

REVISED

# ENVIRONMENTAL IMPACT STATEMENT

## A SECOND ENTRANCE TO WAHIAWA

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

BY **MHI PACIFIC**



Office of Environmental Quality Control  
Office Of The Governor  
850 Kalia Avenue  
Test Office Building, Third Floor  
Honolulu, Hawaii 96813

Wahiawa Second Entrance  
Project No. 806A-01-73

Involving the location of alternative  
highway corridors to provide a second point  
of highway access to Wahiawa  
Island of Oahu, Hawaii

REVISED  
ENVIRONMENTAL IMPACT STATEMENT

Prepared Under Consultant  
Contract by VTN Pacific  
for the

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION  
Highways Division

Submitted pursuant to Chapter 343  
Hawaii Revised Statutes

1/11/77  
Date

A. Harano  
Chief  
Highways Division



TABLE OF CONTENTS  
 REVISED ENVIRONMENTAL IMPACT STATEMENT  
 FOR A SECOND ENTRANCE TO WAHLAWA TOWN

	<u>Page</u>
LIST OF ILLUSTRATIONS	iv
SUMMARY	vi
CHAPTER 1: PROJECT DESCRIPTION	I-1
A. Introduction	I-1
B. Background	I-1
C. Need for Improvement	I-3
CHAPTER 2: DESCRIPTION OF PROJECT ALTERNATIVES	II-1
A. Introduction	II-1
B. Alternative A - The Southeast Corridor	II-2
C. Alternative B - The Southwest Corridor	II-7
D. Alternative C - The "No-Project" Alternative	II-7
E. Project Schedule and Funding	II-7
F. Project Design Features	II-9
CHAPTER 3: DESCRIPTION OF ENVIRONMENTAL SETTING	III-1
A. Topography	III-1
B. Geology and Soils	III-6
C. Surface and Ground Water	III-6
D. Air Quality	III-8
E. Noise	III-17
F. Archaeological, Paleontological, and Historical Features	III-21
G. Vegetation and Wildlife	III-21
H. Social Environment	III-22
I. Land Use	III-27
J. Circulation	III-30

TABLE OF CONTENTS (Continued)

	<u>Page</u>
CHAPTER 4: ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES	IV-1
COMPARISON OF ALTERNATIVES A & B	
A. Topography	IV-1
B. Geology and Soils	IV-2
C. Surface and Ground Water	IV-3
D. Air Quality	IV-6
E. Noise	IV-10
F. Archaeological, Paleontological, and Historical Features	IV-18
G. Vegetation and Wildlife	IV-18
H. Social Environment	IV-20
I. Land Use	IV-29
J. Circulation	IV-30
EVALUATION OF ALTERNATIVE C	IV-32
CHAPTER 5: UNAVOIDABLE ADVERSE IMPACTS	V-1
COMPARISON OF ALTERNATIVES A & B	
A. Topography	V-1
B. Surface and Ground Water	V-1
C. Air Quality	V-1
D. Social Environment	V-2
E. Land Use	V-2
F. Circulation	V-3
ALTERNATIVE C	V-3
CHAPTER 6: THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG- TERM PRODUCTIVITY	VI-1
CHAPTER 7: IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES	VII-1
BIBLIOGRAPHY	

TABLE OF CONTENTS (Continued)

	<u>Page</u>
APPENDIX A: ORGANIZATIONS AND PERSONS CONSULTED	A-1
APPENDIX B: ENGINEERING DATA	B-1
APPENDIX C: SOUND LEVEL DATA	C-1
APPENDIX D: LOCAL AIR QUALITY IMPACT ANALYSIS	D-1
APPENDIX E: CLEARANCES	E-1
APPENDIX F: COMMENTS AND RESPONSES TO EIS PREPARATION NOTICE	F-1
APPENDIX G: LIST OF APPROVALS REQUIRED	G-1
APPENDIX H: COMMENTS AND RESPONSES TO THE DRAFT EIS	H-1

## LIST OF ILLUSTRATIONS

<u>Figures</u>		<u>Page</u>
1.	Project Location	I-2
2.	Alignment of Alternatives	II-3
3.	On and Off Ramps for Interstate Defense Route H-2	II-4
4.	Alternates A-1, A-2, and A-3	II-5
5.	Sound Level Measurement Locations	III-18
6.	Zoning Map of Wahiawa	III-28
7.	Land Use Map of Wahiawa	III-29
B-1 through B-5	Plan and Profile of Alternative A	B-1
B-6	Plan and Profile of Alternative B	B-6
B-7	Typical Roadway Section	B-7
B-8	Typical Section at Guard Rail	B-8
B-9	Typical Section at Bridge	B-9
C-1 and C-2	Frequency of Occurrence of Sound Levels	C-9
C-3 and C-4	Sound Level Exceedance	C-11
D-1	Emission and Speed Correction Factors	D-6
D-2	Ground Level Concentration Ratio	D-7
<u>Plates</u>		
1 through 4	Alternative A	III-2
5 through 8	Alternative B	III-4
<u>Tables</u>		
1.	Average Daily Traffic	II-8
2.	Right-of-Way and Construction Costs	II-11
3.	Project Costs and Benefits	II-12
4.	Selected Soil Properties	III-7
5.	Water Quality Standards for Class 2 Waters	III-9
6.	State Water Quality Standards	III-11
7.	Federal and State Air Quality Standards	III-14
8.	Air Pollutants Monitored on Oahu	III-15
9.	Number of Times Air Quality Standards Were Exceeded	III-16

Tables (Continued)

Page

10.	Design Noise Levels	III-19
11.	Existing Noise Levels (L <sub>10</sub> )	III-20
12.	Birds and Mammals Occuring in Wahiawa	III-23
13.	Demographic Data	III-24
14.	Housing Data	III-26
15.	Estimated Emission Levels	IV-8
16.	Comparison of CO Emission Levels	IV-9
17.	Estimated 1-hour CO Concentrations	IV-11
18.	Projected Noise Levels - Alternative A	IV-13
19.	Projected Noise Levels - Alternative B	IV-14
20.	Estimated Resident Population	IV-21
21.	School Enrollment Projections	IV-27
D-1	Traffic Data Used in Air Quality Analysis	D-2
D-2	Estimated 1-Hour CO Concentrations	D-8

ENVIRONMENTAL IMPACT STATEMENT SUMMARY  
WAHIAWA SECOND ENTRANCE  
Project No. 806A-01-73

- A. Hawaii State, Highways Division  
Administrative Action Environmental Statement

( X ) Revised

- B. For additional information contact:

Mr. Tetsuo Harano  
Division Chief  
State Highways Division  
869 Punchbowl Street  
Honolulu, Hawaii  
Phone: (808) 548-5711

- C. Description of the proposed action:

The proposed action involves providing a second point of highway access to the community of Wahiawa in the City and County of Honolulu, Oahu, Hawaii. The highway will be a minor urban arterial with partial access control, and will include two 12-foot wide lanes with 10-foot shoulders. Construction of the highway (Alternative A without an Uluwehi Place connection) will be deferred until traffic monitoring demonstrates its need. No other proposed State or Federal actions in the area are included in the EIS.

- D. Summary of Environmental Impacts

1. A second entrance roadway to Wahiawa will accommodate community growth by facilitating the movement of people and goods within or through the area.
2. The Alternative A Corridor would reduce traffic volumes entering or leaving Wahiawa Town via the Wilson Bridge by providing a bypass through the East Range. This will provide a direct route to Wheeler Air Force Base and Mililani Town but will not have direct and easy access to Interstate Defense Route H-2.

3. Alternative B would also reduce traffic volumes on the Wilson Bridge section of Kamehameha Highway by providing a direct route between Wahiawa Town and areas that include Schofield Barracks, Wheeler AFB, Waipahu and others.
4. A second entrance roadway will facilitate the movement of emergency vehicles along the southern portion of Wahiawa.
5. Construction and existence of a new highway corridor in Wahiawa will have both short and long-term affects on visual quality along the corridor.
6. Surface drainage patterns along graded portions of a new roadway to Wahiawa will be altered contributing to a slight concentration of flow, and an increased potential for soil erosion. Mitigation measures will be applied during design and construction of the roadway to minimize any harmful effects associated with surface runoff or accelerated erosion.
7. Construction of a bridge crossing, placement of support pilings, and earthwork in or near Wahiawa Reservoir will have short-term impacts on water quality.
8. Soil compaction and roadway placement will reduce the area of pervious land surface available for infiltration of precipitation. This impact is not expected to adversely affect the quality or integrity of the groundwater basin underlying the Schofield Plateau.
9. Air pollutant emissions from construction and motor vehicle operation on the new roadway will have local and regional impacts on ambient air quality near Wahiawa. The concentrations of air pollutants however, are not expected to exceed Federal or State standards.
10. Ambient noise levels at various points within the community will be modified due to the redistribution of traffic flows from a second entrance roadway.
11. Biological communities will be affected by a second entrance roadway through removal of habitat and temporary displacement during construction. The biological

impact, however, is expected to be of relatively low intensity due to the types of wildlife present near Wahiawa, and the degree to which natural communities have been exposed to development in the past. Construction will remove some trees, but the number (to be established in the design stage) will be kept to a minimum.

12. Both corridors under consideration in the second entrance project would affect several public schools and residential areas through increases in potential safety hazards associated with increased traffic volumes.
13. Alternative A would not require displacement of residents. Alternative B would require displacement of the caretaker's cottage at the Wahiawa Sewage Treatment Plant and would reduce the effective size of the City and County Corporation Yard.
14. The alignment of Alternative A through the East Range would involve a major land use conflict with the military.
15. Alternative B would encroach upon Wahiawa Reservoir (preservation area), but would not affect any known sites of cultural significance.

E. Summary of Alternatives considered:

1. Alternative A - The Southeast Corridor (Recommended for the future). A second entrance roadway would be aligned from Kamehameha Highway to the predominantly residential southeast section of Wahiawa through the Schofield Barracks Military Reservation (East Range). This corridor includes 7 sub-alternate roadway configurations.
2. Alternative B - The Southwest Corridor (Rejected). This corridor would provide a new roadway between California Avenue and the intersection of Kunia Road and Wilikina Drive across Wahiawa Reservoir. No subalternates for this corridor were feasible owing to the short distance involved.

3. Alternative C - The "No Project" Alternative (Recommended for the present). The alternative of providing no second entrance roadway to Wahiawa was considered in compliance with State EIS preparation guidelines.

F. List of commenting agencies and organizations:

Appendix A contains a comprehensive listing of organizations and persons consulted.

G. Chronology of the EIS Review Process:

1. EIS Preparation Notice Distributed: August 8, 1975
2. EIS Circulated for Public Review: February 26, 1976
3. Public Hearing on the EIS: April 20, 1976
4. Revised EIS submitted to Environmental Quality Commission: February , 1977



---

CHAPTER 1  
PROJECT DESCRIPTION

---



## CHAPTER 1 PROJECT DESCRIPTION

### A. INTRODUCTION

This Environmental Impact Statement (EIS) describes the social, environmental, and economic impacts of alternative highway corridors presently under consideration for a second entrance into Wahiawa on the Island of Oahu. The project location is shown in Figure 1. This chapter describes the background, need, and objectives of the proposed second entrance project. Chapter 2 presents a description of alternative highway corridors that have been considered in present planning, and describes the technical and economic characteristics of highway corridors under detailed evaluation.

The Wahiawa second entrance project is presently in the "corridor location stage". This report identifies the environmental impacts associated with each corridor which was considered in the engineering study. Comments from public information meetings and hearings, and concerns of various Federal, State, and local reviewing agencies have been considered in selecting a final corridor.

### B. BACKGROUND

Kamehameha Highway, which passes through Wahiawa, is the only public highway access to the town across Wahiawa Reservoir. As shown in Figure 2 (Chapter 2), the town is bounded on the north, east, and south sides by Wahiawa Reservoir, and the only points of ingress and egress for vehicular traffic are Wilson Bridge over the south fork of the reservoir, and the Karsten Thot Bridge over the north fork. In 1960, the State Department of Transportation prepared a feasibility and cost study to evaluate a possible second point of highway access to Wahiawa. Subsequent to this initial study, other reports have been prepared to detail various engineering and economic aspects of highway access to Wahiawa. Among the reports pertinent to the present second entrance project are:



1. Advanced Planning Division. Feasibility and Cost Study for a Second Entrance into Wahiawa. Bureau of Highways, Department of Transportation, January, 1960.
2. Wilson Associates. Preliminary Engineering Study of Bridges to serve Wahiawa. March, 1963.
3. Highway Planning Section. Wahiawa Bridge: Preliminary Engineering Study and Cost Estimate. Bureau of Highways, Department of Transportation, February, 1964.
4. Highway Planning Branch. Preliminary Engineering Design Report for Wilson Bridge and Approaches. Highways Division, Department of Transportation, June, 1973.

The Preliminary Engineering Design Report for Wilson Bridge and Approaches recommended that Wilson Bridge be demolished and replaced with a new six lane facility, and that Kam Highway be widened to Kilani Avenue. This project is now in the "design stage", and for purposes of the Wahiawa second entrance project it is assumed that the replacement of Wilson Bridge and improvements to Kam Highway are complete. (Actual construction should be completed by late 1978.) The Wilson Bridge report also recommended that a second entrance study be conducted to further investigate highway access to Wahiawa.

#### C. NEED FOR IMPROVEMENT

The majority of residents in Wahiawa are employed outside of the town, and a large percentage commute to employment centers (Schofield Barracks, Wheeler AFB and Honolulu) via the Wilson Bridge. Replacement of this bridge and the widening of Kamehameha Highway would improve substantially the level of service for motorists and would accommodate traffic projections to the year 1997. In view of the foregoing, a second entrance into Wahiawa would appear unnecessary prior to 1997. However, it is anticipated that the level of service on Kamehameha Highway between California Avenue and the new Wilson Bridge would still be reduced during peak traffic hours, due to the increase in future levels of traffic and the unavailability of an alternative access roadway. A second entrance roadway into Wahiawa would

serve to redistribute and facilitate the movement of traffic both within and through Wahiawa Town. For example, an alternative access roadway would reduce the average daily traffic (ADT) on Kamehameha Highway, thereby contributing to a higher level of service at the intersection of Kamehameha Highway and California Avenue as well as the new Wilson Bridge crossing. In addition, a second entrance roadway would permit greater flexibility of travel for emergency vehicles (see Table 1 for traffic data).

---

CHAPTER 2  
DESCRIPTION OF PROJECT ALTERNATIVES

---



## CHAPTER 2 DESCRIPTION OF PROJECT ALTERNATIVES

### A. INTRODUCTION

The engineering and economic aspects of alternative highway corridors for the Wahiawa Second Entrance are described below. The alternatives described include all basic concepts that have been considered as well as the corridors under detailed evaluation in this EIS.

Alternative highway corridors investigated in the engineering report are primarily based on results of the reference studies listed in Chapter 1. Examination of these studies indicates that three basic corridors have been identified to provide a feasible second entrance to Wahiawa:

1. The Southeast Corridor. A second entrance roadway would be provided from Kamehameha Highway through the Schofield Barracks Military Reservation (East Range) to the predominantly residential southeast section of town. (Addressed as Alternative A in this EIS and recommended for future implementation when warranted.)
2. The Southwest Corridor. This alternative would involve an extension of Kunia Road to the north across Wahiawa Reservoir. The new highway would extend from the intersection of Kunia and Wilikina to the southwestern end of California Avenue. (Addressed as Alternative B in this EIS.)
3. Wilson Bridge Corridor. This second entrance alternative would provide a new bridge structure parallel to the existing Wilson Bridge, and would involve widening Kam Highway from the bridge to Kilani Avenue. The Wilson Bridge Corridor was originally mentioned in the March, 1963 study by Wilson Associates. Since that time, the plan to replace Wilson Bridge and widen Kam Highway has been implemented, and is presently in the "design stage". This corridor is therefore not considered as an alternative for the present second entrance project, and is not addressed further in this EIS.

4. No Project. The alternative of not providing a second entrance into Wahiawa rests upon the ability of a widened Wilson Bridge to adequately handle traffic up to 1997. (Addressed as Alternative C in this EIS and recommended for the present.)

Figure 2 shows a map of Wahiawa, and indicates the approximate alignments and locations of Alternatives A and B. Plans and profiles along with other selected engineering data pertinent to the following discussions are included in Appendix B.

B. ALTERNATIVE A - THE SOUTHEAST CORRIDOR (RECOMMENDED FOR THE FUTURE)

Alternative A, shown in Figure 2 and Appendix B, extends from Kamehameha Highway just north of the intersection of Kam and East Range Road, to Leilehua Road near Iliahi Elementary School. This alternative also includes a connection and roadway improvement of Rose Street by Wahiawa Intermediate School (a previously considered connection at Uluwehi Place has been dropped). The total length of the highway, including the Rose Street improvement, is approximately 2.6 miles.

Alternative A has evolved from a number of subalternates considered during initial planning. In concept, the southeast corridor will provide access to the southeast portion of the community, and will divert traffic from the heavily travelled Wilson Bridge. Two basic sets of subalternates were considered to provide this southeast access; 1) various connections at the western end of the new roadway, and 2) various connections to the southeast residential area.

Figure 3 shows a plan of "on" and "off" ramps for Interstate Defense Route H-2, and existing roadways in the immediate area. The first set of subalternates to Alternative A involved possible connections for the western end of the proposed roadway. An offramp from Interstate H-2 to the proposed roadway (crossing East Range Road) was eliminated due to the close proximity of existing ramps, conflicts with Leilehua Golf Course, high construction costs, and the low anticipated use by motorists.



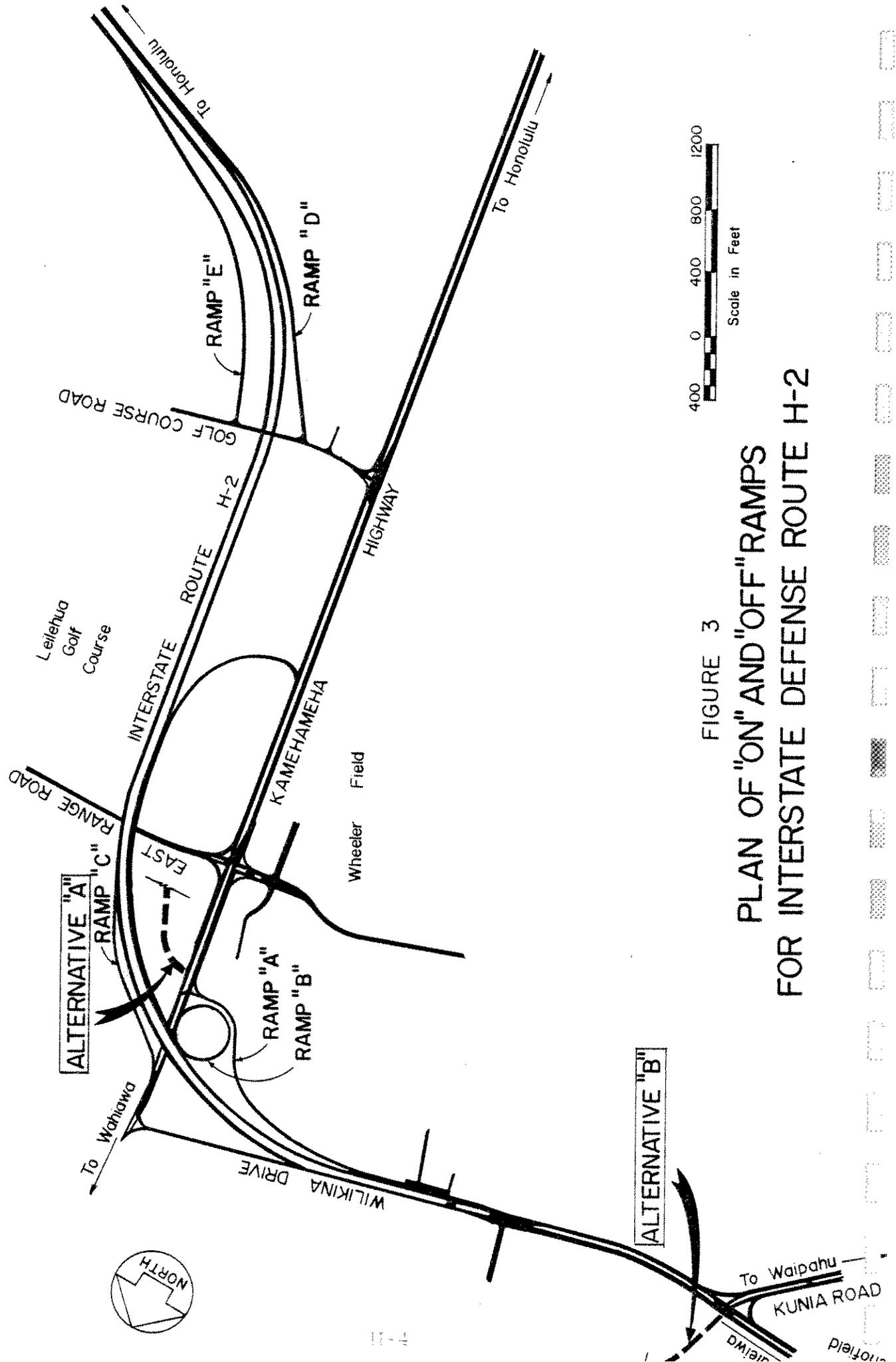


FIGURE 3  
 PLAN OF "ON" AND "OFF" RAMPs  
 FOR INTERSTATE DEFENSE ROUTE H-2

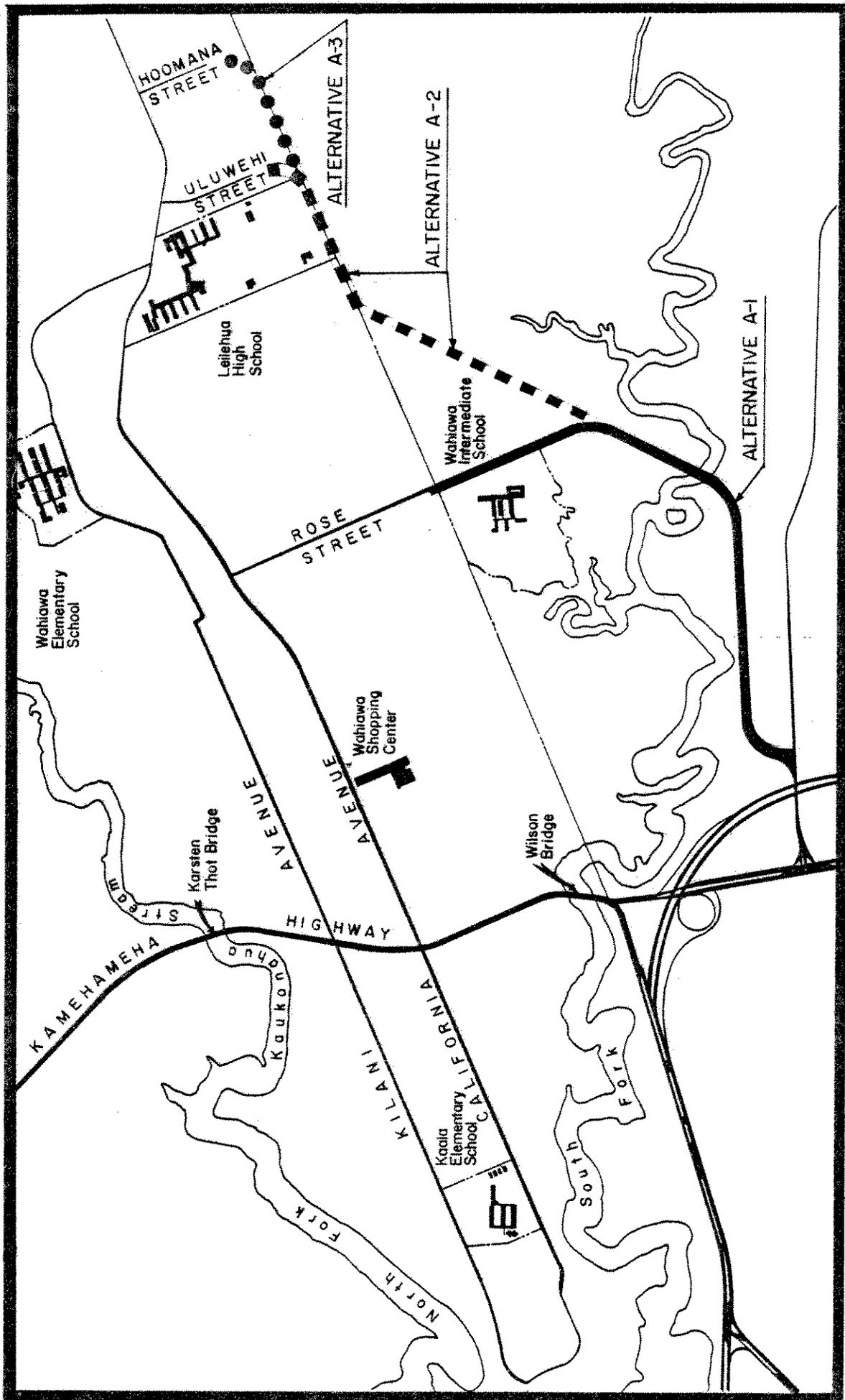


FIGURE 4  
ALTERNATIVES A-1, A-2 & A-3

The second set of subalternates (shown in Figure 4) were presented at the first public information meeting on February 5, 1975. These connections for the northeastern portion of the new roadway were designated:

1. Alternative A-1: Rose Street Connection
2. Alternative A-2: Uluwehi Street Connection
3. Alternative A-3: Hoomaa Street Connection

Alternative A-1 would provide only one connection at Rose Street. Owing to the excessive levels of traffic that would occur on Rose Street from this connection, it was eliminated as a separate corridor. It was determined, however, that multiple connections along the southeast corridor would be more effective in serving motorists, and the Rose Street connection was retained as part of the final Alternative A.

Alternative A-2 was considered in the roadway configuration to accommodate traffic around Leilehua High School, and to relieve congestion occurring on California Avenue in front of the school. It has been eliminated because there would not be enough traffic to justify the adverse impacts upon the neighborhood.

Alternative A-3 (connection at Hoomaa) was eliminated after determining that right-of-way acquisition would not be feasible for this subalternate. Alternative A was subsequently extended to Leilehua Road.

Following the evaluation of present and future traffic circulation requirements, and the consideration of public and agency comments, Alternative A (without an Uluwehi Place connection) has been selected as the recommended alternative. Major reasons for selecting Alternative A over Alternative B include; lower cost, relief of congestion at the intersections of California Avenue/Leilehua School and California Avenue/Kamehameha Highway, and its lesser visual impact on the Wahiawa Reservoir. However, construction of Alternative A will be deferred until such time that traffic conditions indicate a more pressing need for a second entrance into Wahiawa.

C. ALTERNATIVE B - THE SOUTHWEST CORRIDOR (REJECTED)

Alternative B extends from the intersection of Kunia Road and Wilikina Drive to the western end of California Avenue, and includes a bridge span of about 600 feet across Wahiawa Reservoir. Figure 2 and Appendix B depict the southwest corridor alignment. The total roadway length for this alternative is about 0.4 miles.

