, Councilman  
 MILTON J CHUN, Councilman  
 WALTER A BOOS, JR, Councilman  
 RYOKICHI HIGASHIMURA, Councilman  
 DONINA M HOWARD, Councilwoman  
 KAZU HAYASHIDA, Manager and Chief Engineer



STATE OF HAWAII  
DEPARTMENT OF EDUCATION  
P. O. BOX 2106  
HONOLULU, HAWAII 96820

OFFICE OF BUSINESS SERVICES

February 28, 1983

U.S. Department of Transportation  
Federal Highway Administration  
P.O. Box 50206  
Honolulu, HI 96850

Gentlemen:

SUBJECT: Draft EIS, Makai Boulevard Concept, Middle Street  
to Pier 18, EIS No. FHWA-HI-EIS-83-01-D

We have reviewed the subject document and have no additional  
comments to offer at this time. We would appreciate receiving a  
copy of the Final EIS document.

Thank you for the opportunity to review the subject matter.

Sincerely,

*James H. Thompson*  
Donnis H. Thompson  
Superintendent of Education

DHT:HL:j1

cc: Mr. James Edington  
Honolulu District

NO RESPONSE NECESSARY

AN EQUAL OPPORTUNITY EMPLOYER

HAWAIIAN TELEPHONE  
E113

March 11, 1983

Federal Highway Administration  
U.S. Department of Transportation  
P.O. Box 50206  
Honolulu, Hawaii 96850

ATTENTION: Mr. H. Kusumoto  
Division Administrator

Gentlemen:

Draft EIS, Makai Boulevard Concept, Middle Street  
to Pier 18, EIS No. FHWA-HI-EIS-83-01-D

We have reviewed the Draft Environmental Impact Statement and have  
no additional comments. Thank you for the opportunity to comment on  
this project.

We would appreciate receiving a copy of the final Environmental Impact  
Statement.

Sincerely,

*G. Kaneke*  
G. Kaneke  
Oahu Engineering & Construction  
Manager

NO RESPONSE NECESSARY

PO BOX 2201 • HONOLULU HAWAII 96821 • TELEPHONE AREA 531-7111 • CALL TOLL FREE

DEPARTMENT OF PARKS AND RECREATION  
**CITY AND COUNTY OF HONOLULU**  
830 SOUTH KING STREET  
HONOLULU, HAWAII 96813



BILLY A. ANDERSON  
MAYOR

EHIKO I. KUDO  
DIRECTOR

DAVID L. CARL  
DEPUTY DIRECTOR  
OSCAR R. ABRAHAM  
EXECUTIVE ASSISTANT

March 2, 1983

Mr. H. Kusumoto  
Division Administrator  
Federal Highway Administration  
U. S. Department of Transportation  
Box 50206  
Honolulu, Hawaii 96850

Dear Mr. Kusumoto:

SUBJECT: DRAFT EIS REVIEW FOR MAKAI BOULEVARD CONCEPT  
MIDDLE STREET TO PIER 18, EIS NO. FHMA-H-EIS-83-01-D

The proposed options for the Makai Boulevard Concept will not have any impact on our parks and recreation facilities. We are, however, interested in reviewing your plans as you progress since we have been considering stream greenbelts along Kalihi Stream, Kapalama Drainage Canal and Nuuanu Stream.

We will look forward to the review process for the option selected as the ultimate development of the Makai Boulevard.

Additionally, we are encouraged by the fruition of landscaped medial and street-side strips on portions of Himitz Highway. We hope that this will set the theme for the type of development of the future.