The shorter length of Alternative B greatly reduces the number of alternative alignments to feasibly provide a connection between Kunia Road and California Avenue. The alignment shown for this alternative will accommodate traffic flow to and from Kunia and Wilikina Roads with a minimum of turning movements, and will minimize disturbance to existing land uses.

D. ALTERNATIVE C - THE "NO-PROJECT" ALTERNATIVE (RECOMMENDED FOR THE PRESENT)

Not providing a second entrance into Wahiawa has been considered as a viable alternative throughout the evaluation of this project. Alternative C assumes that the new six-lane Wilson Bridge (now in the design stage with construction to be completed by late 1978) will adequately handle traffic to and from Wahiawa until 1997. For this reason, Alternative C - "No-Project", has been recommended for the present time. However, by 1997, if traffic projections are realized, congestion will reduce the level of service to the point where a second entrance will be required.

The impacts of these alternatives are described and compared in Chapter 4.

E. PROJECT SCHEDULE AND FUNDING

A time schedule for construction and completion of the second entrance project will not be finalized until the need arises. The "corridor location stage" and the objectives of the study are to evaluate the social, environmental, economic, and engineering aspects of each project, and to provide an opportunity for coordination and comment by governmental agencies, community groups, and the general public. After evaluation of all inputs, a corridor is selected for development. When the need arises, detailed

TABLE I

Year	Average Daily Traffic (Vehicles Per Day)				
	Kamehameha Highway (between Wilson Bridge & California Ave.)				
	Basic Condition	Condition with Alternative "A"	Condition with Alternative "B"	Alternative "A"	Alternative "B"
1977	25,050	21,100	20,420	3950	6400
1987	33,340	28,270	27,540	5070	7690
1997	41,650	35,430	34,700	6220	8990

construction plans, specifications, and cost estimates for the alternative selected will be completed in the "design stage". The design and construction of the selected alternative will be entirely funded by the State of Hawaii.

#### F. PROJECT DESIGN FEATURES

As indicated in Section E above, detailed construction plans, specifications, and cost estimates for State Highway projects are prepared during the "design stage" of project development. The basic design features of the Wahiawa second entrance project have been developed in sufficient detail, however, to: 1) describe existing and projected traffic data, 2) establish the roadway geometry and preliminary stationing and 3) estimate project costs and benefits for each alternative.

Table 1 shows the average daily traffic (ADT) flows for each alternative under consideration. In addition, the ADT's for Kam Highway are indicated for the selected years with and without each alternate. These traffic data are used in the EIS for noise and air quality impact analysis, and for comparison of alternatives. The data have also been used to determine basic roadway design requirements and project costs in the engineering study. Traffic data indicated in Table 1 were developed by the Highway Planning Branch of the Highway Division (December 1974, May 1975, and October 1976).

Plans and profiles for Alternatives A and B are shown in Appendix B - Engineering Data. The figures in Appendix B indicate the locations of major drainage and support structures, and show greater plan detail than Figure 2. The Wahiawa second entrance roadway will be designed as a minor urban arterial with partial access control. The design speed of the roadway will be 40 miles per hour with a maximum superelevation of 0.10 feet per foot. The minimum right-of-way width for either alternative will be 60 feet, and will include two 12-foot wide lanes and 10-foot wide shoulders. Figures B-7, B-8, and B-9 (Appendix B) show typical cross sections of the roadway.

Estimated right-of-way and construction costs for each alternate are summarized in Table 2. A breakdown of the costs and benefits for each alternative, computed on an annual basis, are indicated in Table 3. The design year for the second entrance to Wahiawa project is 1997. However, in computing the benefit to cost ratios for the project the 1987 ADT's were used.

Generally, Alternatives A and B have been aligned to avoid the necessity of relocating existing utilities (including electrical pylons and towers) and wastewater outflows. Prior to construction the project design plans will be reviewed by the appropriate agencies.

TABLE 2

ALTERNATIVE	COST ESTIMATES				TOTAL
	R. O. W.	CONSTRUCTION		Pavement	
		Major Structure Grading & Drainage			
A*	\$ 24,300	\$ 2,340,000	\$ 595,000		\$ 2,959,300
A**	\$ 342,400	\$ 2,340,000	\$ 595,000		\$ 3,277,400
B	\$ 734,700	\$ 3,967,000	\$ 60,000		\$ 4,761,700

\* Alternate A : If Federal Lands are donated.  
 \*\* Alternate A : If Federal Lands are not donated.

**TABLE 3  
BENEFIT ANALYSIS SUMMARY**

Alternative	ANNUAL COSTS							Net Costs (H <sub>i</sub> - H)
	R. O. W.	Major Structure Grading and Drainage	Pavement	Maintenance Proposed Condition	Cost of Improvements (H <sub>i</sub> )	Maintenance Basic Condition (H)		
A *	\$ 1700	\$175,500	\$56,200	\$21,900	\$255,300	\$13,700	\$241,600	
A **	\$24,000	\$175,500	\$56,200	\$21,900	\$277,600	\$13,700	\$263,900	
B	\$51,500	\$297,600	\$5700	\$16,200	\$371,000	\$14,000	\$357,000	

Alternative	ANNUAL BENEFITS			Benefit/Cost Ratio $\left(\frac{R - R_i}{H_i - H}\right)$
	Road User Cost Basic Condition (R)	Road User Cost Proposed Condition (R <sub>i</sub> )	Net Benefits (R - R <sub>i</sub> )	
A *	\$2,800,400	\$2,450,200	\$350,200	1.45
A **	\$2,800,400	\$2,450,200	\$350,200	1.33
B	\$3,508,600	\$2,906,200	\$602,400	1.69

\*Alternate A : If Federal Lands are donated.  
\*\*Alternate A : If Federal Lands are not donated.

0  
1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99

---

CHAPTER 3  
DESCRIPTION OF ENVIRONMENTAL SETTING

---



## CHAPTER 3 DESCRIPTION OF ENVIRONMENTAL SETTING

### A. TOPOGRAPHY

Topography, or more appropriately land form in the vicinity of the alternative highway corridors considered in the second entrance project, is pertinent to the EIS in describing the visual impacts of the highway. Land surface elevations along with land use and natural features in the corridor area affect the degree to which persons view construction and use of the facility.

Alternative A will begin at an elevation of about 863 feet above mean sea level (MSL) and will reach an elevation of 1,106 feet MSL at Leilehua Road to the northeast. The lowest point of this alternate will be about 845 feet MSL at the Interstate H-2 crossing. Alternative A traverses a relatively uniform terrain which slopes gently to the southwest within East Range. The roadway will be at a lower elevation than persons within the proposed Freshwater Park (Figure 2) or Wahiawa Intermediate School, and will range in distance from 0.1 to 0.4 miles from either point. The northeasternmost portion of this alternative (0.8 miles) will be immediately adjacent to the northern boundary of the East Range Military Reservation, and will be in view of persons between Leilehua High School and Leilehua Road. Vegetation over the southeast corridor provides a visual barrier between the south fork of the reservoir and the military reservation boundary.

The profile of Alternative B ranges from 866 feet MSL to 853 feet MSL with the ends of the roadway at approximately the same elevation (see Appendix B). The low point of this alternative is on the north side of Wahiawa Reservoir near the Wahiawa Sewage Treatment Plant. Alternative B is a more visually dominant structure than Alternative A owing to the number and frequency of persons in this area of the reservoir. The bridge structure of Alternative B will affect the visual environment in the immediate area.

Plates 1 through 8 show the typical land form, vegetation and visual character at selected points in the southeast and southwest corridors.



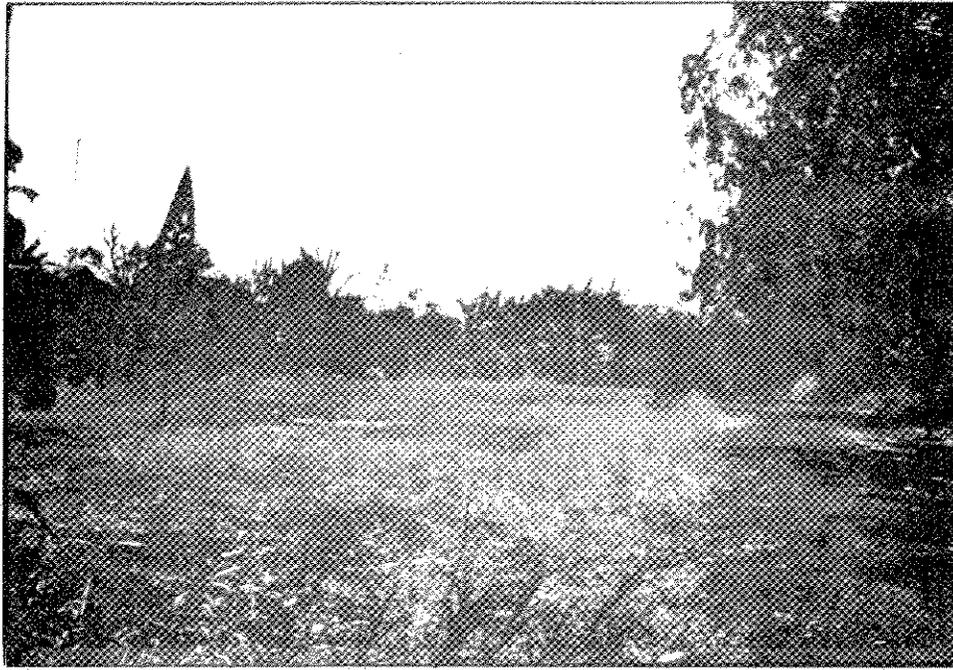


PLATE 1  
ALTERNATIVE A

Looking northeastward at the  
East Range Military Boundary  
near Uluwehi place.

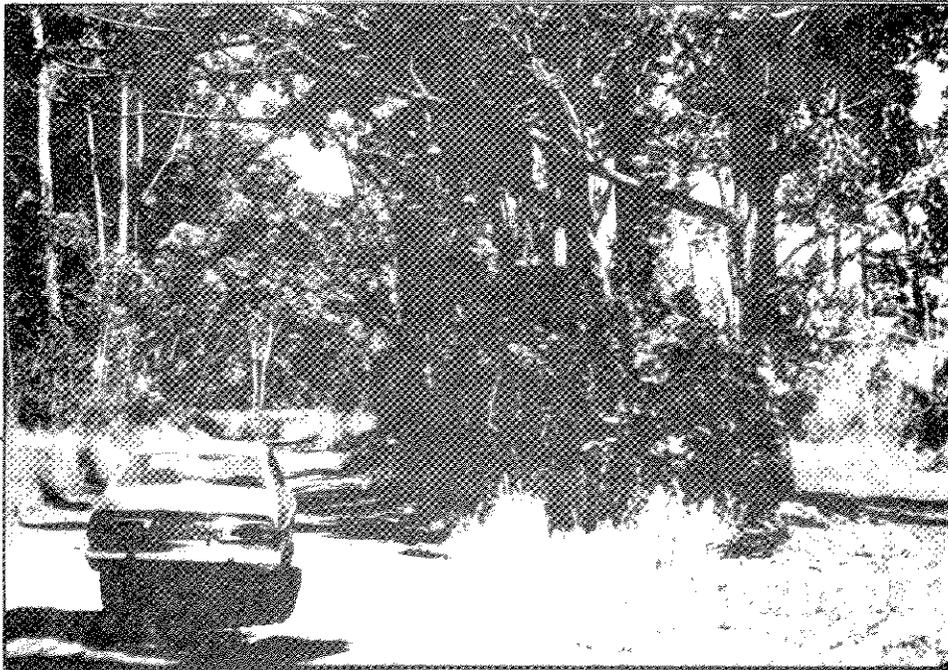


PLATE 2  
ALTERNATIVE A

Looking to the southwest from  
the East Range Military Boundary  
near Uluwehi place.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that this is essential for ensuring transparency and accountability in the organization's operations.

2. The second part of the document outlines the various methods and tools used to collect and analyze data. It highlights the need for consistent and reliable data collection processes to support informed decision-making.

3. The third part of the document focuses on the role of technology in modern data management. It discusses how advanced software solutions can streamline data collection, storage, and analysis, leading to more efficient and accurate results.

4. The fourth part of the document addresses the challenges associated with data security and privacy. It provides guidance on implementing robust security measures to protect sensitive information from unauthorized access and breaches.

5. The fifth part of the document explores the importance of data quality and integrity. It discusses strategies for identifying and correcting errors in data collection and ensuring that the information used for analysis is accurate and reliable.

6. The sixth part of the document discusses the ethical considerations surrounding data collection and use. It emphasizes the need for transparency in data practices and the protection of individual privacy rights.

7. The seventh part of the document provides a summary of the key findings and recommendations. It reiterates the importance of a comprehensive data management strategy that encompasses all aspects of data collection, analysis, and security.

8. The final part of the document offers concluding thoughts on the future of data management. It suggests that continued investment in technology and training will be essential for organizations to stay competitive in a data-driven world.



PLATE 3  
ALTERNATIVE A

Roadway in the East Range Military  
Reservation southwest of Wahiawa  
Intermediate School.

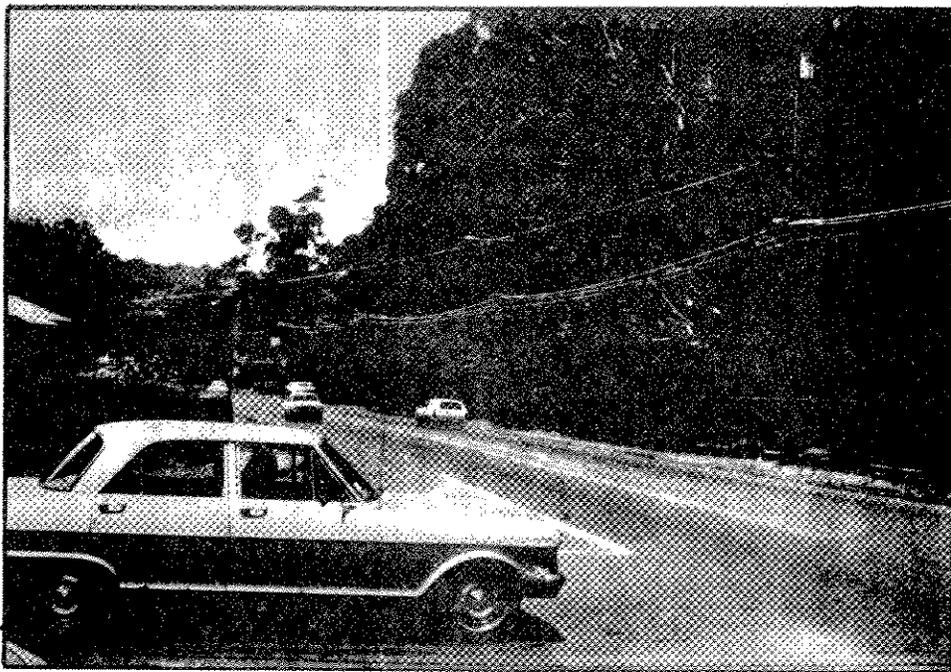
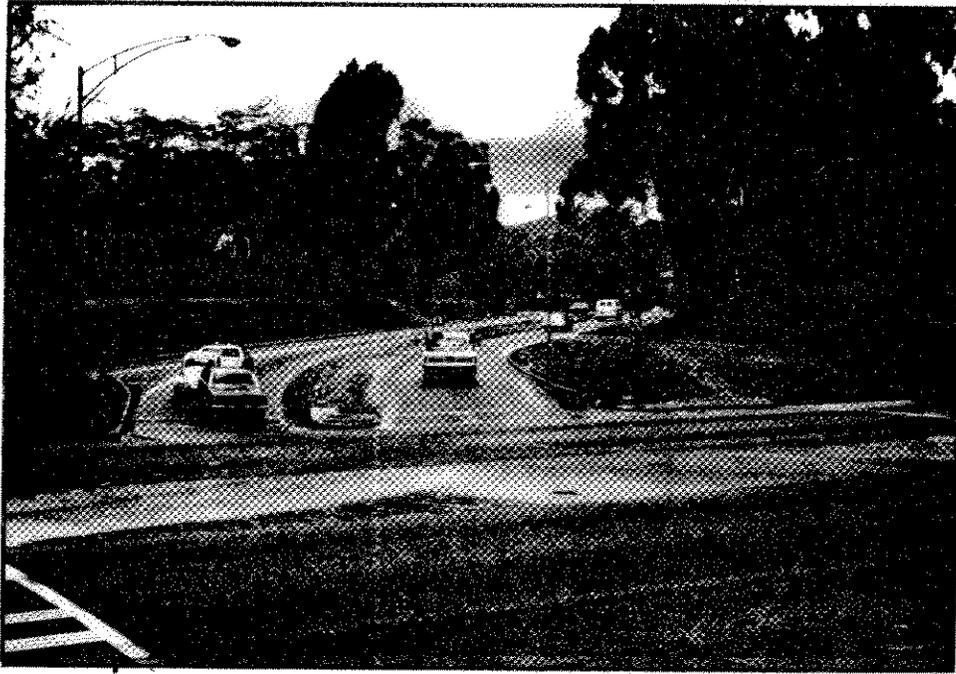


PLATE 4  
ALTERNATIVE A

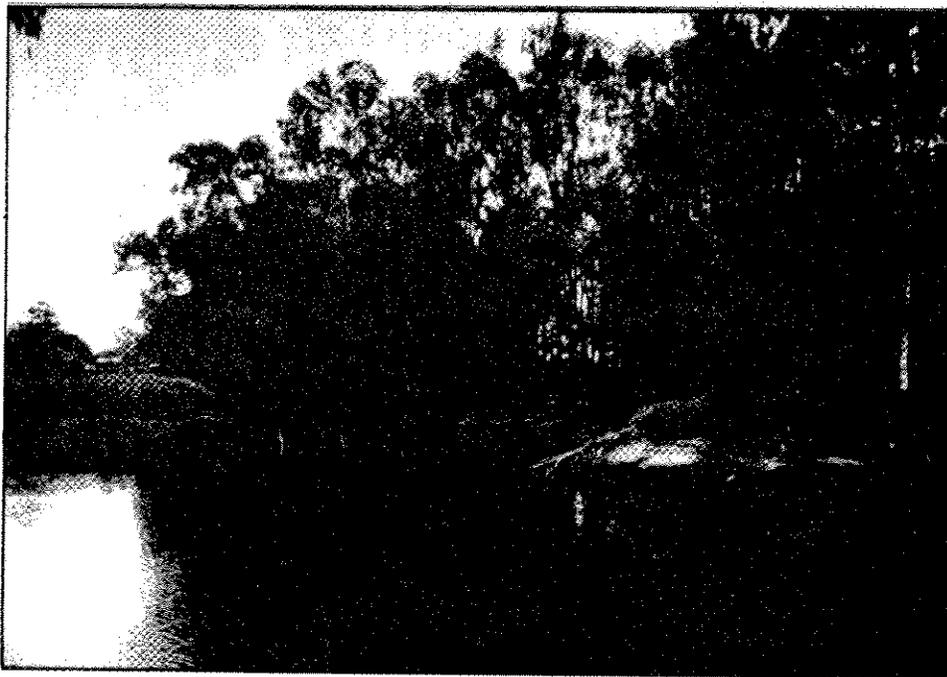
California Avenue at the Wahiawa  
Botanical Garden





**PLATE 5**  
**ALTERNATIVE B**

Looking south toward the intersection  
of Kunia Road and Wilikina Drive



**PLATE 6**  
**ALTERNATIVE B**

View toward the southeastern shore  
of Wahiawa Reservoir from the  
sewage treatment plant.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. This is essential for ensuring the integrity of the financial data and for providing a clear audit trail. The records should be kept up-to-date and should be easily accessible to all relevant parties.

2. The second part of the document outlines the various methods used to collect and analyze data. These methods include direct observation, interviews, and the use of specialized software. Each method has its own strengths and weaknesses, and it is important to choose the most appropriate one for the specific situation.

3. The third part of the document describes the results of the data collection and analysis. This includes a detailed breakdown of the data and a discussion of the key findings. The results show that there is a significant correlation between the variables being studied, and this has important implications for the field.

4. The final part of the document provides a conclusion and a list of recommendations. The conclusion summarizes the main points of the study, and the recommendations provide guidance for future research and practice. It is hoped that this document will be helpful to anyone interested in this area of study.

5. The first part of the document discusses the importance of maintaining accurate records of all transactions. This is essential for ensuring the integrity of the financial data and for providing a clear audit trail. The records should be kept up-to-date and should be easily accessible to all relevant parties.

6. The second part of the document outlines the various methods used to collect and analyze data. These methods include direct observation, interviews, and the use of specialized software. Each method has its own strengths and weaknesses, and it is important to choose the most appropriate one for the specific situation.

7. The third part of the document describes the results of the data collection and analysis. This includes a detailed breakdown of the data and a discussion of the key findings. The results show that there is a significant correlation between the variables being studied, and this has important implications for the field.

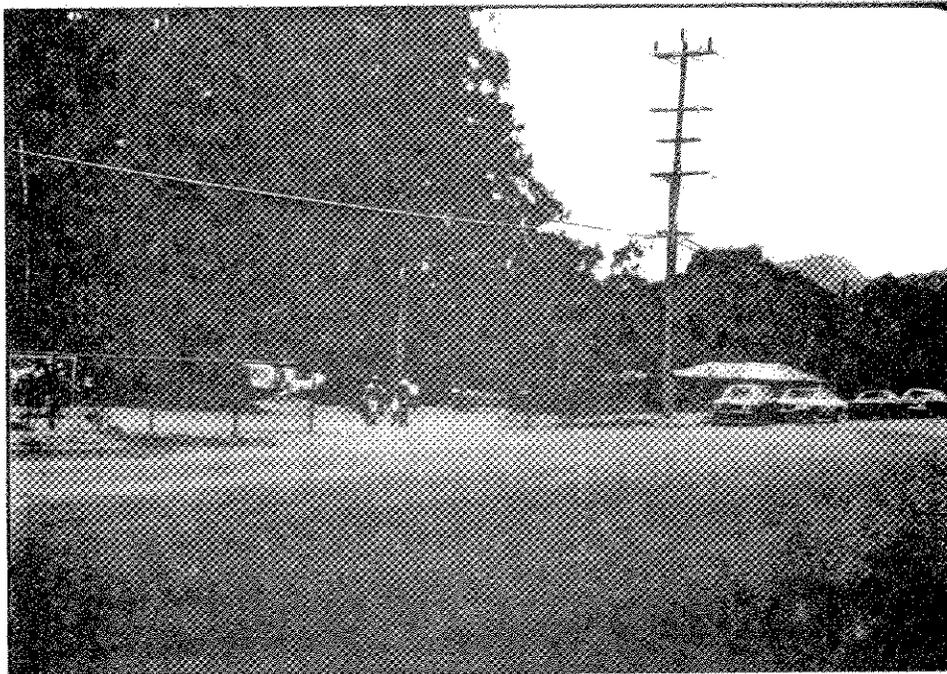
8. The final part of the document provides a conclusion and a list of recommendations. The conclusion summarizes the main points of the study, and the recommendations provide guidance for future research and practice. It is hoped that this document will be helpful to anyone interested in this area of study.





**PLATE 7**  
**ALTERNATIVE B**

Looking westward from the Wahiawa  
treatment plant outfall.



**PLATE 8**  
**ALTERNATIVE B**

View of the Corporation Yard from  
Kaala Elementary School.



## B. GEOLOGY AND SOILS

Geologic features within the area of a proposed structure are identified in the EIS to determine the level of possible hazard to the structure from seismic activity, and to evaluate the degree to which construction and operation of a project may result in major modification of local geologic features. Geologic features are also described as they influence surface and groundwater occurrence and behavior. Section C of this chapter identifies the major geologic features pertinent to the water resources of Wahiawa.

The structural, chemical, and hydrologic properties of soils are the main factors of interest in determining geologic impacts associated with a highway. A roadway, being an "at-grade" facility, is more resistant to lateral forces induced by seismic activity than a building, and more importantly is not occupied by persons for an extended length of time. The bridge structures crossing Wahiawa Reservoir for the second entrance corridors are, however, subjected to more complex lateral forces, and must be designed appropriately. Oahu, Molokai and Lanai are in Seismic Zone 1 (International Conference of Building Officials, 1970). Zone 0 for seismic risk represents "no damage" to structures, and Zone 3 represents "major damage".

The soil types and characteristics described below were taken from Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai - State of Hawaii (USDA - SCS, August 1972). Alternative A will traverse four basic soil types: Wahiawa WaA, WaB), Helemano (HLMG), Paaloa (PaC), and Leilehua (LeB). Alternative B will traverse three soil types: Manana (MoB), Helemano (HLMG), and Wahiawa (WaA). Table 4 summarizes selected properties of each soil type.

## C. SURFACE AND GROUNDWATER

Wahiawa Reservoir and any surface drainage channels that may be crossed or intercepted by an alternative highway alignment are the major surface water features of interest in this impact analysis. Wahiawa Reservoir has a capacity of 7,671 acre-feet (2.5 billion gallons) and is the largest reservoir in the islands (USGS, 1971). Surface runoff from the Koolau Range is impounded to form the reservoir. The drainage area tributary to the reser-

TABLE 4  
 SELECTED PROPERTIES OF SOILS  
 WAHIAWA SECOND ENTRANCE

Soil Type (Alternative)	Depth From Surface (Inches)	USDA Texture	Unified Soil Classification	Permeability (Inches Per Hour)	Shrink- Swell Potential	Corro- sivity	Erosion Hazard
1. Helemano (Alt. A, B)	0-60	Silty Clay	MH	2.0 - 6.3	Moderate	Low	Severe to very severe
2. Leilehua (Alt. A)	0-75	Silty Clay and Clay	MH-CH	2.0 - 6.3	Moderate	High	Slight
3. Manana (Alt. B)	0-15	Silty Clay Loam and Silty Clay	MH	2.0 - 6.3	Moderate	High	Slight
4. Paalooa (Alt. A)	0-60	Silty Clay and Clay	MH	2.0 - 6.3	Low	High	Slight to moderate
5. Wahiawa (Alt. A, B)	0-60	Silty Clay	MH	2.0 - 6.3	Low	Moderate to low	Slight

Source: USDA - Soil Conservation Service. Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai State of Hawaii. August, 1972.

voir includes the 17 square-mile Kaukonahua drainage system, and the upper Poamoko system.

Beneficial uses of Wahiawa Reservoir are for agricultural water supply, boating, fishing, and aesthetic enjoyment. The Waialua Sugar Company irrigates sugar cane with water distributed from Wahiawa Reservoir along with supplies from Helemano, Opaepa, and Kamananui Reservoirs. Nutrients added to the reservoir by the sewage treatment plant outfall near the western end of California Avenue contribute to maintenance of a good fish population and a popular fishing spot on the reservoir. Water quality standards for Wahiawa Reservoir (Dept. of Health, June 25, 1975) are shown in Tables 5 and 6.

Alternative A crosses the South Fork Kaukonahua Stream south of Wahiawa Intermediate School, and continues slightly northward of two unnamed drainages which enter a small intermittent lake near the reservoir. Alternative B crosses Wahiawa Reservoir about 0.9 miles above the dam, and does not intercept any major drainage courses.

Wahiawa is situated on the Schofield Plateau between the Waianae and Koolau Mountain Ranges, and is underlain by a groundwater reservoir in lava formations. The reservoir has an area of about 15 square-miles, and is bounded on the north and south by subsurface geologic features. Groundwater use in the Schofield Plateau has been about 8 million gallons per day (mgd) for municipal and industrial uses (USGS, 1971). The groundwater reservoir underlying Wahiawa is recharged by subsurface flow from the Koolau Range, and by infiltration of rainfall and stream flow on the plateau. Approximately 200 mgd of groundwater is presently available in excess of streamflow, evapotranspiration, and existing uses (USGS, 1971).

#### D. AIR QUALITY

The significance of air pollutant emissions during highway construction and road use associated with each alternative corridor is a function of existing air quality standards, meteorological conditions, other emission sources, and existing air quality.

Ambient air quality standards applicable on Oahu and the other islands have been adopted by the State of Hawaii and the Federal Government. The Federal primary and secondary standards were

TABLE 5  
WATER QUALITY STANDARDS  
APPLICABLE TO CLASS 2 WATERS  
STATE OF HAWAII

1. Microbiological Requirements

The median coliform bacteria shall not exceed 1,000 per 100 ml, nor shall more than 10% of the samples exceed 2,400 per 100 ml during any 30-day period.

Fecal coliform content shall not exceed an arithmetic average of 200 per 100 ml during any 30-day period nor shall more than 10% of the samples exceed 400 per 100 ml in the same time period. For such portion of Class 1 waters from which water is withdrawn for distribution for distribution for drinking water or food processing following simple chlorination, the fecal coliform content shall not exceed an arithmetic average of 20 per 100 ml during any calendar month.

2. pH - Units

Not less than 6.5 nor higher than 8.5

3. Nutrient Materials

Total phosphorus, not greater than 0.20 mg/l; except not greater than 0.05/mg/l for waters entering lakes or reservoirs.

4. Dissolved Oxygen (except from natural causes)

Not less than 5.0 mg/l.

5. Temperature

Temperature of receiving waters shall not change more than 1.5° from natural conditions.

6. Turbidity

Secchi disc or secchi disc equivalent as "extinction coefficient" determinations shall not be altered from natural conditions more

than 5% for Class AA or Class 1 waters, 10% for Class A or Class 2 waters, or 20% for Class B waters.

7. Radionuclides

Concentrations of radioactive materials shall not exceed minimum concentrations which are feasible to achieve. In no case shall such material exceed the limits established in the 1962 Public Health Service Drinking Water Standards (or later amendments) or 1/30th of the MPCw values given for continuous occupational exposure in the National Bureau of Standards Handbook No. 69. The concentrations in water shall not result in accumulation of radioactivity in plants or animals that result in a hazard to humans or harm to aquatic life.

The concentration of radioactive materials present in fresh, estuarine, and marine waters shall be less than those that would require restrictions on the use of organisms harvested from the area in order to meet the Radiation Protection Guides recommended by the Federal Radiation Council.

---

Source: State Department of Health, Chapter 37, Public Health Regulations, May, 1974.

TABLE 6

WATER QUALITY STANDARDS  
APPLICABLE TO ALL WATER AREAS  
STATE OF HAWAII

All waters shall be free of substances attributable to domestic, industrial, or other controllable sources as follows:

1. Materials that will settle to form objectionable sludge and bottom deposits;
2. Floating debris, oil, grease, scum, and other floating materials;
3. Substances in amounts sufficient to produce taste or odor in the water or detectable off-flavor in the flesh of fish, or in amounts sufficient to produce objectionable color, turbidity, or other conditions in the receiving waters;
4. High temperature, biocides, pathogenic organisms, toxic, corrosive, or other deleterious substances at levels or combinations sufficient to be toxic or harmful to human, animal, plant or aquatic life or in amounts sufficient to interfere with any beneficial use of the water. As a minimum, evaluation by use of a 96-hour bioassay as described in the most recent edition of Standard Methods for the Examination of Water and Wastewater shall be conducted. Survival of test organisms shall not be less than that in controls which utilize appropriate experimental water;
5. Substances and conditions or combinations thereof in concentrations which produce undesirable aquatic life.

All waters shall also be free from soil particles resulting from erosion on land involved in earthwork, such as the construction of public works; highways; subdivisions; recreational, commercial, or industrial developments; or the cultivation and management of agricultural lands. This standard shall be deemed met if it can be shown that the land on which the erosion occurred or is occurring is being managed in accordance with soil conservation practices acceptable to the Director, and that a

comprehensive conservation program is being actively pursued, or that the discharge has received the best degree of treatment or control practicable under existing technology. The determination of compliance with the standard shall be made by the Director, consistent with the Hawaii Administrative Procedure Act and the Rules of Practice and Procedure of the Department of Health.

---

Source: State Department of Health, Chapter 37, Public Health Regulations, May, 1974.

established by the U. S. Environmental Protection Agency (EPA) pursuant to the Clean Air Act of 1970. Chapter 42 of the State Public Health Regulations specify ambient air quality standards pursuant to HRS 322-64 (9). Table 7 shows the present Federal and State standards for ambient air quality, and indicates the objective of setting a standard for each pollutant. The pollutants of concern in this impact analysis are carbon monoxide (CO), hydrocarbons (HC), nitrogen oxides (NO<sub>x</sub>), and particulates.

Meteorological conditions affect the dispersion of pollutants which are discharged into the atmosphere. Wind conditions and inversion frequency are the principal variables of interest in air quality analysis. The northeasterly trade winds prevail throughout the year over the islands, ranging in occurrence from greater than 90 percent of the time during the summer to only about 50 percent in January (National Weather Service - NOAA, 1974). During the transition between winter and summer seasons, it is fairly common to experience "Kona" weather which is characterized by southerly winds, high humidities, and heavy rains (1st Weather Wing, 1969). Under a trade wind situation, a moderate to strong low level inversion is usually found between 6,000 to 8,000 feet MSL.

Major air pollutant emission sources in Honolulu County are motor vehicles, steam-electric utilities and other stationary sources, and agricultural field burning. In 1973, transportation-related emission sources accounted for 76 percent of the total emissions in the County. Stationary sources accounted for 12 percent, solid waste disposal contributed five percent, industrial process losses equaled five percent, and agricultural field burning contributed two percent of total pollutant emissions. Motor vehicles are by far the major emission source contributing 413,500 tons/year CO, 67,900 tons/year HC, and 50,700 tons/year NO<sub>x</sub> in 1973. Motor vehicle emissions represented 73 percent of the total emissions in 1973 (Dept. of Health, 1973).

The State Department of Health presently maintains 11 air quality monitoring stations throughout the islands. Seven of the stations are located on Oahu. Table 8 shows the pollutants which are monitored at each station on Oahu. Since these stations are too far from the project area to have relevant data, the American Lung Association took a 2½-hour carbon monoxide measurement at the Wilson Bridge on April 5, 1976. The average reading was 4 mg/m<sup>3</sup> (5:40-8:10 a.m.) and the peak-hour reading was 6 mg/m<sup>3</sup> (7:10-8:10 a.m.).

TABLE 7  
STATE OF HAWAII AND FEDERAL  
AMBIENT AIR QUALITY STANDARDS

	Pollutant	Sampling Period	Federal Standards		State Standards	Objective
			Primary	Secondary		
1.	Suspended Particulate Matter  (micrograms per cubic meter)	Annual Geometric Mean	75	60	—	To prevent health effects attributable to long continued exposure.
		Annual Arithmetic Mean	—	—	55	
		Maximum Average in Any 24 Hours	260	150	100	
2.	Sulfur Dioxide  (micrograms per cubic meter)	Annual Arithmetic Mean	80	60	20	To prevent pulmonary irritation and odor.
		Maximum Average in Any 24 Hours	365	260	80	
		Maximum Average in Any 3 Hours		1300	400	
3.	Carbon Monoxide  (milligrams per cubic meter)	Maximum Average in Any 8 Hours		10	5	To prevent interference with the capacity of the blood to transport oxygen.
		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.	Photochemical Oxidants  (micrograms per cubic meter)	Maximum Average in Any 1 Hour		160	100	To prevent eye irritation and possible impairment of lung function in persons with chronic pulmonary disease, and to prevent damage to vegetation.
6.	Nitrogen Dioxide  (micrograms per cubic meter)	Annual Arithmetic Mean		100	70	To prevent possible risk to public health and atmospheric discoloration.
		Maximum Average in Any 24 Hours			150	

Source: State Department of Health. *Hawaii Air Quality Data*. Environmental Health Division, Air Sanitation Branch, February 20, 1973.

TABLE 8

SUMMARY OF POLLUTANTS SAMPLED  
AT EACH AIR MONITORING STATION ON OAHU

SITE LOCATION	CONTAMINANT MEASURED				
	<u>Particulate Matter</u>	<u>Carbon Monoxide</u>	<u>Oxidants</u>	<u>Nitrogen Dioxide</u>	<u>Sulfur Dioxide</u>
1. Barbers Point	X			X	X
2. Barbers Point Lighthouse				X	X
3. Pearl City	X			X	X
4. Kalihi Kai	X			X	X
5. DOH Building	X	X	X	X	X
6. Ala Moana	X			X	X
7. Waimanalo	X				

Source: Dept. of Health. Monthly Summary of 24-hour concentrations of specified contaminants, Hawaii Air Monitoring Stations. March, 1975.

Table 9 indicates the number of times the Federal primary and State air quality standards were exceeded between February 1971 and December 1972. As suggested by the table, carbon monoxide is the major air pollutant of concern of Oahu. It is noted that Hawaii is in a priority III region for carbon monoxide control, and it is required by EPA regulations that ambient levels be kept below the National secondary standard.

TABLE 9  
NUMBER OF TIMES FEDERAL PRIMARY AND STATE  
AIR QUALITY STANDARDS EXCEEDED  
(February, 1971-December, 1972)

SITE	Dept. of Health, Oahu	Barbers Point, Oahu	Pearl City, Oahu	Kalihi Kai, Oahu	Ala Moana, Oahu	Waimanalo, Oahu
<u>CARBON MONOXIDE</u>						
(1-Hr. Standard)						
1. Period of sampling (mos.)	21	NS	NS	NS	NS	NS
2. Number of times Federal standards exceeded	0	NS	NS	NS	NS	NS
3. Number of times State standards exceeded	77	NS	NS	NS	NS	NS
<u>NITROGEN DIOXIDE</u>						
(24-Hr. Standard)						
1. Period of sampling (mos.)	22	9*	21	21	21	NS
2. Number of times Federal standards exceeded	NA	NA	NA	NA	NA	NS
3. Number of times State standards exceeded	3	0	0	1	5	NS
<u>PARTICULATE MATTER</u>						
(24-Hr. Standard)						
1. Period of sampling (mos.)	23	9*	22	23	23	18*
2. Number of times Federal standards exceeded	0	0	0	0	0	0
3. Number of times State standards exceeded	7	4	3	25	30	0
<u>SULFUR OXIDES</u>						
(24-Hr. Standard)						
1. Period of sampling (mos.)	21	9*	21	21	20	NS
2. Number of times Federal standards exceeded	0	0	0	0	0	NS
3. Number of times State standards exceeded	0	0	0	0	0	NS
<u>PHOTOCHEMICAL OXIDANTS</u>						
(1-Hr. Standard)						
1. Period of sampling (mos.)	23	NS	NS	NS	NS	NS
2. Number of times Federal standards exceeded	0	NS	NS	NS	NS	NS
3. Number of times State standards exceeded	0	NS	NS	NS	NS	NS

\*Values reflect only data collected at present site location.  
NA = Not applicable because there is no Federal 24-hour standard.  
NS = That pollutant is not sampled at this site.

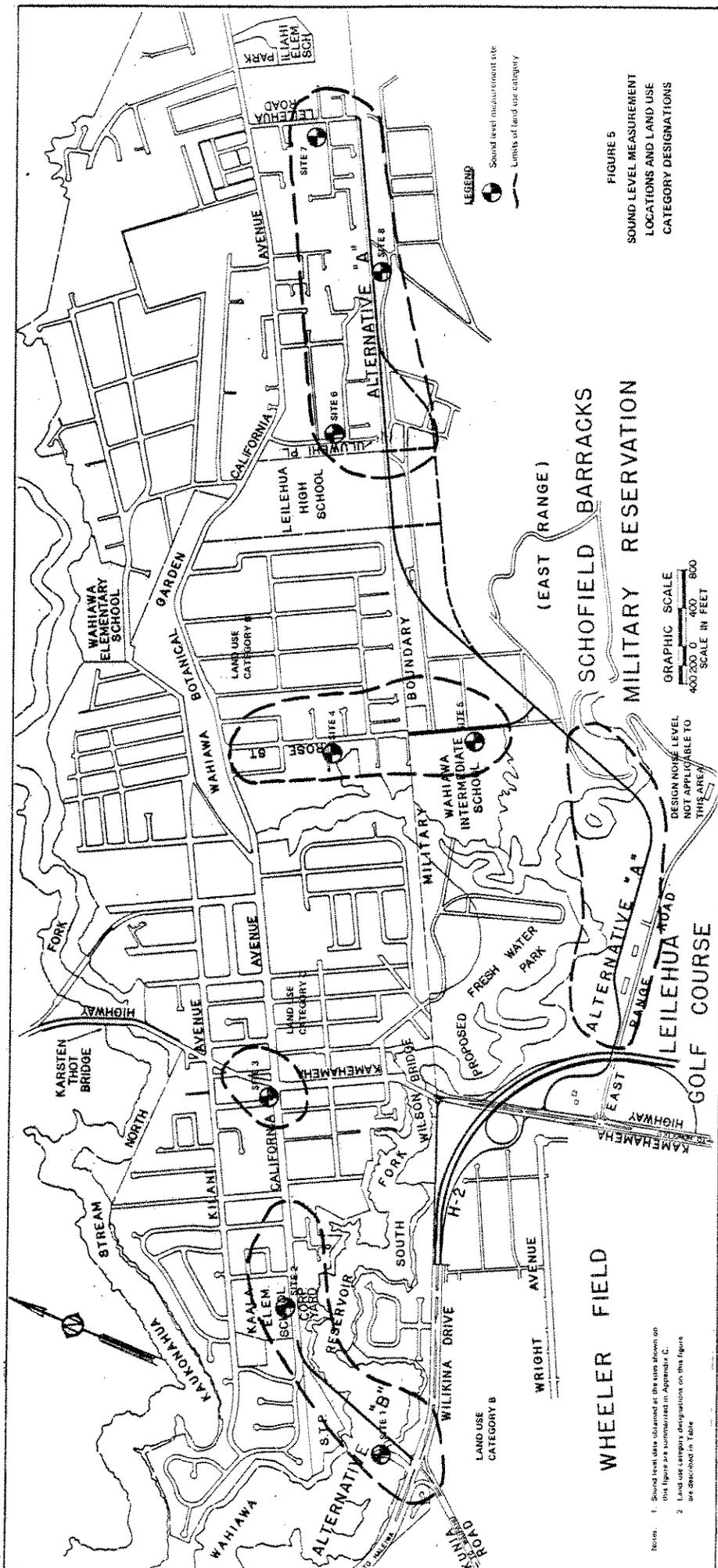
Source: State Department of Health. Hawaii Air Quality Data. Environmental Health Division, Air Sanitation Branch, February 20, 1973.

## E. NOISE

Traffic noise associated with motor vehicle use of highways can have a significant adverse environment impact on the community. Several variables affect the degree of significance of noise impact, and it is important to evaluate this design element in highway planning. Policy and Procedure Memorandum 90-2 (PPM 90-2) of the Federal Highway Administration (February 8, 1973) sets forth noise standards, and procedures for evaluating noise impact. National Cooperative Highway Research Program Report 117 (Highway Research Board, 1971) describes an approved method for predicting highway noise, and is used as a design guide by many State Highway agencies. A noise analysis was made for the alternatives under consideration in this EIS using the above mentioned references.

Appendix C summarizes the data obtained from eight sound level measurement locations in Wahiawa. Sound level measurements were made on June 30 and July 1, 1975 to determine existing sound levels at locations near each alternative roadway. Figure 5 shows the measurement sites chosen for the analysis, and indicates the land use categories used to determine design noise levels in accordance with PPM 90-2. Morning and afternoon noise readings were taken in the field survey during peak traffic periods to characterize existing maximum sound levels in the community. Forty noise readings were taken at each site over 10-minute time intervals. Figures C-1 and C-2 (Appendix C) indicate the frequency of occurrence of various sound levels at each monitoring site. Figures C-3 and C-4 show the cumulative percentage of time each sound level was exceeded. Design noise levels in PPM 90-2 are expressed as L<sub>10</sub> values, or the sound level that is exceeded 10 percent of the time. Design noise standards and land use relationships from PPM 90-2 are shown in Table 10. A summary of land use categories, existing L<sub>10</sub> values, and appropriate design noise levels are indicated in Table 11 for each site monitored in the noise study.

As indicated in Table 11, noise levels at the sites chosen for measurement are presently equal to or below design noise standards. Site 4 (Rose Street near Rose Place) had a sound level range between 38 and 76 dBA and an L<sub>10</sub> value equal to the standard (70 dBA). Of particular importance in characterizing noise levels in the project area is recognition of the major or dominant sources which affect ambient noise levels.



**FIGURE 5**  
**SOUND LEVEL MEASUREMENT**  
**LOCATIONS AND LAND USE**  
**CATEGORY DESIGNATIONS**

**LEGEND**  
 Sound level measurement site  
 Limits of land use category

**GRAPHIC SCALE**  
 DESIGN NOISE LEVEL  
 NOT APPLICABLE TO  
 THIS AREA  
 400 200 0 400 800  
 SCALE IN FEET

**Notes:**  
 1. Sound level data obtained at the sites shown on this figure are summarized in Appendix C.  
 2. Land use category designations on this figure are described in Table

**WHEELER FIELD**

TABLE 10  
DESIGN NOISE LEVEL/LAND USE RELATIONSHIPS

<u>LAND USE</u> <sup>a</sup> <u>CATEGORY</u>	<u>DESIGN NOISE</u> <sup>a</sup> <u>LEVEL - L10</u>	<u>DESCRIPTION OF LAND USE CATEGORY</u> <sup>a</sup>
A	60 dBA (Exterior)	Tracts of lands in which serenity and quiet are of extraordinary significance and serve an important public need, and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of parks, or open spaces which are dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
B	70 dBA	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, picnic areas, recreation areas, playgrounds, active sports area, and parks.
C	75 dBA	Developed lands, properties or activities not included in categories A and B above.
D	-	Undeveloped Lands.
E	55 dBA (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.

---

a. Federal Highway Administration. Policy and Procedure Memorandum 90-2. U.S. Department of Transportation, February 8, 1973.

-----  
State Public Health Regulations Chapter 44B ("Community Noise Control for Oahu"), Section 4.2B, "Highway Noise" states:

No highway or freeway which can be expected to create at designed capacity operation, a noise level of 50 dBA or more inside any school classroom, library, multi-purpose room, hospital, or rest home already in existence and used for its primary design purpose, shall be constructed without first providing for noise control measures which can be expected to limit the noise level inside the facility to no more than 50 dBA.

TABLE 11  
 EXISTING SOUND LEVELS AND  
 DESIGN NOISE LEVELS AT  
 SELECTED POINTS IN WAHIAWA  
 1975

Monitoring Site <sup>a</sup>	Existing <sup>a</sup> Land Use Category	Existing <sup>b</sup> Noise Level (L10, dBA) Exterior	Design Noise Level (L10, dBA)
1	B	63.9	70
2	B	59.0	50 (Interior) <sup>c</sup>
3	C	71.5	75
4	B	70.0	70
5	B	59.0	50 (Interior) <sup>c</sup>
6	B	49.1	70
7	B	61.9	70
8	B	43.1	70

a. Refer to Figure 5

b. Refer to Figures C-3 and C-4

c. Sites 2 and 5 (Figure 5) are in the vicinity of schools and the State Standard (Chapter 44B, Section 4.2B) is therefore applicable. The other sites are not protected by State or Federal Standards, but the FHWA Design Noise levels have been indicated for comparison (see Table 10, note a).

The data summaries in Appendix C for each monitoring site describe the major sources of noise observed during field investigations. Motor vehicle traffic and aircraft operations from Wheeler AFB were the predominant sources of noise affecting background levels in the project area. During school hours, recess activities would be a major noise source in the immediate neighborhoods.

The monitoring sites shown on Figure 5 were selected at points likely to be affected by an alternate second entrance to Wahiawa. Alternative A will accommodate traffic from Rose and Leilehua Streets, and will permit throughflows from California Avenue. Sites 4, 5, 6, and 7 were chosen to evaluate the affects of projected traffic noise on residents in these areas. Sites 1, 2, 3, were selected for Alternative B. Site 8 was monitored to determine the noise impacts of traffic moving immediately adjacent to the southeast residential area.

Chapter 4 indicates the predicted noise levels that would result from Alternatives A and B, and discuss the significance of the potential noise impact.

#### F. ARCHAEOLOGICAL, PALEONTOLOGICAL, AND HISTORICAL FEATURES

During the "corridor location stage" of planning for a second entrance to Wahiawa, and other State Highway Projects, a clearance is obtained from the Department of Land and Natural Resources to indicate that the subject project has been coordinated with their interests. Appendix E includes the appropriate clearance from DLNR approved on July 1, 1975 for the Wahiawa second entrance project (also see letter of May 2, 1975 from DLNR). Chapter 4 describes mitigation measures that should be considered as the second entrance project moves into the "design stage" of planning.

#### G. VEGETATION AND WILDLIFE

The vegetation in the project area is composed predominantly of introduced trees, shrubs, and grasses. There are no significant areas of native vegetation within the alternative corridors. The shores of Wahiawa support a dense fringe of eucalyptus trees along the East Range Access Road (Plates 2 and 3) which provides protection from intense Kona storms.

Wahiawa Reservoir is presently regulated and managed by the State Department of Land and Natural Resources through a cooperative agreement with the owner and lessees of the reservoir. The reservoir is stocked with a number of species of fish including: largemouth and small mouth black bass, bluegill sunfish, channel catfish, chinese catfish, snakehead carp, tilapia, and tucanare. The types of fish, birds, and mammals typically occurring in the Wahiawa area were identified through coordination with the Deivision of Fish and Game (DLNR) to evaluate the potential effects of highway construction on habitat, and any endangered wildlife near the alternatives under consideration in the second entrance project.

Table 12 gives the common names and types of birds and mammals that may be expected in the Wahiawa area of Oahu. It is noted that none of the species shown are classified as threatened or endangered. The more important habitats on Oahu are located along coastal areas around the Island and include Pearl Harbor Naval Base, Kaneohe Marine Corps Air Station, Kawainui Swamp, and the ponds at Kahuku (Bureau of Sport Fisheries and Wildlife, Division of Fish and Game, 1970).

## H. SOCIAL ENVIRONMENT

### 1. Population

The local population is concentrated primarily in two areas; Wahiawa Town and Schofield Barracks/ Wheeler AFB. Wahiawa Town is basically a civilian community, while Schofield Barracks and Wheeler form a large community of military personnel and dependents. Table 13 indicates demographic data from the 1970 Census.

### 2. The Local Economy and Community Growth

The major economic activities within and surrounding Wahiawa include agriculture, the military, and the central business district. The pattern of growth in the area has evolved from several early developments in the past. Wahiawa Town first began as a small plantation town, which served the pineapple industry and its workers. Later, the establishment and growth of the military at Schofield Barracks and

TABLE 12

BIRDS AND MAMMALS OCCURING IN THE  
WAHIAWA AREA OF THE ISLAND OF OAHU

<u>Common Name</u>	<u>Hawaiian Name</u>	<u>Category</u> <sup>a</sup>
<u>Birds:</u>		
Black-crowned Night Heron	Aukuu	I
Cattle Egret		E
Ring-necked Pheasant	Kolohala	E
Pacific Golden Plover	Kolea	I, M
Ruddy Turnstone	Akekeke	I, M
Wandering Tattler	Ulili	I, M
Lace-necked Dove		E
Barred Dove		E
Feral Pigeon		E
Barn Owl		E
Hawaiian Short-eared Owl	Pueo	En.
Chinese Thrush (Hwa mei)		E
Mockingbird		E
Indian Mynah		E
White Eye (Mejiro)		E
House Finch		E
English Sparrow		E
Strawberry Finch		E
Black-headed Mannikin		E
Ricebird		E
Java Sparrow		E
Cardinal		E
Brazilian Cardinal		E
<u>Mammals:</u>		
Black Rat	Iole nui	E
Hawaiian rat	Iole	En.
House mouse	Iole li'ili'i	E
Feral dog	Ilio	En.
Mongoose	Iole-manakuke	E
Feral cat	Popoki	E

a. The category symbols are keyed as follows:

I - indigenous                      En - endemic  
E - exotic (introduced)              M - migratory

Source: Department of Land and Natural Resources, Division of Fish and Game, 1975.

TABLE 13  
DEMOGRAPHIC DATA

	<u>Wahiawa Town</u>	<u>Schofield Barracks</u>
Population	17,598	13,516
Median Age	22.9	21.6
Persons per Household	3.64	3.95
Ethnicity:		
Caucasian	36.9%	83.2%
Japanese	33.8%	1.7%
Filipino	13.8%	1.5%
Hawaiian	5.6%	1.5%
Korean	3.8%	0.3%
Chinese	3.1%	0.3%
Black	1.1%	9.7%
Other	1.9%	1.5%
Median Household Income	\$10,126	\$ 7,483
Employment:		
Civilian	6,120	796
Armed Services	1,323	5,927
Unemployment, aggregate rate	4.4%	8.7%

Wheeler AFB expanded the town's commercial function. In connection with these developments, Wahiawa Town realized a sizeable community growth, especially in residential areas. Today, the military and pineapple industry remain the primary employment centers and continue to support most of the commercial activity within Wahiawa Town. The central business district of Wahiawa includes small retail commercial establishments, a civic center, governmental offices and facilities, a hospital and public secondary schools. As indicated in Table 13, over 7,200 persons belong to the armed forces of whom the majority reside on base. On the other hand, most of the Wahiawa residents are employed outside of the town itself, and many commute to work via the Wilson Bridge and Kamehameha Highway.

### 3. Residence

Wahiawa Town has two major concentrations of residences (primarily single-family dwellings) to the east

and west of the central business district. Alternative A would affect residential areas east of the business district, while Alternative B would affect residential areas to the west. Both Schofield Barracks and Wheeler Air Force Base provide military housing for military personnel and their dependents. Table 14 summarizes housing data from the 1970 Census.