Sincerely yours,

(Mrs.) EHIKO I. KUDO, Director

EIK:vc

NO RESPONSE NECESSARY

MAKAI  
BOULEVARD  
CONCEPT

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XIII  
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#### XIV. REFERENCES

1. Highway Capacity Manual 1965, Highway Research Board Special Report 87; National Academy Sciences - National Research Council; Washington, D.C.; 1965.
2. "Development Plan Map," Development Plan for Primary Urban Center; Ordinance No. 81-79; City and County of Honolulu.
3. "Public Facilities Map," Development Plan for Primary Urban Center, Ordinance No. 81-79; City and County of Honolulu.
4. Traffic Assignment Project TA 80-16, Makai Boulevard Concept, Keehi Interchange to Pier 18, Project No. F-092-1 (16); Highways Division, Department of Transportation, State of Hawaii; 1982.
5. Final Environmental Impact Statement for Honolulu Harbor; U.S. Army Engineer District, Department of the Army; July, 1981.
6. Oahu Water Plan; Board of Water Supply, City and County of Honolulu; March, 1963.
7. Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai State of Hawaii; U.S. Department of Agriculture, Soil Conservation Service; August, 1972.
8. Detailed Project Report Sand Island Shore Protection, Honolulu, Hawaii; U.S. Army Engineer District, Department of the Army; September, 1978.
9. "Stream Channel Modification in Hawaii. Part A: Statewide Inventory of Streams; Habitat Factors and Associated Biota"; U.S. Department of Interior, Fish & Wildlife Service; 1978.
10. 40 Code of Federal Regulations, Part 50 and State of Hawaii Public Health Rules and Regulations, Chapter 42; Department of Health, State of Hawaii.
11. Air Quality Study for the Makai Boulevard Concept Keehi Interchange To Pier 18, Project No. F-092-1 (16), Honolulu, Oahu, Department of Transportation; Barry D. Root, Air Pollution Consultant; 1982.
12. "State of Hawaii Data Book"; Department of Planning and Economic Development; 1982.
13. "1980 Census of Population and Housing"; U.S. Bureau of the Census; 1980.
14. Consultation with Wastewater Management Division; Department of Public Works, City and County of Honolulu; April 22, 1982.

15. Honolulu Gateway Beautification Project; Highway Division, Department of Transportation, State of Hawaii; July 16, 1973.
16. 1995 Master Plan for Honolulu Harbor; Harbors Division, Department of Transportation, State of Hawaii; July 16, 1973.
17. The Aloha Tower Plaza; Hawaii International Services Agency, Department of Planning and Economic Development, State of Hawaii; March, 1981.
18. Conceptual Planning Study; Piers 2 to 18, Honolulu Harbor; Harbor Division, Department of Transportation, State of Hawaii; September, 1973.
19. "State Land Use District Boundary Maps"; Land Use Commission, Department of Planning and Economic Development, State of Hawaii.
20. State Transportation Plan; Department of Transportation; State of Hawaii; May, 1982.
21. "Zoning Maps"; Department of General Planning, City and County of Honolulu.
22. General Plan; City and County of Honolulu; January, 1977.
23. Special Management Area, Ordinance No. 84-4; City and County of Honolulu.
24. "Statewide Master Plan for Bikeways"; Department of Transportation, Land Transportation Facilities Division; State of Hawaii; March, 1977.
25. 23 USC 109 (n); Highways.
26. State Department of Health Rules and Regulations, Chapter 43, Section 10; Department of Health, State of Hawaii.
27. Noise From Construction Equipment and Operations, Building Equipment, and Home Appliances; U.S. Environmental Protection Agency; 1971.
28. Makai Boulevard Concept Keehi I.C. to Pier 18, Project No. F-092-1 (16), Noise Study; Design Engineering, Inc.; July, 1982.
29. Comparative Energy Analysis For The Makai Boulevard Concept Keehi I.C. To Pier 18, Project No. F-092-1 (16), Department of Transportation, Honolulu, Oahu; Barry D. Root; July, 1982.
30. "Flood Insurance Rate Maps"; U.S. Department of Housing and Urban Development (HUD), Federal Insurance Administration; September 3, 1980.

31. Chapter 205A, Hawaii Revised Statutes; State of Hawaii.
32. Conversation with U.S. Department of Interior, Environmental Services, regarding existence of wetlands in Kalihi; February, 1984.
33. Endangered Species Act, 16 USC 1531, et seq., 50 CFR 17.11 and 17.12; July, 1983.
34. Consultation with Historic Sites Section, Department of Land and Natural Resources, State of Hawaii; October, 1982.