4. Public Facilities

The Wahiawa area has a variety of public facilities which include, among others, public schools, governmental offices, police station, fire station, recreation parks and areas, churches, and a civic center. Alternatives A and B would directly affect certain public schools and open space areas.

a. Education

There are several public schools located in close proximity to the two alternative corridors under study. Alternative A would extend along the southern boundary of Leilehua High School and include a connection and roadway improvement of Rose Street by Wahiawa Intermediate School. Alternative B would connect the intersection of Kunia Road and Wilikina Drive with the western end of California Avenue, where Kaala Elementary School is presently located. In the future, no new public schools are planned along or near either Alternative A or B.

At the present time, some intermediate and most high school students living on the military bases attend public schools located within Wahiawa Town. Most of these students commute by military buses to Wahiawa Intermediate School and Leilehua High School. The military provides approximately 15 buses for Leilehua High and 10 buses for Wahiawa Intermediate. All of these military provided school buses enter and exit Wahiawa Town via the Wilson Bridge.

b. Open Space and Recreational Areas

Alternative A traverses a large open space area known as the East Range, which is closed to the general public and used by the U. S. Army for

TABLE 14  
HOUSING DATA

	<u>Wahiawa Town</u>	<u>Schofield Barracks</u>
Total Housing Units	5,023	2,575
Owner Occupied Units	2,131	3
Median Value of Owner Occupied Units	\$29,700	-----
Median Rent	\$ 111	\$ 114
Substandard Units		
Lacking all or some plumbing	158	9
1.51 or more persons per room	408	51

tactical maneuvers and training. Alternative B spans open space and the Wahiawa Reservoir at a popular and scenic fishing spot which is designated as a preservation zone area. According to the comprehensive Zone Code 1969 of the City and County of Honolulu, the purpose of a preservation area is to establish areas to protect and preserve park lands, wilderness areas, open spaces, beach reserves, scenic areas, and historic sites, open ranges, water sheds and water supplies; to conserve fish and wildlife; and to promote forestry and grazing. Wahiawa Reservoir is also a source of agricultural area. The State of Hawaii Department of Land and Natural Resources is currently planning a fresh water park along the north side of the south fork of Wahiawa Reservoir.

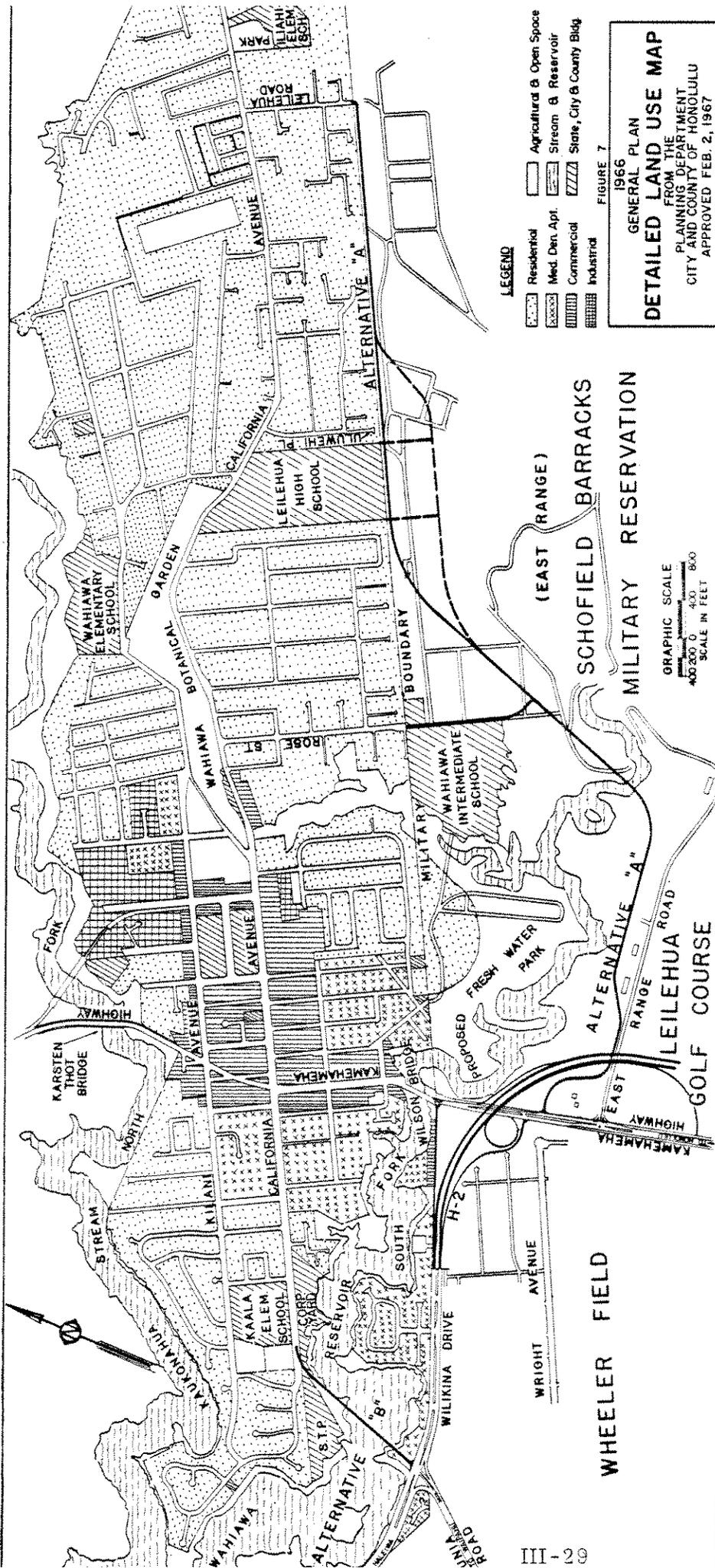
#### I. LAND USE

The general area within and surrounding Wahiawa includes three major land uses; agricultural, military and urban. The pineapple fields of the Hawaiian Pineapple Company lie to the north of Wahiawa Town. Two military installations, Schofield Barracks and Wheeler AFB, lie to the west and south of the town. Wahiawa Town, itself, consists of a sizeable business district and large residential areas, and is surrounded on the north, west and south by the Wahiawa Reservoir.

The Alternative A corridor would traverse the East Range of Waianae Uka Schofield Barracks Military Reservation, which is presently zoned as an AG-1 Restricted Agricultural District (Figure 6). The present position of the Army is to retain this area for military use and to discourage public access through it. The proposed connectors at Rose Street and Leilehua Road would enter residential districts which are zoned R-4 and R-6. The Detailed Land Use Map of the 1966 General Plan for the City and County of Honolulu designates military use for the East Range area and residential use in the general vicinity of the areas abutting Rose Street, Uluwehi Place and Leilehua Road (Figure 7).

The Alternative B corridor would traverse areas which are zoned A-2 Apartment District, P-1 Preservation District, and I-1 Light Industrial District (Figure 6). This alternative would





1966  
**GENERAL PLAN**  
**DETAILED LAND USE MAP**  
 FROM THE  
 PLANNING DEPARTMENT  
 CITY AND COUNTY OF HONOLULU  
 APPROVED FEB. 2, 1967

**LEGEND**  
 [Symbol] Residential  
 [Symbol] Agricultural & Open Space  
 [Symbol] Med. Den. Apt.  
 [Symbol] Stream & Reservoir  
 [Symbol] Commercial  
 [Symbol] Industrial  
 [Symbol] State, City & County Bldg.

GRAPHIC SCALE  
 0 400 800  
 SCALE IN FEET

increase present traffic volume along the section of California Avenue west of Kamehameha Highway which borders areas zoned for residential, light industrial and community business uses. The Detailed Land Use Map shows Alternative B entering areas designated for medium density apartment, preservation, recreational and light industrial uses (Figure 7).

## J. CIRCULATION

Figure 2 identifies the major highways, arterials and streets in the vicinity of Wahiawa. Kamehameha Highway and Interstate Defense Route H-2, currently under construction, serve as the major links between the Wahiawa/Schofield Barracks area and points south (Mililani Town, Waipahu, Pearl City, Aiea, Honolulu, etc.). In addition, Kamehameha Highway connects Wahiawa with points north, i. e. Waialua, Haleiwa, Kahuku, etc. Within Wahiawa Town, California Avenue is the major east-west corridor. At present, Kamehameha Highway provides the sole access into or through Wahiawa Town. It approaches the town from the south as a four-lane divided highway and crosses the south fork of the Wahiawa Reservoir via the existing two-lane Wilson Bridge. Between this bridge and California Avenue, the highway pavement widens to 50 feet within an 80-foot right-of-way and provides two "through" lanes plus parking lanes. The pavement then narrows to 40 feet width for two "through" lanes between California Avenue and Kilani Avenue. From Kilani Avenue, the roadway narrows to 20-foot pavement within a 50-foot right-of-way and provides two lanes for traffic over Kaukonahua Stream (or the North Fork of Wahiawa Reservoir) via the Karsten Thot Bridge.

Traffic projections for the section of Kamehameha Highway between the Wilson Bridge and California Avenue indicate about 25,050 vehicles per day (ADT) by the year 1977, about 33,340 ADT by 1987, and 41,650 ADT by 1997. To meet these future traffic demands, the existing two-lane Wilson Bridge will be replaced by a new bridge, 300 feet in length and six lanes wide. In addition, Kamehameha Highway will be widened to six lanes between the new bridge and California Avenue and to four lanes between California Avenue and Kilani Avenue.

For the purposes of this EIS, it is assumed that the construction of H-2, the new Wilson Bridge and Kamehameha Highway improvements within Wahiawa Town will be completed by the year 1978. The study of a second entrance corridor for Wahiawa Town has been conducted under these assumptions and has recommended two alternative corridors, described previously in Chapter 2 of this report. Basically, Alternative A would connect Kamehameha Highway with the eastern portions of Wahiawa Town through the East Range of the Schofield Barracks Military Reservation. This proposed corridor would be a two-lane roadway approximately 2.6 miles in length and would include connections to California Avenue via Rose Street and Leilehua Road. These two connectors presently have two-lanes; however, only Rose Street has curbs and sidewalks.

Alternative B, on the other hand, would extend from the intersection of Kunia Road and Wilikina Drive to the western end of California Avenue and would include a new two-lane wide bridge span of about 600 feet across Wahiawa Reservoir.

---

CHAPTER 4  
ENVIRONMENTAL IMPACTS  
AND MITIGATION MEASURES

---

0  
1  
2  
3  
4  
5  
6  
7  
8  
9  
A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P  
Q  
R  
S  
T  
U  
V  
W  
X  
Y  
Z

CHAPTER 4  
ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

COMPARISON OF ALTERNATIVES A AND B

A. TOPOGRAPHY

Construction of a second entrance roadway to Wahiawa will have a short-term local impact on the visual quality of the land from near the community. Minor alterations to the land surface through grading for either alternative will have a long-term effect. The significance of land form alteration and visual impact is different for each alternative, and as described in Chapter 3, is a function of the degree to which persons are exposed to construction and operation of the highway. Plates 1 through 8 included in Chapter 3 show present visual characteristics near the alternates under consideration in this EIS.

1. Alternative A

The southeast corridor alignment is a longer roadway than Alternative B and will require grading over a greater land area. The number of persons exposed to construction and use of Alternative A, however, varies over the length of the highway. The southeastern portion of this alternate between Kam Highway and Wahiawa Intermediate School is an undeveloped area, and is subject to very low visual exposure due to 1) the elevated structure of Interstate H-2, and 2) relatively level terrain and vegetal cover along the South Fork of Wahiawa Reservoir. This segment of Alternative A is expected to have little visual impact during construction and use.

The northwestern portion of Alternative A along the military boundary (see Figure 2) will have greater visual impact during construction due to the residential use along the corridor. Removal of vegetation and use of the highway will modify the appearance of land form on a long-term basis. A mitigating feature of the preliminary design of Alternative A is that massive cuts and fills will not be greatly elevated or depressed from the existing elevations of terrain along

the corridor. The completed roadway structure of Alternative A will not present a dominant visual profile over any portion of the corridor.

On selection of a final corridor and during the "design stage", landscaping can be applied as a mitigation measure for areas that may be determined to have an undesirable visual effect.

## 2. Alternative B

Alternative B will require much less alteration of land form than Alternative A owing to the shorter length of the highway. The bridge structure crossing Wahiawa Reservoir near the Wahiawa Sewage Treatment Plant will, however, significantly impact the visual quality of this area. Vegetation along the banks of the reservoir presently excludes visual exposure from developed areas, and creates a pleasant environment for boaters and fishermen using the reservoir. The bridge would be a dominant visual element conflicting with the setting as it now is. In addition, the appearance of the bridge would change with water level fluctuations (as does the appearance of the entire reservoir).

Visual impact for either alternative, whether beneficial or adverse, cannot be absolutely determined owing to the subjective nature of the impact. The frequency of exposure and number of persons viewing the roadway structures for each corridor will influence the magnitude of the impact. Mitigation of visual impact for Alternative B can be applied through minimizing the number of support pilings for the bridge structure, and designing the profile of the bridge for a minimum level of visual intrusion.

## B. GEOLOGY AND SOILS

Construction and use of a second entrance to Wahiawa is not expected to induce any significant geologic impacts with respect to seismic activity or the structural stability of existing geologic features. Wahiawa is in a zone of relatively low seismic risk,

and the structural design of the bridge crossings for Alternative A and B can allow for the potential lateral forces and accelerations associated with a seismic event. The at-grade portions of the highways will be subjected to an insignificant level of environment impact from seismic activity.

Grading operations and exposure of soils to erosion and transport are potentially significant areas of impact. Mitigation measures for control of erosion will be applied during construction of either alternative, and drainage control structures and plans will be provided to minimize the long-term impacts of roadway use.

Table 4 (Chapter 3) describes selected properties of the soils that will be affected by each alternative. During the "design stage" of the second entrance project a detailed soils investigation will be made for the final corridor. Information developed in the soils report will be considered in formulating the detailed roadway design and right-of-way planning.

## C. SURFACE AND GROUND WATER

Potential impacts associated with surface and ground water near the highway corridor alternatives under consideration include, 1) alteration of existing drainage courses, 2) short or long-term affects on water quality in Wahiawa Reservoir from construction and road use, 3) potential risk to road structures from flooding, and 4) reduced ground water recharged by placement of a relatively impervious area on the ground surface. The following subsections discuss the potential significance of these impacts for each alternative, and identify mitigation measures that will be applied in the design stage of the project.

### 1. Alternative A

Alternative A crosses the South Fork Kaukonahua Stream and one small intermittent drainage channel about 1,800 feet east of Uluwehi Place. Pipe culverts will be used to channel naturally occurring surface flows underneath the roadway at the intermittent channel, and no major diversion or alteration of flows will occur.

The bridge structure crossing the South Fork will span about 320 feet, and will be elevated approximately 35 feet above the water surface. Construction of the bridge section and placement of supporting piers and foundations will have a local short-term disturbance of bottom sediments, causing an increase in turbidity. However, the water in the reservoir is normally very turbid, so this short-term impact on water quality from construction is not expected to adversely affect the suitability of Wahiawa Reservoir for beneficial uses (e.g., irrigation and fishing), nor is it likely to be noticeable.

Interim Design Criteria for Highway Drainage requires that a 50 year recurrence interval be used to provide flood protection for bridge and culvert structures.

Streamflow data and flood information from U. S. Geology Survey gauging stations upstream of the bridge crossings were used for preliminary design data in Alternatives A and B. Streamflow through the reservoir will not be significantly altered.

The alignment of Alternative A will not conflict with any structures or water sources associated with the public water supply of Wahiawa. Erosion control measures during construction and handling of surface runoff along the roadway will be applied to prevent short or long-term degradation of water quality in Wahiawa Reservoir. Short-term sources of water quality degradation include soils exposed to rainfall and runoff, chemicals used for weed control, and spills from construction equipment. Continuing or long-term sources of water quality contaminants from the roadway include materials washed from the road surface during rainfall (e.g., rubber from tires and trace amounts of asbestos from brake linings), and gasoline or other materials spilled by traffic accidents. Potential water quality impacts from construction and use of a second entrance to Wahiawa will be minimized through application of appropriate construction and design specifications. State of Hawaii, Standard Specifications for Road and Bridge Construction (Section 107.17 - "Protection of Rivers, Streams, Impoundments, Forests, and Archaeological

and Paleontological Findings", Section 639 - "Temporary Project Water Pollution Control (Soil Erosion)", and Section 641 - "Slope Control Planting") are applicable to the proposed project.

Construction of Alternative A will provide a road surface covering approximately 18 acres. This surfaced area will reduce the amount of precipitation infiltrating into the ground over the roadway alignment. A major portion of the rainfall that contributes to surface runoff, however, will be returned to either Wahiawa Reservoir or the land surface nearby the highway corridor. As noted in Chapter 3, the major recharge area to the ground water reservoir underlying the Schofield Plateau is in the Koolau Range above Wahiawa. The slight reduction in infiltration from the Alternative A corridor will not adversely affect the ground water resource.

2. Alternative B

Alternative B crosses Wahiawa Reservoir, but does not intercept or cross any other surface drainage channels. Alteration of existing drainage patterns will be minor near the intersection of Wilikina and Kunia, and over the northern portion of the roadway at California Avenue.

Alternative B will require a bridge span of about 600 feet. Structural support for the span will be provided by piers supported on concrete foundations in the reservoir bottom (see Appendix B). Pier construction will disturb bottom sediments in the reservoir resulting in short-term increases in turbidity and suspension of disturbed materials. Disturbing this bottom material can be expected to release nutrients (and perhaps some pollutants) into the water column. However, with the Wahiawa Sewage Treatment Plant outfall currently discharging at this same location, nutrient levels are probably very high to start with. Highway construction near the northern portion of Alternative B (east of the sewage treatment plant) may introduce soil materials into the reservoir, and further affect water quality on a short-term basis. These short-term effects of construction should not be noticeable above the high back-

ground levels of turbidity and nutrient enrichment. Erosion control measures in accordance with State construction specifications will be employed as described in Alternative A. The clearance between bridge structure and water surface for Alternative B will be designed to provide flood protection in accordance with current design standards. Sufficient clearance will be provided to accommodate small boats normally passing this section of the reservoir. A short-term disturbance to fishing activities near the sewage treatment plant outfall may occur during bridge and roadway construction for Alternative B.

The roadway surface for Alternative B will cover approximately 1.7 acres. This small reduction in pervious land area will have a negligible impact on the local ground water basin. The quantity of additional "highway pollutants" introduced into the reservoir would be insignificant in comparison with existing pollutant sources (e.g., sewage, agriculture and urban runoff). Public water supply sources and facilities will not be impacted by Alternative B.

#### D. AIR QUALITY

Air pollutant emissions during construction and use of a second entrance to Wahiawa will affect local and regional air quality. The following subsections describe the nature and significance of construction impacts, regional impacts, and local impacts on air quality. Mitigation measures appropriate to each area of impact are also presented. (Refer to Appendix D for detailed air quality assessment).

##### 1. Construction Impacts

Grading for the proposed roadway, and operation of construction equipment will have short-term effects on air quality for either alternative. Grading of the land surface will disturb approximately 25 acres for Alternative A, and about 2.3 acres for Alternative B. Chapter 43 of the State Public Health Regulations specify that the emissions of fugitive dust from any source shall not cause ground level dust concentrations to exceed  $150 \text{ mg/m}^3$  above upwind concentra-

tions or a fallout of 3.0 gm/m<sup>2</sup> above upwind concentrations for any 14-day period. Construction impacts can be mitigated by water application to graded areas, protection of stockpiled materials from wind erosion, and removal of settled materials from paved streets subject to traffic use.

## 2. Regional Impacts

Motor vehicle emissions from a second entrance to Wahiawa will contribute CO, HC, and NO<sub>x</sub> (SO<sub>2</sub> and particulates to a lesser extent) to the airshed around Wahiawa. The ambient concentrations of these pollutants, however, are not expected to exceed State or Federal standards as a result of either corridor under consideration. The most significant effect of a second roadway access to Wahiawa, in relation to regional air quality, is that motor vehicles using existing roadways will be redistributed within the community thereby relieving traffic congestion and improving operating conditions (i. e., higher average operating speeds, and fewer starts and stops). Improved operating conditions will contribute to lower air pollutant emissions.

As indicated in Table 9, Chapter 3, State standards for CO were exceeded 77 times at the Department of Health station between February, 1971 and December, 1972. A review of DOH air monitoring data (at the DOH station) for January, February, and March of 1975 indicates that the State CO standard (1 hour) was exceeded 12 times during that period. Of particular relevance to the discussions on regional air quality on Oahu is that there are no DOH monitoring stations near Wahiawa, and the degree to which existing stations reflect regional air quality near the community has not been determined. In the absence of such a determination, a good correlation between emissions and ambient concentrations of pollutants has not been established. Mass emissions of CO, HC, and NO<sub>x</sub> were, however, estimated for each alternative roadway for comparison to the emissions inventory for the City and County of Honolulu (May, 1973). The following table shows the estimated emissions levels for each alternative.

TABLE 15

ESTIMATED EMISSION LEVELS FOR  
SELECTED YEARS WAHIAWA SECOND ENTRANCE

	<u>Carbon Monoxide</u>	<u>Hydro- Carbons</u>	<u>Nitrogen Oxides</u>
<u>City &amp; County of Honolulu</u>			
1973 Motor Vehicle Emissions (tons/year)	335,300	55,000	33,000
<u>Wahiawa Second Entrance</u>			
Alternative A			
1977 Emissions levels (tons/year)	114	11.4	13.3
1987 Emissions levels (tons/year)	91	9.5	12.3
Alternative B			
1977 Emissions levels (tons/year)	33	3.3	3.8
1987 Emissions levels (tons/year)	24	2.5	3.2

Although Table 15 does not estimate the ambient concentrations of CO, HC, and NO<sub>x</sub>, it can be seen that emission levels associated with the proposed roadway are negligible on a regional basis. More importantly, the improvement in emission levels on existing roadways by improved operating conditions resulting from a second entrance to Wahiawa will have a beneficial effect. Table 16 shows an example comparison of carbon monoxide emissions on Kamehameha Highway with and without each alternative second entrance.

Exhaust emissions of primary air pollutants from motor vehicles are anticipated to decrease through controls imposed by EPA. The actual reductions in unit emissions through EPA controls will be enhanced by any improved operating conditions resulting from a Wahiawa second entrance.

TABLE 16

COMPARISON OF CO EMISSIONS ON KAM HIGHWAY <sup>a</sup>  
WITH AND WITHOUT A SECOND ENTRANCE

	<u>CO Emissions (T/year)</u>
<u>No Second Entrance</u>	
1977	127
1987	105
<u>With Alternative A</u>	
1977	107
1987	89
<u>With Alternative B</u>	
1977	103
1987	87

---

a. Traffic data between Wilson Bridge and California Avenue.

---

3. Local Impacts

The significance of air pollutant emissions immediately adjacent to each alternative roadway was determined by estimating local concentrations of CO. The local air quality impact analysis is detailed in Appendix D. This subsection summarizes the analysis, and presents a brief discussion of the results.

CO concentrations were mathematically modelled using the method of the California State Division of Highways (Air Quality Manual, Vols. IV and V, April, 1972). Owing to the generally poor understanding

of the chemical reaction mechanisms and rates associated with dispersion of HC and NO<sub>x</sub>, these pollutant species were not modelled. Estimates of CO concentrations were made for, 1) downwind distances of 100, 200, and 300 feet, and 2) vehicle operating speeds of 15, 20, and 25 mph. Results of the analysis are shown in Table 17.

Worst case conditions for traffic volumes, wind velocity, atmospheric stability, and emission rate were assumed. As indicated in Table 17, the estimated 1-hour CO concentrations are not expected to exceed the State standard (10 mg/m<sup>3</sup>) for either alternative. Moreover, the actual project concentrations should be lower than estimated, owing to the following reasons:

- a. The angle of intersection between wind and roadway will seldom be constant for a 1-hour period, and dispersion of pollutants should be greater than shown.
- b. The motor vehicle emission rate was assumed to be constant throughout the project life (1975 value). The actual rate should decrease through emission controls.
- c. Structures and uneven terrain beside the roadway will increase air turbulence and improve mixing.

## E. NOISE

Noise levels associated with motor vehicle traffic will be changed at various points in Wahiawa as a result of either highway alternate under construction. Noise impacts will occur on a short-term basis from roadway construction and maintenance, and on a long-term basis from vehicle use.

### 1. Construction

Increased noise levels will occur from operation of construction equipment, grading, placement of bridge structures, and roadway surfacing for either alternate.

TABLE 17

ESTIMATED 1-HOUR CARBON MONOXIDE CONCENTRATIONS  
FOR 1997 ADT's WAHLAWA SECOND ENTRANCE

<u>Roadway Segment</u>	<u>Downwind Distance (feet)</u>	<u>CUK Q</u>	<u>CO concentration (mg/m<sup>3</sup>) for indicated operating speed</u>		
			<u>15 mph</u>	<u>20 mph</u>	<u>25 mph</u>
Alternative A					
a	100	1.6	0.66	0.53	0.42
	200	1.4	0.58	0.46	0.37
	300	1.3	0.54	0.43	0.35
b	100	1.55	1.6	1.3	1.0
	200	1.35	1.4	1.1	0.90
	300	1.25	1.3	1.0	0.83
Alternative B					
a	100	1.5	2.9	2.3	1.9
	200	1.3	2.5	2.0	1.6
	300	1.2	2.3	1.8	1.5
b	100	0.85	1.8	1.4	1.2
	200	0.75	1.6	1.3	1.0
	300	0.68	1.4	1.1	0.90

Construction impacts will, however, be of relatively short duration. Construction activities will be subject to the conditions of Chapter 44B, Section 5.4A of the State Public Health Regulations ("Community Noise Control for Oahu"). Ambient noise levels in Wahiawa will generally increase over time even without a second entrance roadway. Increased population results in an increase in the number of vehicles in the community resulting in greater levels of ambient noise. One study (Donley, 1975) indicated that noise levels were increasing by about 1 decibel (dB) per year in certain geographic areas.

Aside from an overall increase in ambient sound levels, it can be seen from Table 11 that sound levels (1975) are generally lower in the southeast corridor (Alternative A) than in the southwest corridor (Alternative B). In addition, there are more persons that will be exposed to construction noise in Alternative A.

## 2. Operation

The predicted increase in sound levels associated with motor vehicle traffic on each alternative was determined to evaluate the significance of the increase and to assess the need for sound attenuation devices or measures. Tables 18 and 19 show the estimated changes in local noise levels that will occur at selected points in Wahiawa based on traffic projection for the year 1997 (see Table 1, Chapter 2). These projections are based on accepted FHWA methodology and include separate calculations for trucks and automobiles as well as adjustments for traffic speed, grade, and other highway conditions. The traffic volume used in the calculations was peak hour traffic, or 10.5% of the ADT (see Table 1); of these vehicles, 98.5% are automobiles and 1.5% are trucks.

### a. Alternative A

Sound level projections for Alternative A were made at five locations likely to be affected by this roadway. As shown in Table 18, the 1997 noise levels at each point are expected to be below design levels with the exception of roadway segment No. 2

TABLE 18  
 PROJECTED NOISE LEVELS  
 WAHIAWA SECOND ENTRANCE  
 Alternative A

Roadway Segment	Present Exterior Noise Level 1975 (L10, dBA)	Projected Exterior Noise Level 1997 (L10, dBA)	Exterior Design Noise Level (L10, dBA)
<u>Roadway</u>	<u>From</u>	<u>To</u>	
A1. Alternate A	Interstate H-2	Rose Street Connection	a b
A2. Rose Street	Alternate A Connection	Military Boundary	59.0 (43.2 Interior) 50 c
A3. Rose Street	Military Boundary	California Avenue	70.0 70
A4. Uluwehi	Alternate A	California Avenue	49.1 70 d
A5. Leilehua	Alternate A	California Avenue	61.9 62.7 70

- a. Sound level measurements were not taken near Interstate H-2, due to construction activities.
- b. A design noise level is not applicable to this route segment owing to the limited use and development of the area.
- c. State interior standard, see Table 10.
- d. The Uluwehi Place connection has been deleted from Alternative A so there would be no increase in neighborhood sound levels from the proposed project.

TABLE 19  
 PROJECTED NOISE LEVELS  
 WAHIAWA SECOND ENTRANCE  
 Alternative B

Roadway Segment	Present Exterior Noise Level 1975 (L10, dBA)	Projected Exterior Noise Level 1997 (L10, dBA)	Exterior Design Noise Level (L10, dBA)
<u>Roadway</u>	<u>From</u>	<u>To</u>	
B1. Alternative B	Wilikina Drive	California Avenue	70
B2. California Avenue	Kaala Elementary School	Kam Highway	50 a
B3. Intersection of Kam Highway and California Avenue			75

a. State interior standard, see Table 10.

(Rose Street north of Wahiawa Intermediate School). The following paragraphs briefly describe the characteristics and significance of each projection shown in Table 18.

#### Roadway Segment No. A1

The location of this noise level prediction point was chosen to evaluate the potential impact of roadway construction and use on the proposed Wahiawa Fresh Water Park. Each projected noise level in this analysis was determined at a "worst case" location. The noise projection for segment no. A1 was made near the Interstate H-2 crossing, and included the influence of traffic on Interstate H-2, Alternative A, and East Range Road. Although no design noise level is applicable to the route segment between Interstate H-2 and the Rose Street Connection, it is noted that the projected L<sub>10</sub> level of 71.2 dBA is below the design level for land use category C areas (see Table 10, Chapter 3). More importantly, the vegetal cover and elevation difference between this segment of Alternative A and the proposed park will attenuate (reduce) the sound level from motor vehicles well below 70 dBA (standard for category B).

#### Roadway Segment No. A2

This location was evaluated to determine the potential noise impact on Wahiawa Intermediate School. The roadway segment generating the noise level indicated (60.2 dBA) was limited to the boundary of Schofield Military Reservation, because field data (Table 11, Chapter 3) showed a significant difference in sound levels between the school and a point closer to California Avenue. The school is not expected to experience exterior traffic noise above the design standard of 70 dBA; the projected 1997 L<sub>10</sub> exterior sound level is 60.2 dBA. The block wall and glass construction of the school should result in attenuation of this exterior sound level by 17 dBA (windows open) to 20 dBA

(windows closed), resulting in interior highway-generated sound levels of 43.2 - 40.2 dBA. These are well below the State Standard of 50 dBA. Traffic further north on Rose Street has a higher operating speed and increased noise levels; so exterior sound levels would be slightly higher. Exterior-Interior attenuation would not be as effective, but would still be approximately 10 dBA.

#### Roadway Segment No. A3

Noise projections for this segment are expected to slightly exceed the design standard of 70 dBA. It is noted that the 1975 L<sub>10</sub> level was equal to the standard in the field survey. Aircraft operations from Wheeler AFB and bus traffic on Rose Street are presently the dominant sources of noise in this segment.

Another observation is that school was not in session during the field survey, and higher noise levels that indicated probably occur at certain times in the year. The residential area of Rose Street is already impacted by existing noise sources.

Mitigation measures may be required for this effect of Alternative A. Owing to the present level of development on Rose Street, it is suggested that an effective means of reducing traffic noise will be through application and enforcement of a lower speed limit between Wahiawa Intermediate School and California Avenue. A second recommendation is that a more extensive noise study may be done in the residential area on Rose Street to determine indoor noise levels, and to distinguish between the noises generated by aircraft, motor vehicles, and other sources.

#### Roadway Segment Nos. A4 and A5

Noise projections on Uluwehi and Leilehua were made to assess the impacts of increased traffic levels on nearby residences. As indicated in Table 18, the projected L<sub>10</sub> levels on both roadway and segments are within design limits. The projections for Uluwehi Place have been negated by dropping this connection from Alternative A.

b. Alternative B

Noise level projections for Alternative B (Table 19) are indicated to be below design levels in 1997. Three locations were evaluated in the impact analysis.

Roadway Segment No. B1

Aircraft operations, and highway traffic on Wilikina and the Alternative B bridge will contribute to noise levels in this segment of Wahiawa Reservoir. Increased levels of traffic on Wilikina will continue to affect ambient noise levels in this area even without the alternate. Projected 1997 levels are anticipated to be below design standard.

Roadway Segment No. B2

This location was evaluated to determine the degree of noise impact on Kaala Elementary School. An exterior noise increase from 59 to 63.1 dBA is expected through implementation of Alternative B, however, the interior level after attenuation will be within the State Standard.

Roadway Segment No. B3

As described in various sections of this EIS, either second entrance alternative will modify the volume flow of traffic within the Wahiawa community. Some streets and intersections will have a reduced traffic level from a second entrance, and others will have an increased level. Segment No. B3 was evaluated at the intersection of Kam Highway and California Avenue. The indicated value of 72 dBA is designated at a point instead of a line segment. Owing to the attenuation of sound levels over distance, the point values used in this analysis are always maximums and are shown as the "worst case" over a length of roadway.

Noise levels at the intersection of Kam and California were chosen as a representative case for the comparison of Alternatives A and B. As indicated in Table 19, traffic noise at the intersection is projected to be within design level for the projected traffic volumes.

F. ARCHAEOLOGICAL, PALEONTOLOGICAL, AND HISTORICAL FEATURES

The land areas to be occupied by either Alternative A or Alternative B have been disturbed over time by use and development of the community of Wahiawa. Little development has taken place within the East Range area of Alternative A, however, military operations have had some affect in disturbing the land surface through training exercises. Disturbance of the land areas could conceal any evidence of features of cultural significance that may exist within the corridors under consideration in this EIS. Coordination with DLNR (see Appendix A) has been accomplished at this stage of planning for a second entrance roadway, and will continue through later stages. They have indicated that there are no known historic or archaeological sites eligible for inclusion on the Hawaii or National Register of Historical Places that will be affected by this project.

Construction operations for the selected Wahiawa second entrance roadway will involve land clearing and grading operations. Any evidence of features of possible cultural significance discovered during construction operations will be protected and reported to the State Historic Preservation Officer (SHPO).

G. VEGETATION AND WILDLIFE

Construction of a second entrance roadway to Wahiawa will have both short and long-term impacts on existing habitats within the highway corridor, but no threatened or endangered species will be affected by the project. Short-term impacts resulting from construction include any affects on fish in Wahiawa Reservoir from changes in water quality associated with bridge construction,

placement of bridge pilings, or erosion, and temporary displacement of birds and small mammals due to land clearing and operation of construction equipment. Long-term impacts of roadway construction will result from the modification of habitat, and any alteration of surface drainage through control structures.

1. Alternative A

As noted in previous sections, a second entrance roadway in the southeast corridor will disturb up to 25 acres of land area within the right-of-way during construction, and will involve permanent alteration of about 18 acres. A rough field estimate indicated that approximately 115 mature eucalyptus trees in a dense windbreak along East Range Road could be removed, although it is unlikely that the entire windbreak would be eliminated. The trees included in this estimate range in size from 1 to 3 feet in diameter and up to 50 feet tall; the numerous small saplings were not counted. Birds and small mammals occupying these areas will be displaced during the construction period, but may re-establish in habitats nearby the new roadway. It is relevant to note on Table 12 (Chapter 3) that most birds and mammals occurring in the Wahiwawa area are introduced species, and as described in various sections of this EIS the corridors under construction for the second entrance project are in areas that have been greatly influenced by development of the community. Biological communities within the Alternative A corridor have adjusted to the influence of development.

Owing to these factors, it can be stated that there will be a significant affect on biological communities within the highway corridor selected for the second entrance, but the sensitivity of birds, mammals, and other organisms affected is relatively low. The biological impact of the roadway will thus be of low intensity.

Distribution of sediments or introduction of contaminant materials into Wahiwawa Reservoir may have a short-term effect on fish. On completion of the structure, the pile timbers and shaded area caused by the bridge will provide a modified habitat. The effects of these impacts are highly localized, and are expected to be of low intensity in relation to the South Fork of the reservoir.

Mitigation measures for the impacts on wildlife from a second entrance include erosion control and minimizing the alteration of surface drainage patterns within the corridor. In the design stage of the project, trees will be plotted. With this information, the highway will be aligned so as to remove a few trees as possible. Landscaping used along the new roadway for reducing visual and noise impacts will also provide habitat for birds and mammals impacted during construction.

2. Alternative B

Alternative B will disturb up to 2.3 acres of land area, and will permanently occupy about 1.7 acres. Within this area are roughly 30 mature eucalyptus trees (1 to 3 feet in diameter and up to 50 feet tall), the removal of which would be unavoidable due to their close spacing. The land area to be occupied by Alternative B is much less than Alternative A, and is highly impacted by development already. Information on the density of species present in each corridor is not available to permit a comparison of alternatives, but the removal of habitat will be less for Alternative B. The bridge crossing for the southwest corridor will require more pilings, and the disturbance to bottom sediments and water quality from construction will be of greater duration. Construction noise and water quality changes may temporarily affect fishing in this portion of Wahiawa Reservoir. This may occur because of 1) the release of nutrients from bottom sediments, and 2) a temporary reduction in oxygen concentration. Over the long-term, the effect of construction should be negligible and may even provide additional habitat for fish.

Erosion control along the reservoir banks, and the discharge of surface drainage should be strictly managed for the Alternative B corridors as a mitigation.

H. SOCIAL ENVIRONMENT

1. Population

It is difficult at this time to determine population projections for the Wahiawa area. The State of Hawaii Department of Planning and Economic Development

TABLE 20  
ESTIMATED RESIDENT POPULATION

<u>YEAR</u>	<u>STATE</u>	<u>CITY &amp; COUNTY OF HONOLULU</u>
1970	768,561	630,220
1975	843,237	691,454
1980	929,917	749,000
1985	1,027,437	819,000
1990	1,131,475	891,000
1995	1,238,428	965,000
2000	1,348,892	1,039,000

Source: Department of Planning & Economic Development, State of Hawaii, April 16, 1975.

provides residential population forecasts to the year 2000; however, projections for Oahu are given for only the City and County of Honolulu without further breakdown by specific areas, i. e., Wahiawa, Waipahu, Ewa, etc. (Table 20). The City and County of Honolulu also does not have population projections for Wahiawa. Consequently, it can only be assumed that the Wahiawa area in general would realize a concomitant increase in population with the increasing population trend estimated for Oahu.

Basically, a second entrance corridor would serve to facilitate the redistribution and movement of the area's population in addition to other persons and goods in and around Wahiawa Town. Neither Alternative A nor B would significantly alter the community character of the area. Alternative A would provide an alternate route for commuters who reside in the eastern portion of Wahiawa Town to bypass the busy central business district. Alternative B would provide a more direct route for commuters traveling between Wahiawa Town and destinations that include Schofield Barracks, Wheeler AFB and Waipahu.

## 2. Local Economy and Community Growth

A second entrance corridor would not adversely affect the local economy or community growth of Wahiawa. No businesses would be displaced. The physical growth of Wahiawa Town is somewhat restricted by the Wahiawa Reservoir which borders the town on the north, west and south. Geographic constraints around Wahiawa (e. g. the reservoir) dictate that future growth will predominantly occur in the eastern section. A second entrance to Wahiawa would serve to accommodate increased traffic volume associated with future growth by providing safe, efficient and fast means of transportation.

a. Alternative A

This corridor would require the acquisition of a right-of-way through Federal property. This acquisition would involve a loss in tax revenues of approximately \$14,820 per year. Table 3 shows a favorable benefit cost ratio of either 1.45 with Federal lands donated or 1.33 without the Federal donation.

b. Alternative B

Alternative B would require the acquisition of private property north of the intersection of Kunia Road and Wilikina Drive which is currently vacant, but zoned and master-planned for medium density apartments. This would entail a loss in tax revenues of approximately \$14,200 per year. The right-of-way for Alternative B would not displace any commercial businesses and would not disturb any agricultural uses. However, Alternative B, depending upon specific alignment, may reduce the effective size of the City and County of Honolulu Corporation Yard (equipment and materials storage and repair facility) to such an extent that it would not be able to operate properly without modification. If Alternative B is selected, this potential problem will be the subject of further resolution. Table 3 shows a favorable benefit cost ratio of 1.69 for Alternative B.

3. Residence

a. Alternative A

Alternative A would distribute vehicular traffic through several major concentrations of primarily single-family residences by way of Rose Street and Leilehua Road. About 28 residences would be directly affected along the main corridor, 42 on Rose Street, and 20 along Leilehua Road. Although no residences would be displaced, residents would be significantly affected by the proposed Alternative A corridor and its two connections in terms of increases in air pollution and noise levels; and potential safety hazards for pedestrians, especially

children, all of which are associated with increased traffic volumes. Although air pollution and noise levels would not exceed Federal design standards, the impacts associated with increased traffic volume might cause residents to make certain life-style adjustments in one way or another. Example of such adjustments might include:

1. Residents living on Rose Street or Leilehua Road might fence in their residential areas to protect children from busy streets.
2. Residents might restrict their children's play away from what was once a quiet, lightly traveled street.
3. Residents might become more security conscious with greater exposure of their homes and property to more traffic passing by.
4. Residents might keep their doors, windows and curtains closed to mitigate the noise and odors of passing traffic.

These adjustments by residents would incur costs which are rather difficult to measure or affix any monetary values, nonetheless, these costs are significant when considered in light of the personal stresses that may result.

b. Alternative B

This alternative corridor would displace only the caretaker's cottage located on the City and County Sewage Treatment Plant grounds. This cottage, which is a two bedroom dwelling unit, is currently occupied by a single family. These residents could be relocated within Wahiawa where there is currently ample and comparable replacement housing units. Alternative B would increase traffic volume on the western portion of California Avenue which would incur social costs on residential areas, although to a lesser degree than Alternative A.

4. Public Facilities

a. Education

Both alternative corridors would affect several local public schools within Wahiawa Town with regards to air and noise quality and public safety. Alternative A would directly impact Wahiawa Intermediate School and Leilehua High School. Alternative B would affect Kaala Elementary School. In the future, no new schools are planned adjacent or in close proximity to the corridors under study.

1) Alternative A

Wahiawa Intermediate School is presently located at the southern terminus of Rose Street. Alternative A would require the extension, improvement and use of Rose Street as a major connector between California Avenue and the proposed corridor. Traffic volumes along Rose Street would increase to 1,220 ADT in the year 1977, 1,650 ADT by 1987 and 2,060 ADT by 1997. This increase in turn would directly affect present air and noise quality and safety conditions in the immediate vicinity of Wahiawa Intermediate School. Although there would be increases in present noise and air pollution levels, the air and noise quality analyses in this report indicate that these increases are not expected to exceed Federal design levels.

Of immediate concern is the pedestrian safety of school children. During the regular school session, there is a high volume of vehicular traffic on Rose Street around Wahiawa Intermediate School especially in the early morning and afternoon. This traffic primarily includes local residents commuting to and from work, vehicles of parents taking their children to and from school, and school bus runs to and from Schofield Barracks, Wheeler AFB, Whitmore

Village and Upper and Lower Wahiawa. Mixed with this vehicular traffic is pedestrian and bicycle traffic of school children commuting to and from school. Alternative A would increase present vehicular traffic levels further which would present potential safety hazards to these students. This traffic condition would require certain safety measures, i. e., school speed zone, flashing yellow lights at crosswalks, crossing guards, bicycle lanes, etc. At present, the school has a driveway and large parking area that could be modified to divert school bound vehicular traffic off Rose Street.

Alternative A would extend along the southern edge of Leilehua High School. This alignment would be subject to relocation further southward if Federal lands are successfully acquired to allow for the southward expansion of the high school. School access roads (300 ADT, 1977-1997) would connect to the Alternative A corridor to accommodate school bus turn-off lanes for the loading and unloading of passengers. This should relieve much of the bottleneaking condition presently occurring on California Avenue in front of the high school. Traffic volume projections along this portion of Alternative A would increase from 2,730 ADT in 1977 to 4,160 ADT by 1997. A decrease in school bound traffic (including buses, vehicles and pedestrians) can be expected in connection with decreasing student enrollments projected for Leilehua High. Table 21 indicates that the high school enrollment would decrease about 27% from 2,854 students in the 1974-75 school year to 2,078 students by 1980. A portion of this decrease can be attributed to the redistribution of high school students who live in Mililani Town and attend Leilehua High. During the 1974-75 school year, the new Mililani High School offered only grades 9 and 10. 11th and 12th grade students had to commute from

TABLE 21

PUBLIC SECONDARY SCHOOL ENROLLMENT PROJECTIONS  
1975 - 1980

<u>School (Location)</u>	<u>1974-1975</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
Wahiawa Elementary (Wahiawa)	798	739	706	600	651	659	667
Iliahi Elementary (Wahiawa)	453	430	411	383	373	375	386
Kaala Elementary (Wahiawa)	651	629	604	584	577	569	573
Wahiawa Intermediate (Wahiawa)	1,144	1,207	1,226	1,232	1,106	1,127	1,141
Leilehua High (Wahiawa)	2,854	2,607	2,348	2,244	2,066	2,015	2,078
Hale Kula Elementary (Schofield)	963	998	983	977	934	928	939
Solomon Elementary (Schofield)	913	945	991	1,327	1,313	1,279	1,290
Wheeler Elementary (Wheeler AFB)	915	876	844	828	825	830	835
Wheeler Intermediate (Wheeler AFB)	639	770	741	738	732	790	829
Mililani High (Mililani Town)	618 <sup>a</sup>	905 <sup>b</sup>	1,226 <sup>c</sup>	1,369	1,465	1,581	1,656

a offered grades 9 and 10 only

b offer grades 9, 10 and 11

c offer all grade levels, 9-12

Source: Business Office, Central District (OAHU), Department of Education, State of Hawaii, July, 1975

Mililani Town to Leilehua High School. By the 1976-77 school year, Mililani High School will offer all four grade levels and will fully accommodate the high school age population of Mililani Town. The State Department of Education does not expect the school age population of Mililani Town to impact any public schools within Wahiawa Town beyond the year 1977. In any event, traffic volumes associated with Alternative A will be high and will necessitate pedestrian safety provisions for the welfare of the students.

Increased traffic on the Uluwehi Place connector would also have presented safety hazards for school children attending the Lutheran Church private school (grades kindergarten through eighth) at the corner of Uluwehi Place and California Avenue. This is one major reason why this connection has been dropped from Alternative A.

2) Alternative B

This proposed corridor, which would span Wahiawa Reservoir and connect California Avenue with the intersection of Kunia Road and Wilikina Drive, would increase traffic volume by Kaala Elementary School to 4,940 ADT in the year 1977 and 8,200 ADT by the year 1997. Although associated increases in air and noise pollution levels would occur, these increases would not exceed Federal design levels. Of primary concern is the welfare and public safety of school age children on nearby public streets, especially California Avenue. Increased traffic conditions associated with Alternative B would also necessitate certain safety measures such as a school speed zone, crossing guards, well-marked crosswalks, bicycle lanes, etc. At present, the school has a driveway and parking lot area that could be modified and used to divert school bound traffic off the main road.

Alternative B would provide direct access from Schofield and Wheeler AFB to Wahiawa Town for military school buses destined for Wahiawa Intermediate School and Leilehua High School.

b. Open Space and Recreational Areas

Both second entrance corridors would encroach upon open space areas. Alternative A would extend through a large open area called the East Range, which is controlled by the military and closed to general public use.

Alternative B would involve road and bridge construction across the Wahiawa Reservoir, a preservation and recreation area. In the short-term, this construction would disturb bottom sediments and may introduce soil materials into the reservoir, affecting water quality and possibly creating a short-term disturbance to fishing activities near the sewage treatment plant outfall. Although this alternative would not destroy any fish habitat, it would represent a significant visual intrusion and would thus degrade the scenic quality of a popular recreational spot. Neither Alternative A nor B would interfere with or affect the planning of the Wahiawa Fresh Water Park by the State of Hawaii Department of Land and Natural Resources. This park is proposed for location along the north side of the south fork of the Wahiawa Reservoir.

I. LAND USE

1. Alternative A

Although Alternative A would traverse an area zoned for restricted agricultural uses, it would not disturb any agricultural crops or uses. This area is currently held by the military for tactical maneuvers and training. Right-of-way acquisition or donation would be a key

problem since the Army has expressed strong opposition to Alternative A extending through the East Range. The connectors at Rose Street and Leilehua Road would not affect the zoning of these residential areas. Alternative A would require an amendment to the Detailed Land Use Map of the 1966 General Plan for the final alignment and path of this corridor through the East Range. This corridor would not affect any known historic sites in the area.

2. Alternative B

This corridor would extend through a vacant area that is located north of the Kunia Road intersection with Wili-kina Drive and is currently zoned for apartment uses. The bridge, included in Alternative B, would span about 600 feet across the Wahiawa Reservoir. Although it would not displace any existing activities, the bridge would encroach upon an area designated for preservation land use, the purpose of which is to protect and preserve park lands, wilderness areas, open space, scenic areas, historic sites, watersheds and water supplies, and to conserve fish and wildlife. Alternative B would not affect any known historic sites in the area, according to the State of Hawaii Department of Land and Natural Resources. The Detailed Land Use Map of the 1966 General Plan for the City and County of Honolulu includes and shows the Alternative B alignment which extends through designated areas for medium density, preservation, recreational and light industrial land uses (Figure 7).

J. CIRCULATION

1. Alternative A

Table 1 shows the average daily traffic projections for the portion of Kamehameha Highway between the new Wilson Bridge and California Avenue; both with and without Alternative A. It is anticipated that Alternative A would relieve the basic condition on that portion of Kamehameha Highway within Wahiawa Town by about 3,940 ADT in 1977, about 5,050 ADT by 1987 and 6,230 ADT by 1997.

In effect, this corridor would provide a bypass away from Wilson Bridge and the central business district for commuters who live in the eastern portions of Wahiawa Town. This diversion of local traffic away from the business district, however, might incur some negative impacts in terms of potential losses in retail sales, services, and business exposure.

The alignment proposed in Alternative A is conceptual in nature and is subject to further resolution with the U. S. Army which opposes the placement of this corridor through the East Range. Ideally, the western end of Alternative A should link with the East Range Road; however, the U. S. Army contends that this would create potential conflicts with current military operations and use of this roadway. As consequences, Alternative A connects to Kamehameha Highway north of East Range Road, thereby creating an additional intersection. As shown in Figure 3, Alternative A would not have direct or easy access to and from Interstate Defense Route H-2.

A motorist, traveling northbound on H-2 and wishing to use Alternative A, would have to take the off ramp to Golf Course Road, turn left on to Golf Course Road, then turn right on to Kamehameha Highway, and finally turn right on to the Alternative A corridor. On the other hand, a motorist, desiring to transition from Alternative A to H-2, would have to turn left and cross Kamehameha Highway, possibly without the aid of any mechanical signalization, then turn left again across Kamehameha Highway on to Golf Course Road, and finally turn right on to the H-2 on ramp.

Public safety would become a primary concern where Alternative A would connect with California Avenue by way of Rose Street and Leilehua Road through residential areas. The installation of curbs and sidewalks for pedestrians, especially children, would become necessary for Leilehua Road, where traffic would increase to 2,430 ADT in 1977, 3,120 ADT in 1987 and 3,860 ADT in 1997. The access roads at Leilehua High School would connect to the Alternative A corridor to accommodate school bus turn-off lanes for the loading and unloading of passengers. This would relieve the bottlenecking condition presently occurring in front of the high school on California Avenue.

## 2. Alternative B

Table 1 also shows the average daily traffic projections for that portion of Kamehameha Highway between the new Wilson Bridge and California Avenue, both with and without Alternative B. In essence, the Alternative B corridor would relieve the basic condition of Kamehameha Highway by about 6,400 ADT by the year 1977, about 7,690 ADT by 1987 and 8,990 ADT by the year 1997. This alternative would provide a direct, easily accessible route for commuters traveling between Wahiawa Town and points that include Schofield Barracks, Wheeler AFB, Waipahu and others. The entrance road to the existing Sewage Treatment Plant would require relocation. Sidewalks on both sides of California Avenue (west of Kamehameha Highway) would enhance public safety and mitigate potential hazards associated with increases in traffic volume.

## EVALUATION OF ALTERNATIVE C

The "No-Project" alternative would have none of the adverse or beneficial, social, economic, or environmental impacts described above for Alternatives A and B. Of particular importance is the fact that traffic would not be increased on residential streets that currently carry only local traffic. The safety hazards, noise, and air pollution that this increased traffic would generate were primarily considerations in selecting Alternative C as the current course of "action". However, until a second entrance into Wahiawa is provided, Kamehameha Highway will continue to bear the full burden of traffic-generated noise and air pollution, which could adversely affect the businesses of central Wahiawa.

The existing (1976) condition of traffic congestion on Kamehameha Highway at the Wilson Bridge will be alleviated by a new six-lane bridge to be completed by late 1978. Not until 1997, if traffic projections are realized, will congestion again become a problem. It is anticipated that by that time the several adverse effects of Alternative A will be outweighed by the need for better access into Wahiawa Town.

---

CHAPTER 5  
UNAVOIDABLE ADVERSE IMPACTS

---



CHAPTER 5  
UNAVOIDABLE ADVERSE IMPACTS

COMPARISON OF ALTERNATIVES A AND B

A. TOPOGRAPHY

1. Alternative A

The southeast corridor would alter the land form within the East Range Military Reservation, and would have a long-term affect on visual quality. Few persons, however, would be exposed to this area with the exception of residents in the portion of town east of Leilehua High School.

2. Alternative B

The bridge structure crossing Wahiawa Reservoir in Alternative B would be exposed to a greater number of persons, and would have a long-term impact on the visual quality of the area.

B. SURFACE AND GROUND WATER

Construction of the bridge crossings, and placement of pilings for both alternatives would have an unavoidable impact on water quality in Wahiawa Reservoir. The impact would result primarily from construction, and would be of short duration.

C. AIR QUALITY

Construction activities and motor vehicle operation over either alternative roadway would contribute emissions of air pollutants to the airshed around Wahiawa. Estimates of the concentration of CO associated with each roadway indicated, however, that Federal and State Air Quality Standards would not be exceeded. Emissions from mobile sources would accompany an increase of traffic even without a second entrance. A second entrance roadway would contribute to improved circulation in Wahiawa and better vehicle operating conditions at certain locations in the community. This impact could contribute to a reduced level of air quality degradation on a "local" basis.