**END**

**CERTIFICATION**

**I HEREBY CERTIFY THAT THE MICROPHOTOGRAPH APPEARING IN THIS REEL OF  
FILM ARE TRUE COPIES OF THE ORIGINAL DOCUMENTS.**

2006

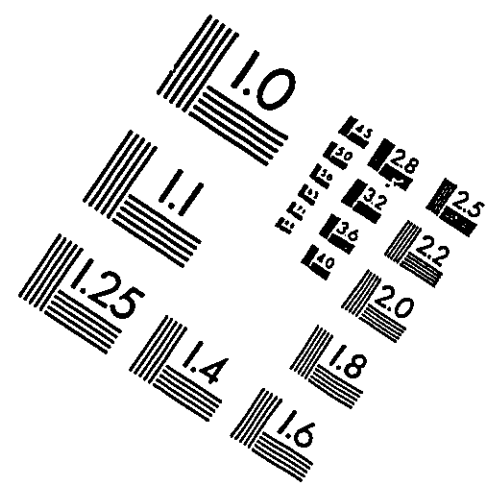
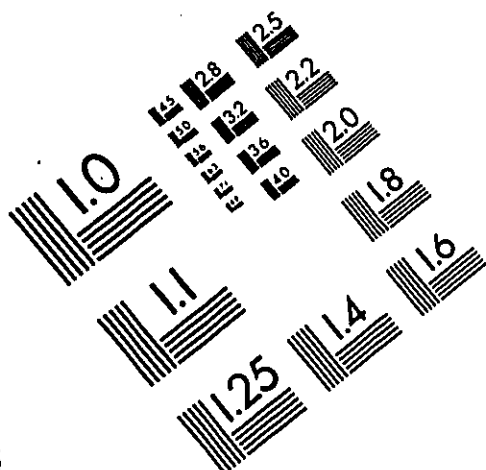
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*John J. [Signature]*

SIGNATURE OF OPERATOR

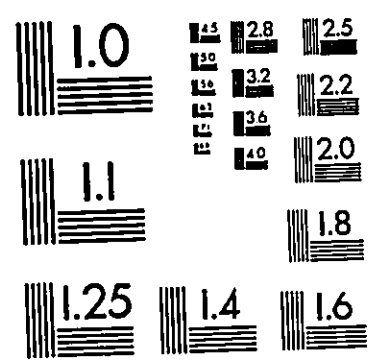
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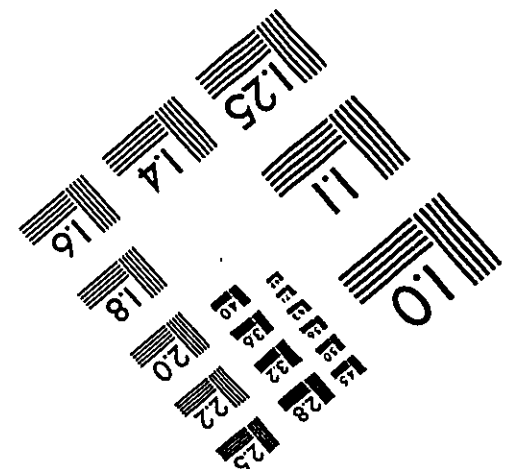
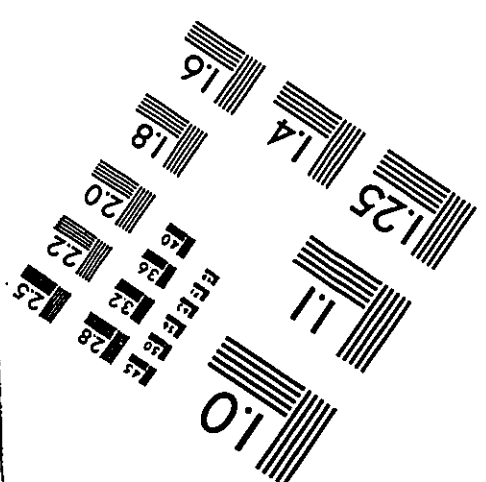


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PA-3 8 1/2"x11" PAPER PRINTED GENERAL TARGET

DENSITY TARGET



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