D. SOCIAL ENVIRONMENT

1. Alternative A

Increased traffic volumes associated with Alternative A would increase present noise and air pollution levels and potential safety hazards at several public schools (Wahiawa Intermediate and Leilehua High) and in residential areas adjacent to Rose Street and Leilehua Road.

Although increases in air and noise pollution would not exceed Federal design levels, these increases might cause residents to make certain adjustments that incur social costs which are difficult to assess. Potential safety hazards could be mitigated to a certain degree by various means, e. g., school speed zones, crosswalks, traffic signals, bicycle lanes, sidewalks, etc. However, hazardous conditions created by increased traffic volume cannot be fully eliminated, especially in the vicinity of schools and residential areas.

2. Alternative B

Increased traffic volume of Alternative B would involve similar unavoidable social impacts discussed for Alternative A with respect to public schools, in this instance Kaala Elementary School, and to a lesser degree residential areas.

Alternative B would displace the caretaker's cottage at the City and County Sewage Treatment Plant.

E. LAND USE

1. Alternative A

The alignment of Alternative A through the East Range would present a major land use conflict with the U. S. Army, which currently uses the area for military training and operations. At present, the military strongly opposes any public access through the East Range.

2. Alternative B

Alternative B would encroach upon Wahiawa Reservoir, a preservation area.

F. CIRCULATION

Alternative A is not an ideal alignment primarily because the military opposes any link with the East Range Road. This corridor would create an additional intersection at Kamehameha Highway and would not have direct and easy access to and from Interstate Defense Route H-2.

ALTERNATIVE C

The alternative of not providing a second entrance into Wahiawa would have no unavoidable adverse impacts at the present time. If traffic increases to a point where the new Wilson Bridge cannot adequately handle it (anticipated by 1997), a second entrance will be required. Not providing a second entrance at that time would result in traffic congestion on Kamehameha Highway with attendant increases in noise and air pollution and hinderance of emergency vehicles.



---

CHAPTER 6  
SHORT-TERM USES  
VERSUS LONG-TERM PRODUCTIVITY

---



CHAPTER 6  
THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM  
USES OF MAN'S ENVIRONMENT AND THE MAIN-  
TENANCE AND ENHANCEMENT OF LONG-TERM  
PRODUCTIVITY

Of particular importance in describing the relationship between short-term use of the environment and long-term maintenance and enhancement of productivity, is recognition of the degree to which a particular project represents a long-term commitment of social, economic, and biological resources. The resources available in an area, to a large extent, constrain the reasonable limits of productivity and should influence short-term decision making.

A second entrance roadway to Wahiawa will require labor, materials, and monetary resources in the short-term. In addition, the roadway will consume or displace relatively small amounts of land and natural resources within the corridor chosen for the final alignment. The consumptive use of labor, materials, and monetary resources associated with construction of the second entrance project, however, is not expected to foreclose future options or pose a long-term risk to the local or regional environments of Wahiawa. Displacement of vegetation and wildlife within the corridor should not pose a long-term risk to the quality of the natural environment, due to the types of biological organisms present in each alternative corridor, and the level to which these organisms have been exposed to development in the past.

Provision of a second entrance roadway will also represent a long-term commitment of labor, materials, and monetary resources for maintenance of the roadway. This long-term commitment is expected to be small in relation to the level of enhancement of productive use of the environment provided by improved traffic circulation in Wahiawa, and a more flexible transportation system.

The project as proposed consists of deferring the construction of a second entrance (Alternative A) until justified by volumes. The present course is "no action". The project will be constructed only if growth in the community makes a second entrance necessary. There will therefore be no induced growth.



---

CHAPTER 7

IRREVERSIBLE AND IRRETRIEVABLE  
COMMITMENTS OF RESOURCES

---



CHAPTER 7  
IRREVERSIBLE AND IRRETRIEVABLE  
COMMITMENTS OF RESOURCES

The land, labor, and materials required for construction and maintenance of a roadway are basically irreversible since a commitment of these resources makes removal or nonuse unlikely. The quantities and types of materials used in roadway construction for the second entrance project will not present a risk to the resources available in the area, nor will use of the limited amounts of resources curtail the range of uses. The land area occupied by a new roadway in Wahiawa will not be available for other uses during the life of the project, and the range of uses for land areas adjacent to the new corridor may be influenced by existence of the roadway. Labor used during construction and maintenance of a second entrance to Wahiawa will be irretrievably committed.





---

BIBLIOGRAPHY

---

0  
1  
2  
3  
4  
5  
6  
7  
8  
9  
A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P  
Q  
R  
S  
T  
U  
V  
W  
X  
Y  
Z

## BIBLIOGRAPHY

Advanced Planning Division. Feasibility and Cost Study for a Second Entrance into Wahiawa. Bureau of Highways, Department of Transportation, January 1960.

City and County of Honolulu. Comprehensive Zoning Code (C2C) 1969, Ordinance No. 3234, January 2, 1969; and 1975 Cumulative Supplement of the Comprehensive Supplement of the Comprehensive Zoning Code 1969, December 31, 1974.

Dept. of Land and Natural Resources. Annotated Checklists of the Birds and Mammals of Hawaii. Division of Fish and Game, 1975.

Environmental Quality Commission. Environmental Impact Statement Regulations. June 2, 1975.

Highway Planning Section. Preliminary Engineering Design Report for Wilson Bridges and Approaches. Highways Division, Department of Transportation, June 1973.

Highway Planning Section. Wahiawa Bridge: Preliminary Engineering Study and Cost Estimate. Bureau of Highways, Department of Transportation, February 1964.

Highway Research Board. National Cooperative Highway Research Program Report 117. 1971.

NOAA. Local Climatological Data 1974. National Weather Service Forecast Center, Honolulu, Hawaii. 1974.

State of Hawaii Dept. of Health. Hawaii Air Quality Data for the period of February 1971 - December 1972. Air Sanitation Branch, February 20, 1973.

State of Hawaii Dept. of Health. Public Health Regulations, Chapter 37-A-Water Quality Standards. May 25, 1974.

State of Hawaii Dept. of Health. Summary of Total Air Pollutant Emissions in the State of Hawaii, 1970. Air Sanitation Branch, May 1973.

State of Hawaii, Hawaii State Census Test Committee, Population and Housing Unit Estimates for Oahu Census Tracts, 1970-1974, Report CTC-28, February 28, 1975.

State of Hawaii Dept. of Transportation, Highways Division. Action Plan. Highway Planning Branch, October 1973.

State of Hawaii Department of Transportation, Highways Division. Final Environmental Statement for Wilson Bridge and Approaches. Project No. F-080-1 (3), 1972.

Terminal Forecast Reference File for Wheeler AFB Oahu, Hawaii, Operating Location 1, Detachment 4, 1st Weather Wing, August 6, 1969.

U. S. Dept. of Agriculture. Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii. Soil Conservation Service August 1972.

U. S. Dept. of the Interior and Dept. of Land and Natural Resources. Hawaii's Endangered Waterbirds. Bureau of Sport Fisheries and Wildlife and Division of Fish and Game, September 1970.

U. S. Dept. of the Interior. An Investigation of Floods in Hawaii through September 30, 1973. Geological Survey, Water Resources Division, January 1974.

U. S. Dept. of Transportation. Federal-Aid Highway Program Manual Vol. 7, Ch. 7, Sec. 2, Federal Highway Administration, December 30, 1974.

U. S. Dept. of Transportation. Policy and Procedure Memoranda 90-1, 90-2, 90-3 and 90-4. Federal Highway Administration, September 7, 1972, February 8, 1973, April 10, 1973, and June 1, 1973. (multiple listing)

U. S. Environmental Protection Agency. Interim Guidelines for the Review of the Impact of Indirect Sources on Ambient Air Quality. Office of Air Quality Planning and Standards, July 1974.

U. S. Geological Survey. Water Resources of North-Central Oahu, Hawaii. Water Supply Paper 1899-D, 1971.

Wilson Associates. Preliminary Engineering Study of Bridges to Serve Wahiawa. March 1963.

---

APPENDIX A  
ORGANIZATIONS AND PERSONS CONSULTED

---



## APPENDIX A

### I. PERSONS AND AGENCIES CONSULTED

1. Department of Transportation  
State Highways Division  
State of Hawaii
2. Department of Health  
State of Hawaii
3. Office of Environmental Quality Control
4. National Oceanics and Atmospheric Administration  
National Weather Service  
Honolulu International Airport
5. Department of Education  
Central District (Oahu)  
State of Hawaii
6. Department of Land and Natural Resources  
State of Hawaii
7. Department of Planning and Economic Development  
State of Hawaii
8. Planning Department  
City and County of Honolulu

II. MAILING LIST FOR PUBLIC INFORMATION MEETING HELD  
ON FEBRUARY 5, 1975

Federal Highway Administration  
677 Ala Moana Boulevard  
Suite 613  
Honolulu, Hawaii 96813

Chairman, Board of Education  
Queen Liliuokalani Building  
1390 Miller Street  
Honolulu, Hawaii 96813

The Honorable George Yuen  
Director, Department of Health  
1250 Punchbowl Street  
Honolulu, Hawaii 96813

The Honorable Christopher Cobb  
Chairman and Member  
Board of Land and Natural Resources  
State Office Building  
465 South King Street  
Honolulu, Hawaii 96813

Dr. Richard E. Marland  
Interim Director  
Office of Environmental  
Quality Control  
Office of the Governor  
550 Halekauwila Street  
Tani Office Building, Third Floor  
Honolulu, Hawaii 96813

The Honorable Hideto Kono, Director  
Department of Planning and Economic  
Development  
Kamamalu Building  
Honolulu, Hawaii 96813

Base Commander  
Department of the Air Force  
15th Airbase Wing (CC)  
Hickam Air Base  
Honolulu, Hawaii 96553

Mr. Robert R. Way  
Chief Planning Officer  
Department of General Planning  
City and County of Honolulu  
629 Pohukaina Street  
Honolulu, Hawaii 96813

Federal Aviation Administration  
U. S. Department of Transportation  
1833 Kalakaua Avenue  
Honolulu, Hawaii 96815

Facilities and Auxiliary Services Branch  
Department of Education  
1712 South King Street  
Honolulu, Hawaii 96814

Soil Conservation Service  
U. S. Department of Agriculture  
Alexander Young Building  
1015 Bishop Street, Room 440  
Honolulu, Hawaii 96813

Commanding General  
Department of the Army Headquarters  
U. S. Army Hawaii  
APO 96557  
Attention: Directorate of Engineering

Environmental Science Services Administration  
U. S. Department of Commerce  
Coast and Geodetic Survey  
1149 Bethel Street  
Honolulu, Hawaii 96813

Environmental Protection Agency  
1000 Bishop Street  
Room 601  
Honolulu, Hawaii 96813

Bureau of Sport Fisheries and Wildlife  
U. S. Department of Interior  
337 Uluniu Street  
Kailua, Hawaii 96734

Dr. Henri Minette  
Environmental Health Division  
Department of Health  
1250 Punchbowl Street  
Honolulu, Hawaii 96813

Fish and Game Division  
Department of Land and Natural Resources  
1179 Punchbowl Street  
Honolulu, Hawaii 96813

Forestry Division  
Department of Land and Natural Resources  
1179 Punchbowl Street  
Honolulu, Hawaii 96813

State Parks Division  
Department of Land and Natural Resources  
465 South King Street  
Honolulu, Hawaii 96813

Water and Land Development Division  
Department of Land and Natural Resources  
465 South King Street  
Honolulu, Hawaii 96813

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

Mr. Young Suk Ko, Director  
Department of Parks and Recreation  
City and County of Honolulu  
1455 South Beretania Street  
Honolulu, Hawaii 96814

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

Mr. Paul Devens  
Managing Director  
City and County of Honolulu  
City Hall  
Honolulu, Hawaii 96813

Hawaii Audubon Society  
P. O. Box 5032  
Honolulu, Hawaii 96814

Mr. Harland Blindauer  
Mass Transit Division  
City and County of Honolulu  
1140 Alapai Street  
Honolulu, Hawaii 96813

The Honorable Howard Oda  
Representative, 22nd District  
State Capitol, Room 402  
Honolulu, Hawaii 96813

The Honorable Toraki Matsumoto  
Councilman  
City and County of Honolulu  
Honolulu, Hawaii 96813

The Honorable Joseph Kuroda  
Senator, 4th District  
1454 Hooehulu Street  
Pearl City, Hawaii 96782

The Honorable Patsy Young  
Senator, 4th District  
94-450 Awamoi Street  
Waipahu, Hawaii 96797

Citizens for Hawaii  
205 Merchant Street  
Room 18  
Honolulu, Hawaii 96813

Mr. Willis Moore  
Sierra Club Foundation  
P. O. Box 6037  
Honolulu, Hawaii 96818

Department of Education  
P. O. Box 2380  
Honolulu, Hawaii 96804

Life of the Land  
404 Piikoi Street  
Honolulu, Hawaii 96814

Outdoor Circle  
200 North Vineyard Boulevard  
Honolulu, Hawaii 96813

Wahiawa Community and Businessmen's Association  
830 L California Avenue  
Wahiawa, Hawaii 96786

Castle and Cooke, Inc.  
Financial Plaza of the Pacific  
Honolulu, Hawaii 96813

Waialua Sugar Company  
67-202 Kupahu Street  
P. O. Box 665  
Waialua, Hawaii 96791

Wahiawa Library  
820 California Avenue  
Wahiawa, Hawaii 96786

Mr. Hiram Diamond  
Hawaiian Civic Club  
169 Kalikoi Place  
Wahiawa, Hawaii 96786

Mr. H. Kawamoto  
Wahiawa Japanese Civic Club  
247-A Olive Avenue  
Wahiawa, Hawaii 96786

Mr. Roy Bonjoc  
Wahiawa Jaycees  
Box 453  
Wahiawa, Hawaii 96786

Dr. William H. Wilkinson  
Wahiawa Rotary Club  
373 Kilani Avenue  
Wahiawa, Hawaii 96786

Mr. John Sierra  
Wahiawa Filipino Community  
Box 865  
Wahiawa, Hawaii 96786

Ms. Glydes Bolo  
Wahiawa-Waiialua Professional Women's Club  
1384 Kaumahaha  
Pearl City, Hawaii 96782

The Honorable Francis Wong  
Senator, 4th District  
735 Bishop Street  
Suite 410  
Honolulu, Hawaii 96813

The Honorable Donald Ching  
Senator, 4th District  
2005 Aamanu Street  
Pearl City, Hawaii 96782

The Honorable Oliver Lunasco  
Representative, 22nd District  
P.O. Box 12  
Waiialua, Oahu 96791

The Honorable Hiram L. Fong  
U.S. Senator  
1313 Dirksen Senate Office Building  
Washington, D.C. 20510

The Honorable Spark M. Matsunaga  
Member of Congress  
442 Cannon House Office Building  
Washington, D.C. 20515

The Honorable Daniel K. Inouye  
U. S. Senator  
442 Richard Russell Building  
Washington, D. C. 20510

The Honorable Patsy T. Mink  
Member of Congress  
2338 Rayburn House Office Building  
Washington, D. C. 20515

MAILING LIST FOR  
EIS PREPARATION NOTICE

Federal Agencies

Agricultural Stabilization and Conservation Service  
U. S. Department of Agriculture

Soil Conservation Service  
U. S. Department of Agriculture

Federal Aviation Administration  
Department of Transportation

Forest Service  
U. S. Department of Agriculture

Assistant Secretary - Program Policy Director  
Environmental Project Review

Department of Housing and Urban Development

Department of Health, Education and Welfare

U. S. Economic Development Administration

U. S. Department of Agriculture

U. S. Army-Corps of Engineers  
Honolulu District

National Oceanic and Atmospheric Administration  
U. S. Department of Commerce  
National Ocean Survey  
Honolulu Field Office

National Bureau of Standards  
U. S. Department of Commerce

Director  
National Marine Fisheries Service

U. S. Department of Interior

Environmental Protection Agency

Advisory Council on Historic Preservation  
Attention: Mr. Robert Garvey  
Executive Director

Department of Commerce  
Attention: Dr. Sydney R. Galler  
Deputy Assistant

Federal Highway Administration

Department of the Army  
Commanding General  
Attention: Directorate of Engineering

Department of the Air Force  
Base Commander  
Wheeler Air Force Base

State of Hawaii

Department of Agriculture

Department of Accounting and General Services

Department of Defense

Department of Education

Department of Health

Department of Land and Natural Resources

Department of Planning and Economic Development

Department of Social Services and Housing

University of Hawaii  
Environmental Center  
Water Resources Research Center

City and County of Honolulu

Department of Transportation Services  
Attention: George Villegas

Department of Public Works  
Attention: Mr. Kazuyoshi Hayashida

Department of Parks and Recreation  
Attention: Young Suk Ko

Board of Water Supply  
Attention: Edward Hirata

Mass Transit Division  
Attention: Mr. Harland Blindauer

Building Department  
Attention: Ernest Yuasa

Department of General Planning  
Attention: Robert Way

Department of Land Utilization  
Attention: George Moriguchi

Public Utilities

Hawaiian Electric Company  
Attention: Mr. J. Rolfing

Hawaiian Telephone Company  
Attention: Mr. Richard Mau

Honolulu Gas Company  
Attention: Mr. Chuck Fong

Community Organizations

Wahiawa Community and Businessmen's Association



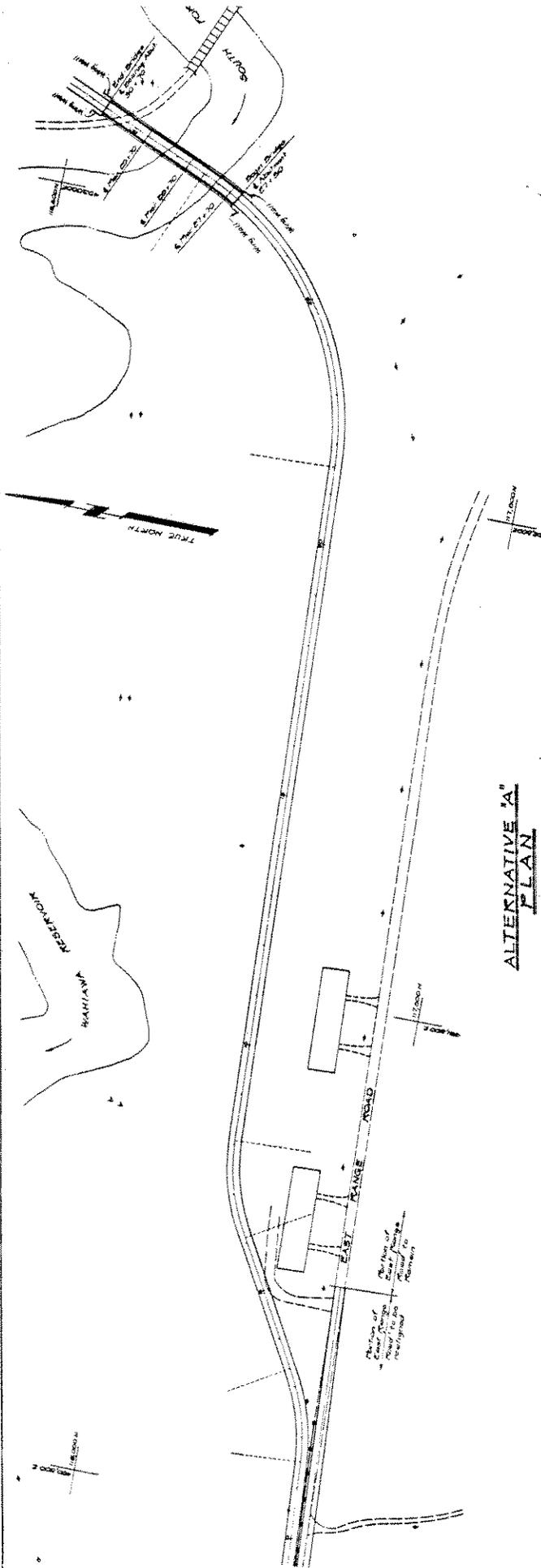
---

APPENDIX B  
ENGINEERING DATA

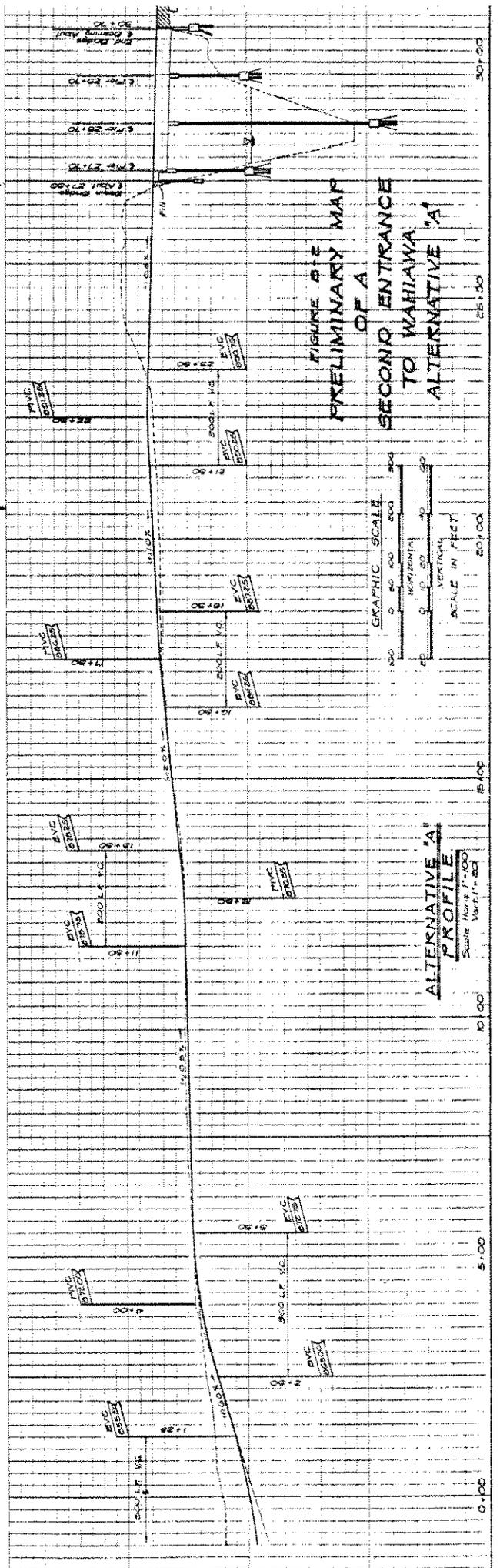
---







**ALTERNATIVE 'A'  
PLAN**











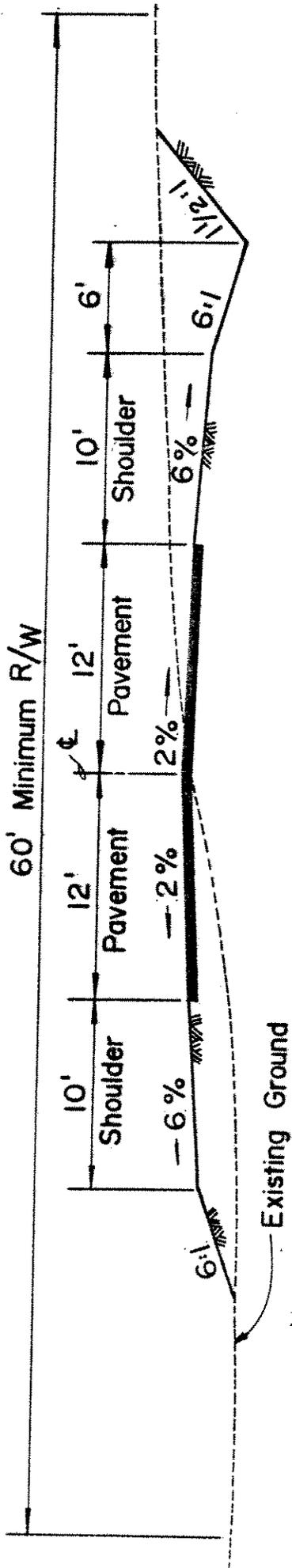


FIGURE B-7

## TYPICAL ROADWAY SECTION

NO SCALE

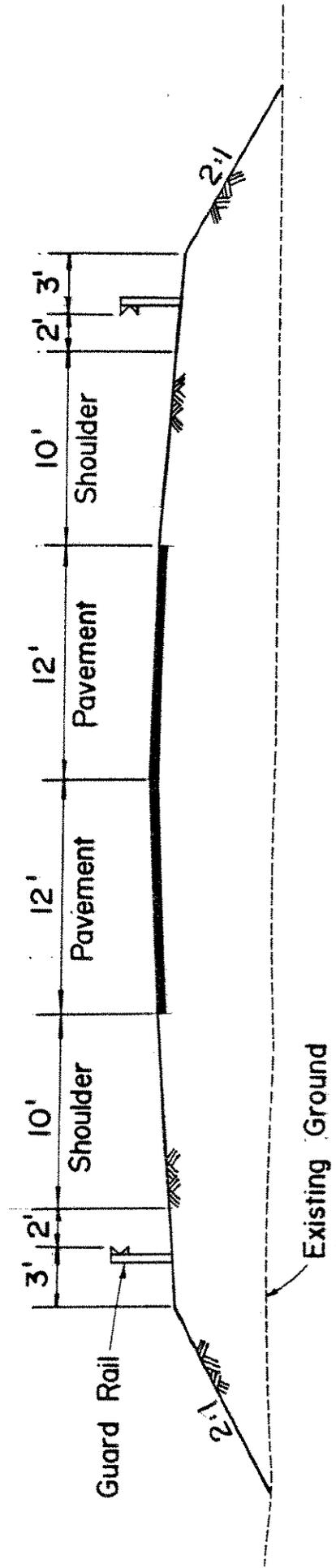
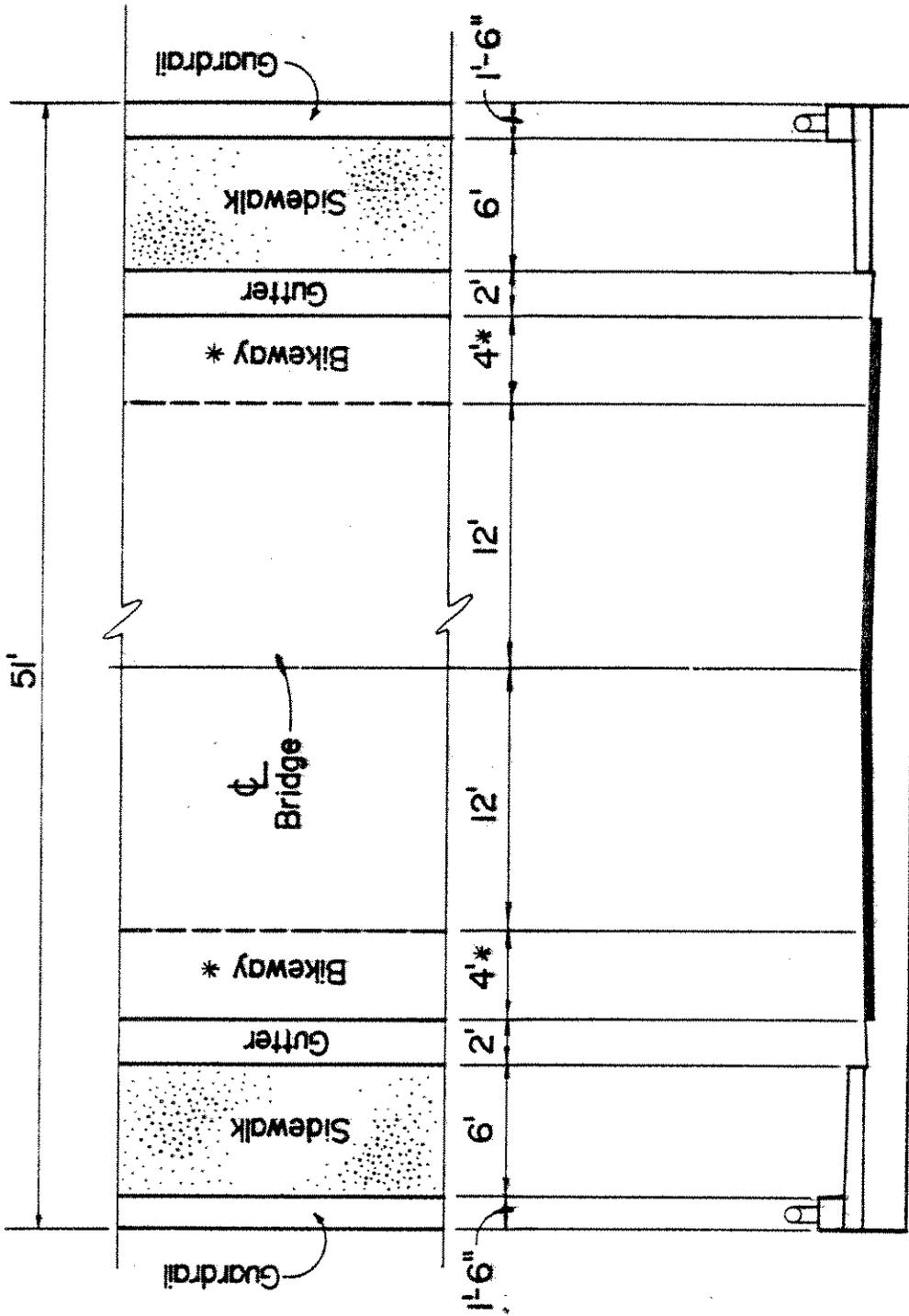


FIGURE B-8

TYPICAL SECTION @ GUARD RAIL

NO SCALE



\* Note: Space Provision for Bikeway

FIGURE B-9

# TYPICAL SECTION @ BRIDGE

NO SCALE

0  
1  
2  
3  
4  
5  
6  
7  
8  
9  
A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P  
Q  
R  
S  
T  
U  
V  
W  
X  
Y  
Z

---

APPENDIX C  
SOUND LEVEL DATA

---

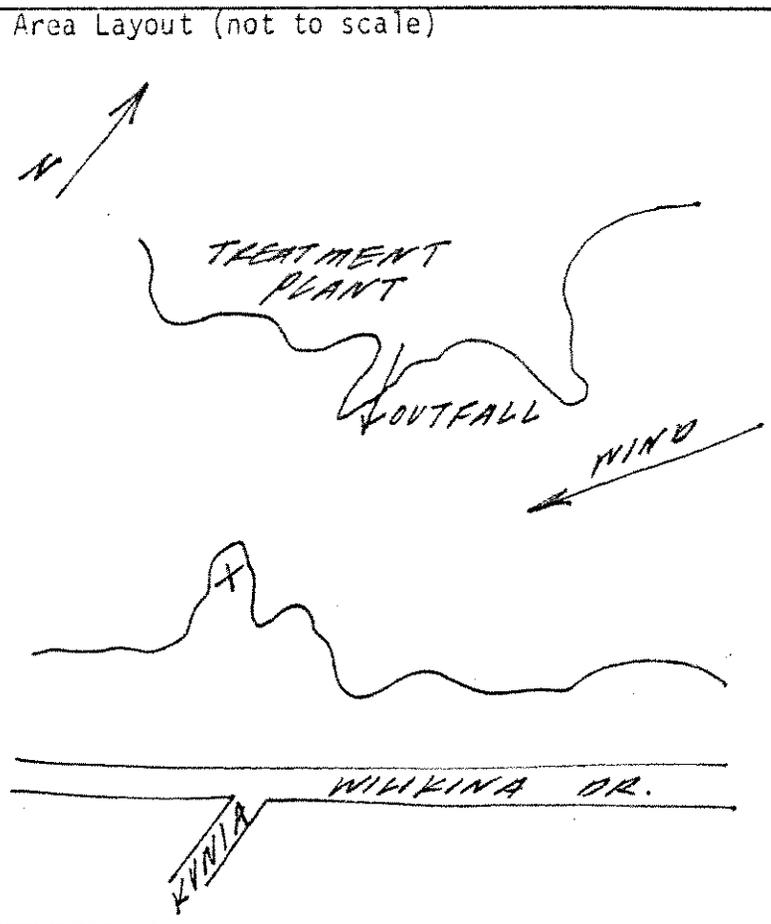


Site 2	Date 30 June 75 (PM) 1 July 75 (AM)	Area Layout (not to scale)  
Location KAALA ELEMENTARY SCHOOL		
Time 1625 - 1635 0800 - 0810		
Weather PM: Light winds, clear; T°=75°F		
AM: Light rain, overcast; T°=70°F		
Remarks Dominant noise sources: traffic on California Ave., Corporation yard, caterpillar tractor working about 150 yards east of site.		

AMBIENT NOISE LEVEL (dba)

Period	Range	Arith Average	Remarks
625-1635	49-65 dbA	54.5 dbA	Tractor operation east of site caused greatest peaks.
800-0810	45-67 dbA	52.0 dbA	Aircraft operation and light local traffic.

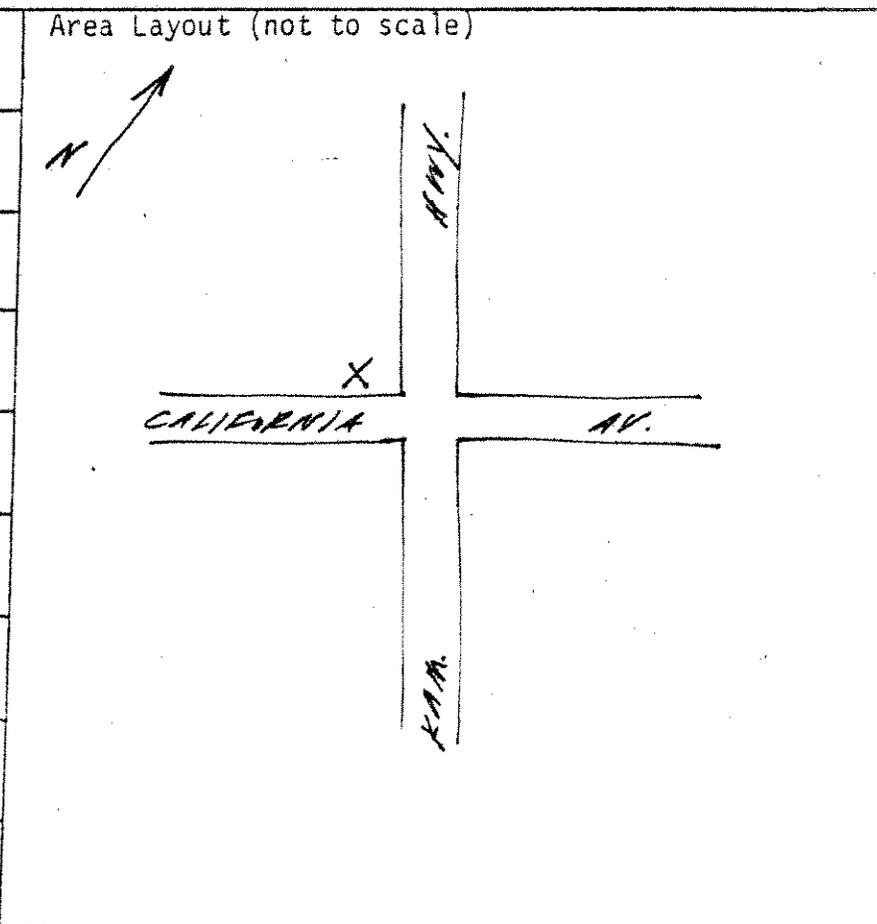
Site 1	Date 30 June 75 (PM) 1 July 75 (AM)
Location WAHIAWA RESERVOIR NEAR KUHIA	
Time 1600 - 1610 0820 - 0830	
Weather PM: Light winds, clear; T°=73°F	
AM: Light winds, clear, light intermittent rain, T°=69°F	
Remarks Dominant noise sources: sewage treatment plant outfall, traffic on Wilikina Road, wind in trees, aircraft from Wheeler AFB.	



AMBIENT NOISE LEVEL (dba)

Period	Range	Arith Average	Remarks
1600-1610	50-72 dBA	56.8 dBA	Peak noise levels due to helicopter passage.
0820-0830	51-69 dBA	55.5 dBA	Aircraft passage and start-stop of trucks on Wilikina Road generate peaks.

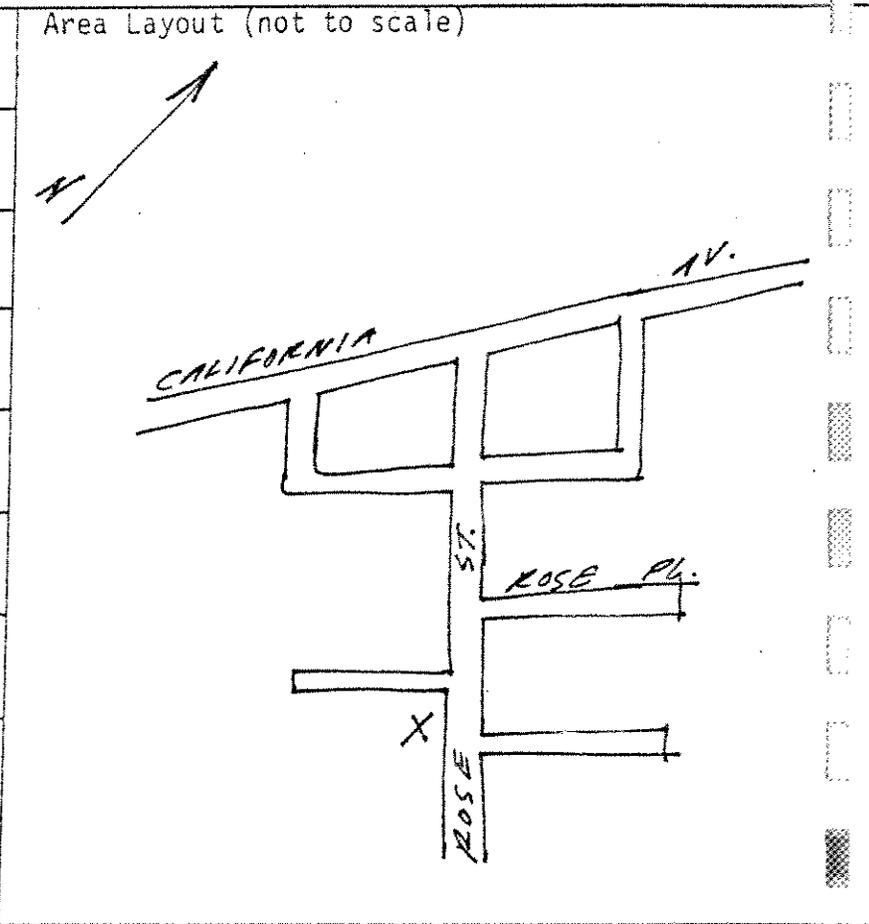
Site 3	Date 30 June 75 (PM) 1 July 75 (AM)
Location INTERSECTION OF CALIFORNIA AVE.  AND KAMEHAMEHA HWY.	
Time 1640 - 1645 0620 - 0630	
Weather PM: Clear, no wind; T°=76°F	
AM: Light rain, overcast; T°=71°F	
Remarks Dominant noise sources: traffic.	



AMBIENT NOISE LEVEL (dba)

Period	Range	Arith Average	Remarks
640-1645	61-75 dBA	67.9 dBA	-
620-0630	59-72 dBA	64.7 dBA	-

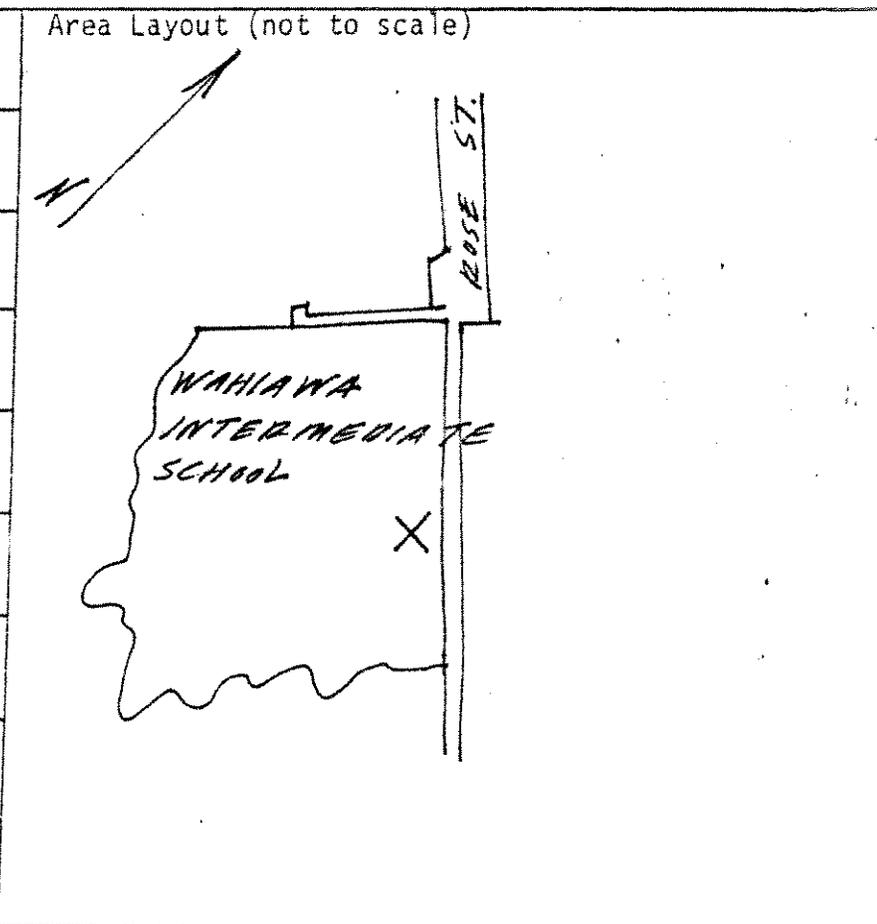
Site 4	Date 30 June 75 (PM) 1 July 75 (AM)
Location ROSE STREET NEAR ROSE PLACE	
Time 1650 - 1700 0745 - 0755	
Weather PM: Light wind, clear; T°=75°F	
AM: Slightly cloudy, light mist; T°=71°F	
Remarks Dominant noise sources: baseline noise levels relatively low. Passing cars cause distinct peaks.	



AMBIENT NOISE LEVEL (dba)

Period	Range	Arith Average	Remarks
1650-1700	39-67 dBA	48.2 dBA	Peak noise levels from traffic, and aircraft operations at Wheeler AFB.
0745-0755	38-76 dBA	59.2 dBA	Peak levels due to traffic (estimated vehicle speeds, 25-30 mph).

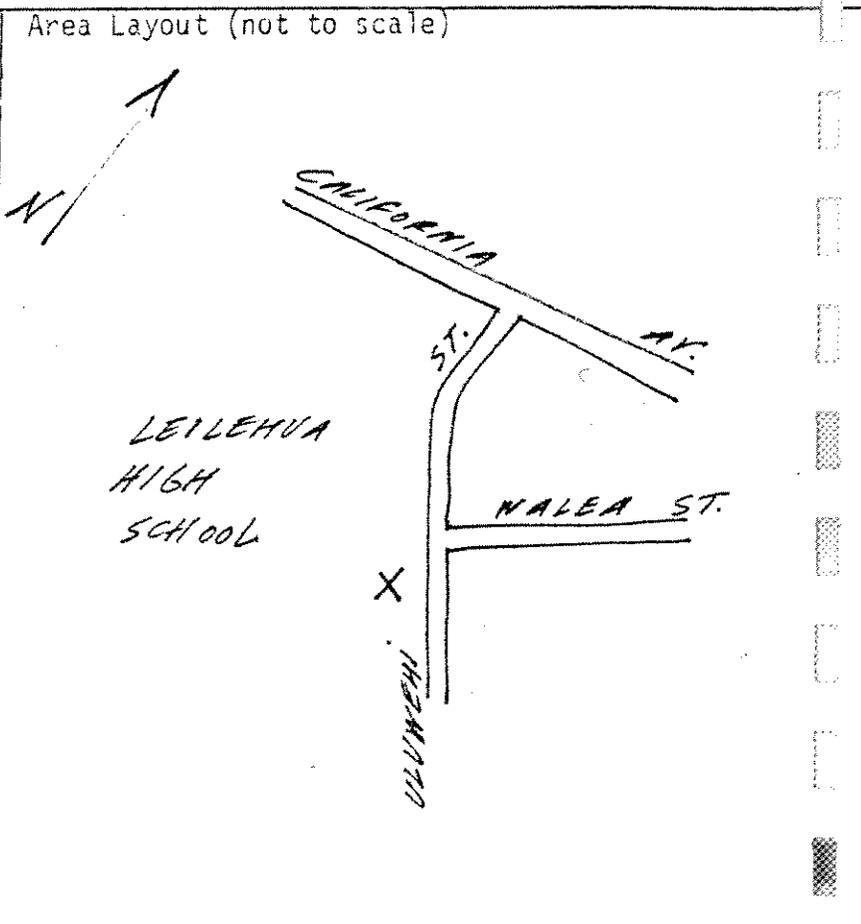
Site 5	Date 30 June 75 (PM) 1 July 75 (AM)
Location ROSE STREET AT WAHIAWA INTERMEDIATE SCHOOL	
Time 1705 - 1715 0730 - 0740	
Weather PM: Light wind, clear; T°=74°F AM: Cloudy, no wind, mist; T°=70°F	
Remarks Dominant noise sources: traffic dropping of students at school, aircraft operations.	



AMBIENT NOISE LEVEL (dba)

Period	Range	Arith Average	Remarks
705-1715	36-55 dBA	42.5 dBA	Little traffic, aircraft noise intermittent.
730-0740	41-66 dBA	50.4 dBA	Moderate traffic due to school activity.

Site 6	Date 30 June 75 (PM) 1 July 75 (AM)
Location ULUWEHI STREET NEAR WALEA STREET	
Time 1730 - 1740 0715 - 0725	
Weather PM: Light breeze, clear; T°=74°F	
AM: Cloudy, light mist; T°=69°F	
Remarks Dominant noise sources: traffic.	

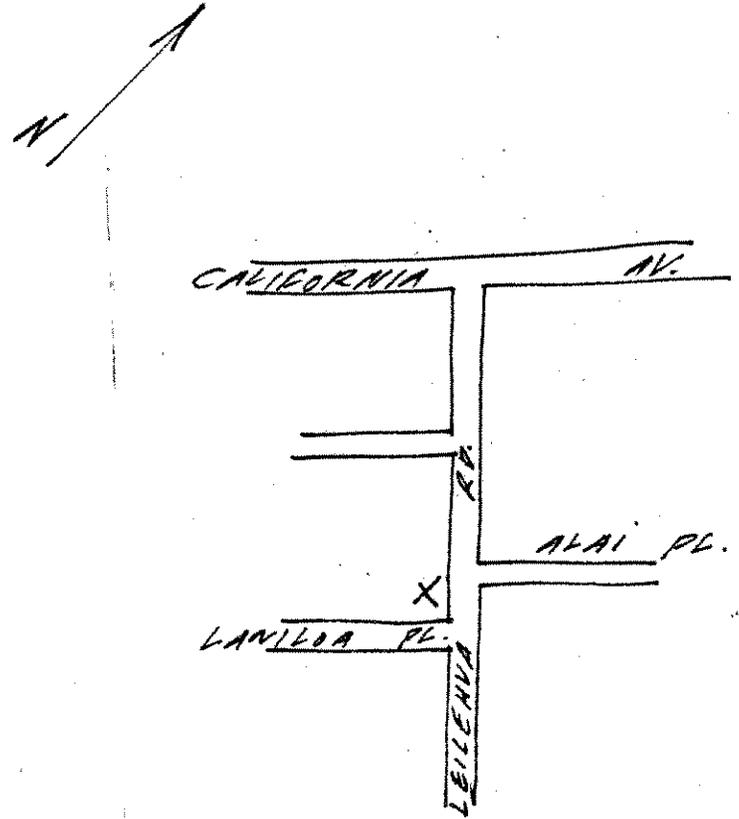


AMBIENT NOISE LEVEL (dba)

Period	Range	Arith Average	Remarks
1730-1740	36-59 dBA	41.2 dBA	Peak noise levels distinct and intermittent.
0715-0725	32-62 dBA	39.2 dBA	Streets wet.

Site 7	Date 30 June 75 (PM) 1 July 75 (AM)
Location LEILEHUA ROAD NEAR ALAI PLACE	
Time 1750 - 1800 0640 - 0650	
Weather PM: Light to moderate wind, clear; T°=73°F	
AM: Overcast, light rain; T°=70°F	
Remarks Dominant noise sources: traffic on Leilehua and distant traffic noise from California Ave. north- east of site.	

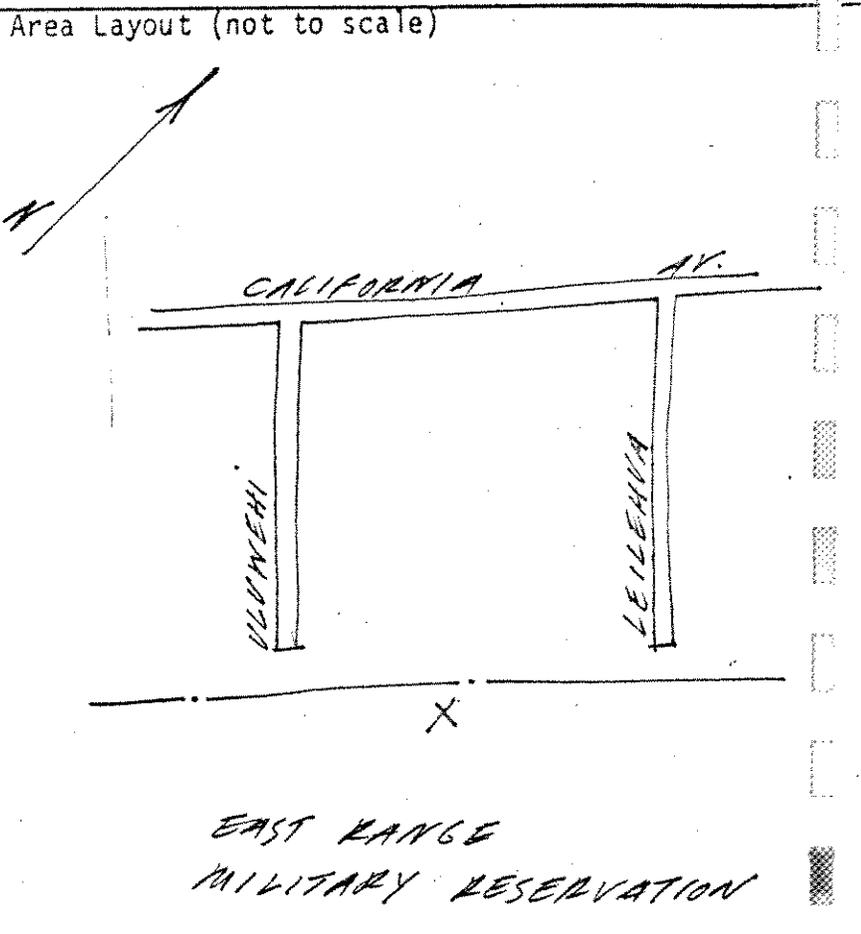
Area Layout (not to scale)



AMBIENT NOISE LEVEL (dba)

Period	Range	Arith Average	Remarks
150-1800	42-69 dBA	50.3 dBA	Dominant background noise from traffic on California Ave.
0640-0650	35-60 dBA	44.4 dBA	-

Site 8	Date 30 June 75 (PM) 1 July 75 (AM)
Location NORTHERN BOUNDARY OF EAST RANGE  BETWEEN ULUWEHI AND LEILEHUA	
Time 1800 - 1810 0655 - 0705	
Weather PM: Slight to moderate breeze, clear; T°=72°F  AM: Overcast, light rain; T°=68°F	
Remarks Dominant noise sources: wind through trees, residential units along fence.	

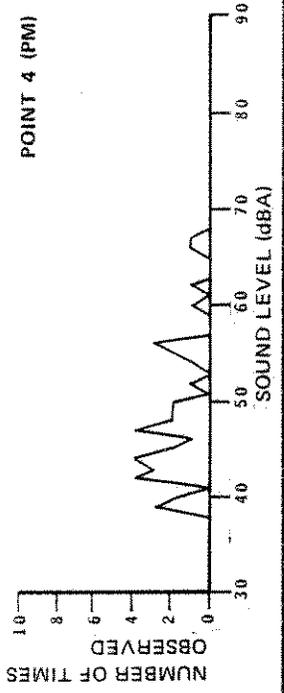
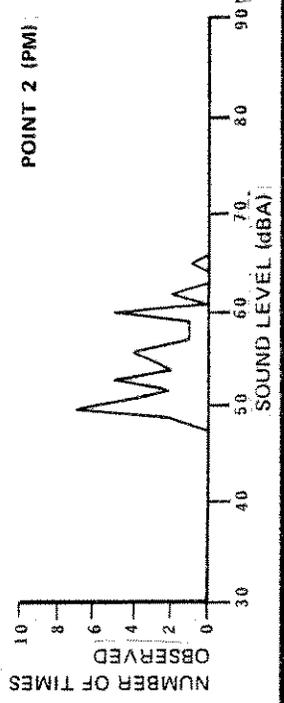
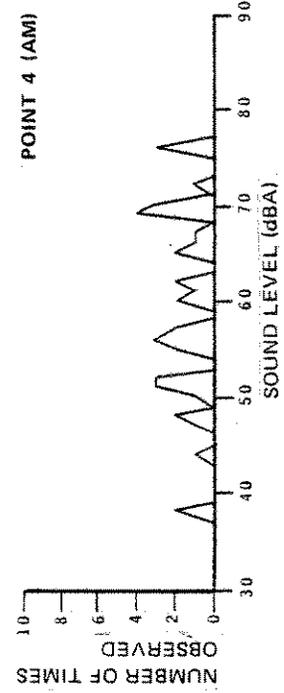
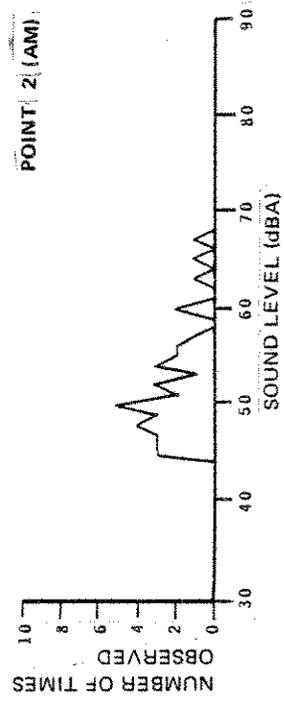
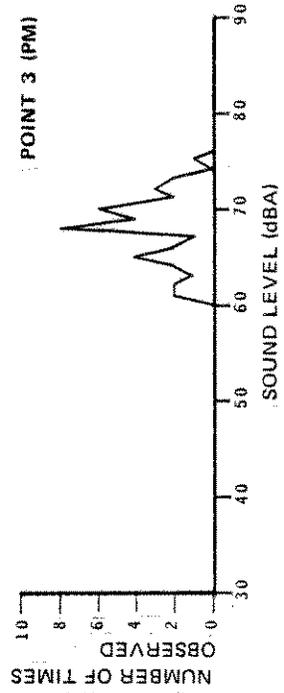
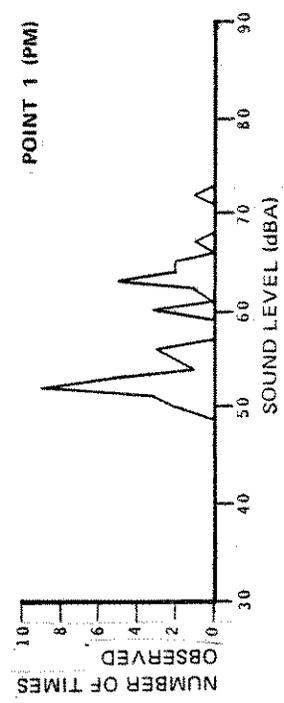
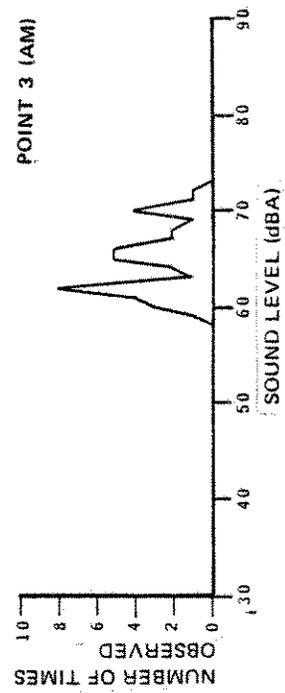
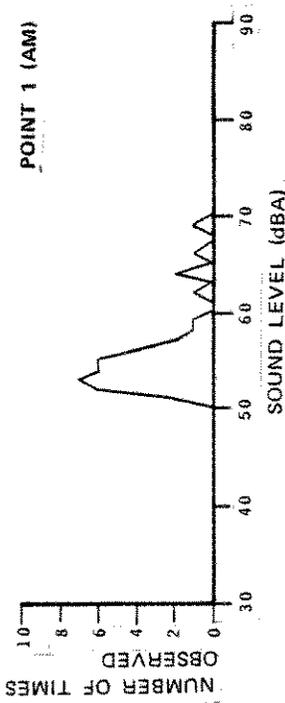


AMBIENT NOISE LEVEL (dba)

Period	Range	Arith Average	Remarks
1800-1810	38-53 dBA	41.1 dBA	-
0655-0705	31-40 dBA	36.2 dBA	-

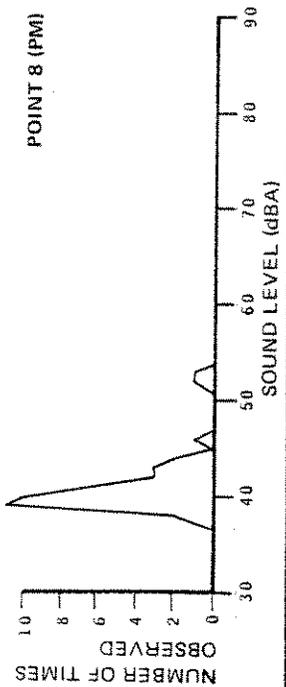
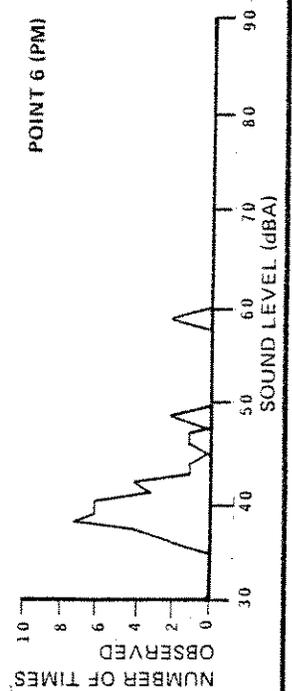
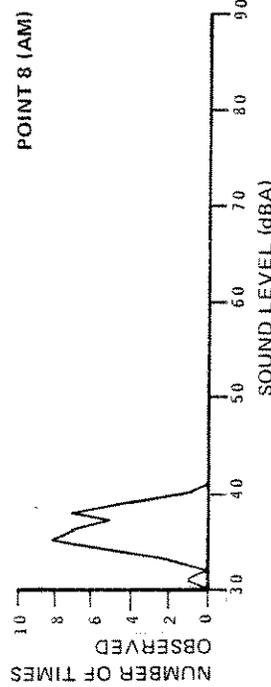
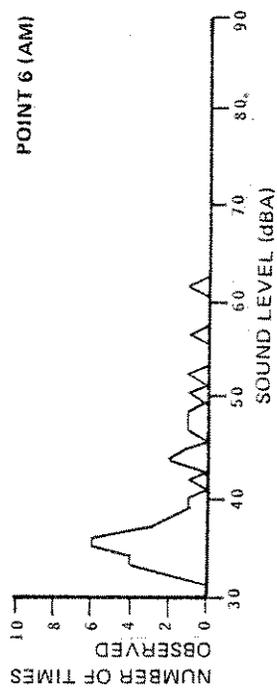
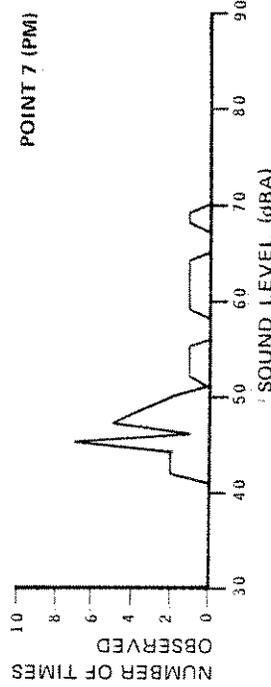
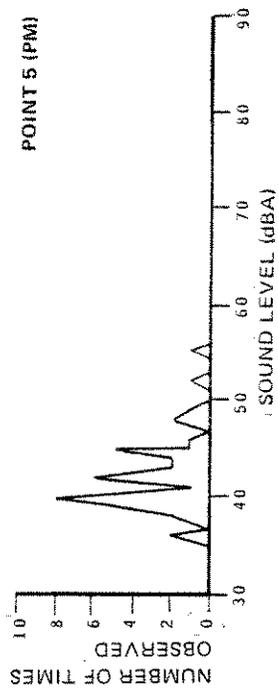
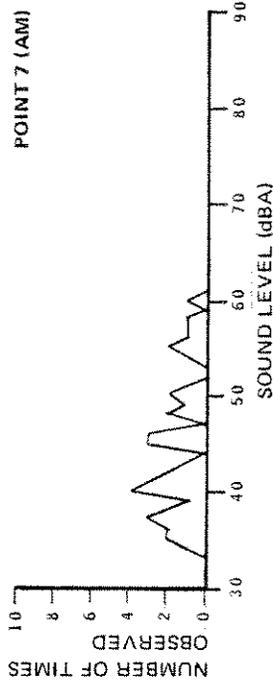
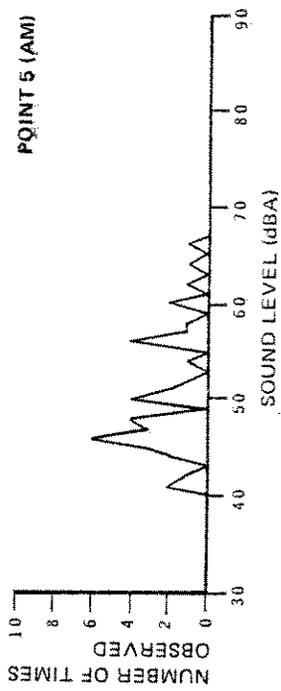
DISTRIBUTION OF SOUND LEVEL OBSERVATIONS

WAHIAWA  
1975



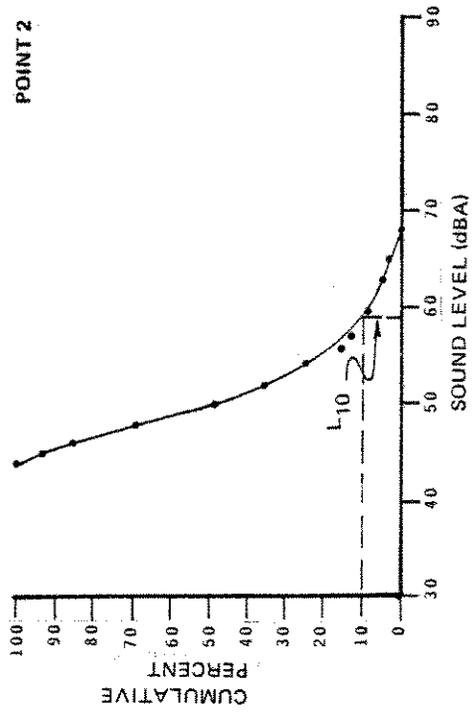
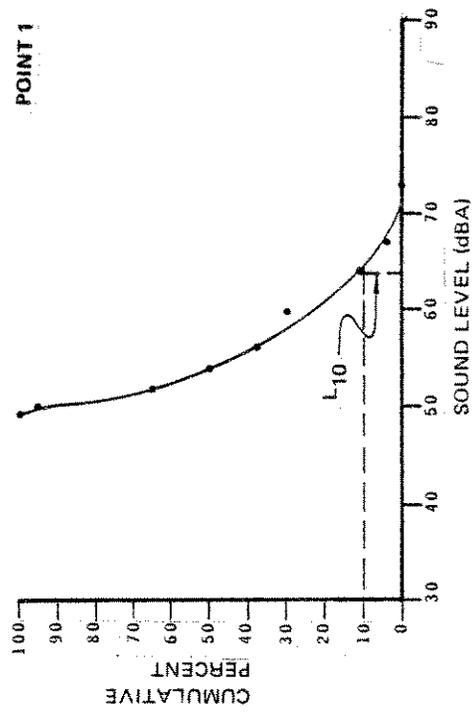
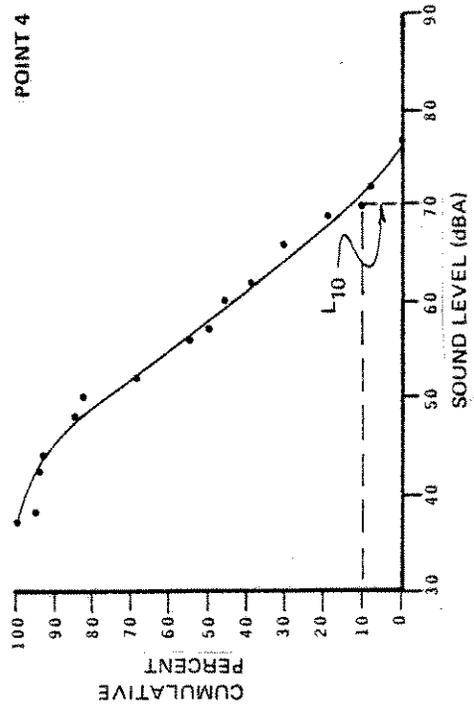
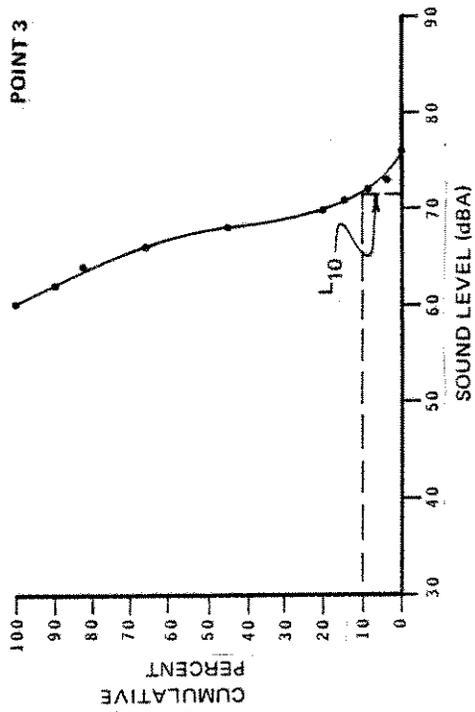
DISTRIBUTION OF SOUND LEVEL OBSERVATIONS (CONT'D)

WAHIAWA  
1975



PERCENTAGE OF TIME SOUND LEVELS ARE EXCEEDED

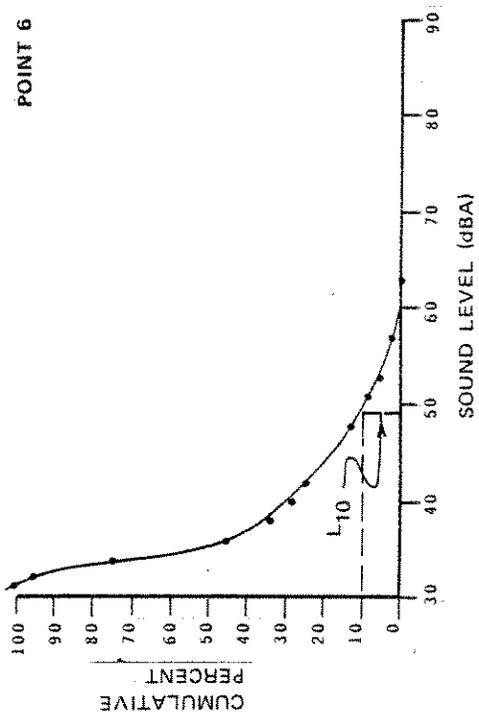
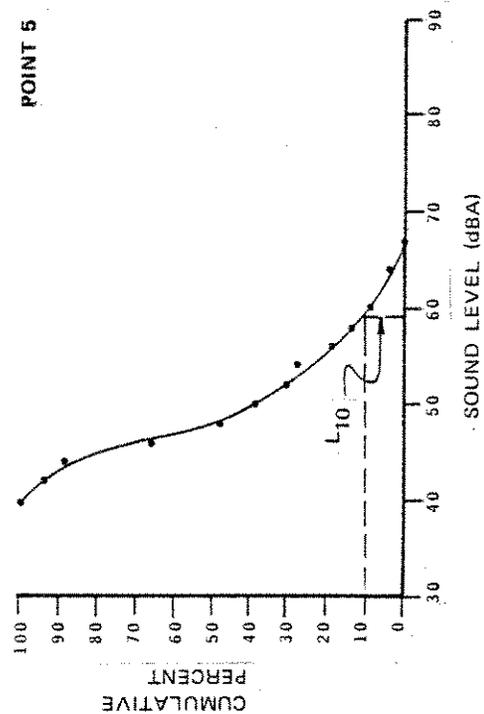
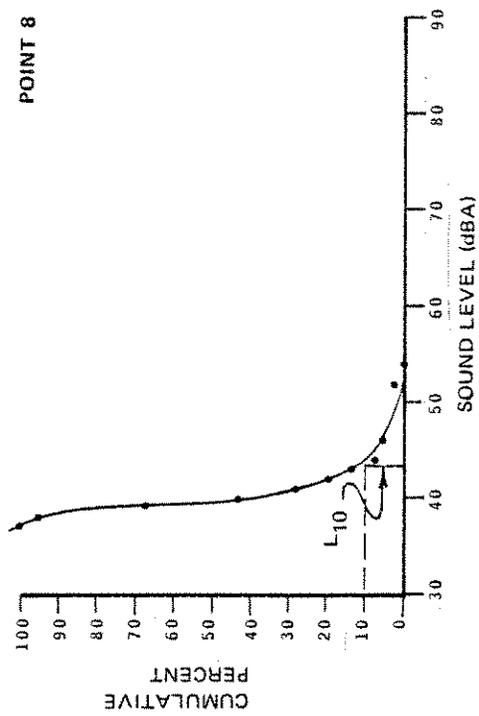
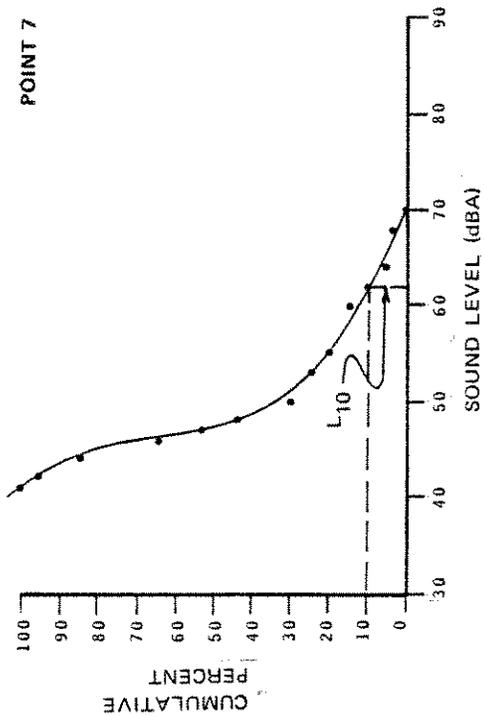
WAHIAWA  
1975



PERCENTAGE OF TIME SOUND LEVELS ARE EXCEEDED (CONT'D)

WAIHAWA

1975



---

APPENDIX D  
LOCAL AIR QUALITY IMPACT ANALYSIS

---



APPENDIX D  
LOCAL AIR QUALITY IMPACT ANALYSIS  
WAHIAWA SECOND ENTRANCE

A. INTRODUCTION

This appendix details the method of analysis, assumptions, and data used in determining the local air quality impacts of alternative corridors under consideration for the Wahiawa Second Entrance. Regional air quality impact, and the short term impacts associated with construction are discussed in Chapter 4 along with a summary of the following analyses. Concentrations of HC and NO<sub>x</sub> were not estimated herein owing to the generally poor understanding of the reaction mechanisms and rates associated with these pollutant species.

B. LOCAL IMPACT

The concentrations of carbon monoxide adjacent to each roadway alternative, and other selected road segments were determined using the method of the California State Division of Highways (Air Quality Manual, Vols. IV and V, April 1972).

1. Roadway Segments

A second entrance to Wahiawa will not only provide a new highway corridor, but will serve to redistribute existing and projected traffic volumes on other roadways serving Wahiawa. The importance of traffic redistribution in relation to local air quality is that changes in traffic volume, route speed, and operating conditions will change the emission patterns of traffic in the community. The effects of changes in emission patterns are accounted for by determining air quality impact near sensitive areas or receptors.

On reviewing the locations of schools and residential areas; and the projected changes in traffic for each alternative, the following roadway segments were chosen for local air quality impact determination in Wahiawa.

Alternative A

- a. Rose Street near Wahiawa Intermediate School
- b. On the proposed roadway at Leilehua High School

Alternative B

- a. California Avenue near Kaala Elementary School
- b. Midway between California Avenue and Wilikina Drive on the proposed roadway bridge.

2. Traffic Volumes

The traffic volumes used in this analysis were obtained from DOT-Highways Division (Alternative A data, December 1974; Alternative B data, May 1975). Table 1 in Chapter 2 summarizes the data from which the following traffic volumes were obtained. Peak hour traffic is equal to 10.5% of ADT.

TABLE D-1  
TRAFFIC DATA USED IN AIR QUALITY ANALYSIS WAHIAWA

<u>Year</u>	AVERAGE DAILY TRAFFIC			
	Alternate A		Alternate B	
	Roadway Segment*		Roadway Segment*	
	a	b	a	b
1977	1,100	2,840	4,940	6,400
1987	1,410	3,640	6,150	7,690
1997	1,730	4,500	8,200	8,990

\* See above for description of roadway segments.

3. Meteorological Conditions

Meteorological data for use in this analysis were obtained from the National Climatic Center (NCC) in Asheville, North Carolina for Wheeler Air Force Base (weather station no. 22508). Statistical analyses of frequency distribution of wind velocities were obtained for Pasquill stability classes A through F for selected

combinations of months and days in the year 1970. Statistical analyses of data for October, November, December, January, February, March, and April were obtained to determine worst case wind conditions associated with the winter period (i.e., lower wind speed, greatest stability, poorest dispersion of air pollutants).

The following statistics were compiled for use in the air quality impact analysis from examination of the meteorological data from Wheeler AFB.

- a. Average frequency of occurrence of Stability Class F: 52%
- b. Average frequency of occurrence of wind speeds from 0-3 mph: 68%
- c. Dominant wind directions for 0-3 mph speed range: W, WNW, NW, NNW
- d. Average wind speed for dominant direction: 2.5 mph (1.12 meters/sec.)
- e. Wind direction and least angle of intersection for designated roadway segments.

<u>Roadway Segment</u>	<u>Wind Direction</u>	<u>∅</u>
1. Alternative A		
a	NW	23°
b	W	23°
2. Alternative B		
a	W	25°
b	NNW	45°

4. Emission Factors

Emission factors used in this analysis were taken from EPA, Compilation of Air Pollutant Emission Factors, AP-42, Supplement No. 2, September 1973. Since publication of the referenced factors (Figure D-1), three additional supplements to AP-42 have been prepared (Supplement No. 5 is currently being printed for publication around August 1975). Table 3.1.1-1 of Supplement No. 5 presents a modified approach to determination of emission factors based on selected scenarios for vehicle characteristics and operation conditions.

Owing to the level of detail presently available on vehicle operating conditions in the Wahiawa area, the degree to which the modified emission factors would reflect approximate conditions for the corridors in this analysis has not been determined. In lieu of the modified method, the emission factors in Supplement No. 2 were applied assuming that the 1975 values remained constant throughout the project life. This approach is felt to be reasonably conservative.

5. Calculations

Estimated 1-hour concentrations of CO were calculated using the data and assumptions described in this appendix. Calculations for each roadway segment were made for: 1) downwind distances of 100, 200, and 300 feet, and 2) vehicle operating speeds of 15, 20, and 25 mph. Figures D-1 and D-2 were used to determine the variables appropriate to the analysis. A sample calculation is shown below to demonstrate the methods by which Table D-2 was derived.

EXAMPLE (for Alternative A, segment a)

A. assumptions:

- o 1997 ADT is 1,730 (from Table D-1)
- o peak 1-hour traffic is 10.5% ADT or 182 vehicles/hr.
- o wind angle is 23° (from subsection 3.e)
- o stability class F
- o wind speed is 1.12 meters/sec.
- o 1975 emission factor for CO is 50 gm/mi.
- o vehicle operating speed is 15 mph
- o downwind distance is 100 feet

B. solution

- o determine speed correction factor from Figure D-1.  
(factor = 1.25)
- o apply factor to emission rate (adjusted emission factor =  
1.25 x 50 = 62.5 gm/mi.)
- o determine ground level concentration ratio CUK/Q from  
Figure D-2 with downwind distance of 100 feet, and  $\theta = 23^\circ$   
(CUK/Q = 1.6)
- o solve the equation for C:

$$C\bar{U}K/Q = 1.6$$

where: K - 4.24, empirical constant

U = wind speed, meters/second

C = concentration, gm/m<sup>3</sup>

Q = 1.73 x 10<sup>-7</sup> x (vehicle/hour) x (emission factor)

$$C = \frac{1.6 \times (1.73 \times 10^{-7}) (182) (62.5)}{4.24 \times 1.12} = 0.66 \text{ mg/m}^3$$

The results of analyses for each roadway segment are summarized in Table D-2.

On comparing the CO concentrations shown in Table D-2 with the State ambient air quality standard for CO of 10 mg/m<sup>3</sup> (1-hour), it can be seen that motor vehicle emissions from either alternative second entrance to Wahiawa will not exceed the State standard under the assumptions noted in this appendix.

Table 3.1.1-1. AVERAGE EMISSION FACTORS FOR HIGHWAY VEHICLES BASED ON NATIONWIDE STATISTICS\*

Year	Carbon monoxide		Hydrocarbons				Nitrogen oxides (NO <sub>x</sub> as NO <sub>2</sub> )		Sulfur oxides (SO <sub>x</sub> )					
	Exhaust		Exhaust		Evaporation and evaporation		Exhaust		Exhaust		Tire wear		Exhaust (SO <sub>2</sub> )	
	g/mi	g/km	g/mi	g/km	g/mi	g/mi	g/mi	g/km	g/mi	g/km	g/mi	g/km	g/mi	g/km
1965	69	55	9.2	5.7	5.8	3.6	4.8	3.0	0.38	0.24	0.20	0.12	0.20	0.12
1970	78	48	7.3	4.8	3.9	2.4	5.3	3.3	0.33	0.24	0.20	0.12	0.20	0.12
1971	74	46	7.2	4.5	3.5	2.2	5.4	3.4	0.36	0.24	0.20	0.12	0.20	0.12
1972	68	42	6.6	4.1	2.9	1.8	5.4	3.4	0.30	0.24	0.20	0.12	0.20	0.12
1973	62	39	6.1	3.8	2.4	1.5	5.4	3.4	0.38	0.23	0.20	0.12	0.20	0.12
1974	56	35	5.5	3.4	2.0	1.2	5.2	3.2	0.38	0.24	0.20	0.12	0.20	0.12
1975	50	31	5.0	3.1	1.5	0.93	5.0	3.1	0.38	0.24	0.20	0.12	0.20	0.12
1976	44	27	4.3	2.7	1.3	0.81	4.8	3.0	0.38	0.24	0.20	0.12	0.20	0.12
1977	37	23	3.7	2.3	1.0	0.62	4.3	2.7	0.38	0.24	0.20	0.12	0.20	0.12
1978	31	19	3.2	2.0	0.83	0.52	3.8	2.4	0.38	0.24	0.20	0.12	0.20	0.12
1979	27	17	2.7	1.7	0.67	0.42	3.4	2.1	0.38	0.24	0.20	0.12	0.20	0.12
1980	23	14	2.4	1.5	0.53	0.33	3.1	1.9	0.38	0.24	0.20	0.12	0.20	0.12
1990	12	7.5	1.3	0.81	0.38	0.24	1.8	1.1	0.38	0.24	0.20	0.12	0.20	0.12

\*Based on sections 3.1.2, 3.1.4, and 3.1.5 and on References 2 through 4.

NOTE: This table reflects interim standards promulgated by the EPA Administrator on April 11, 1973, and in July 1973.

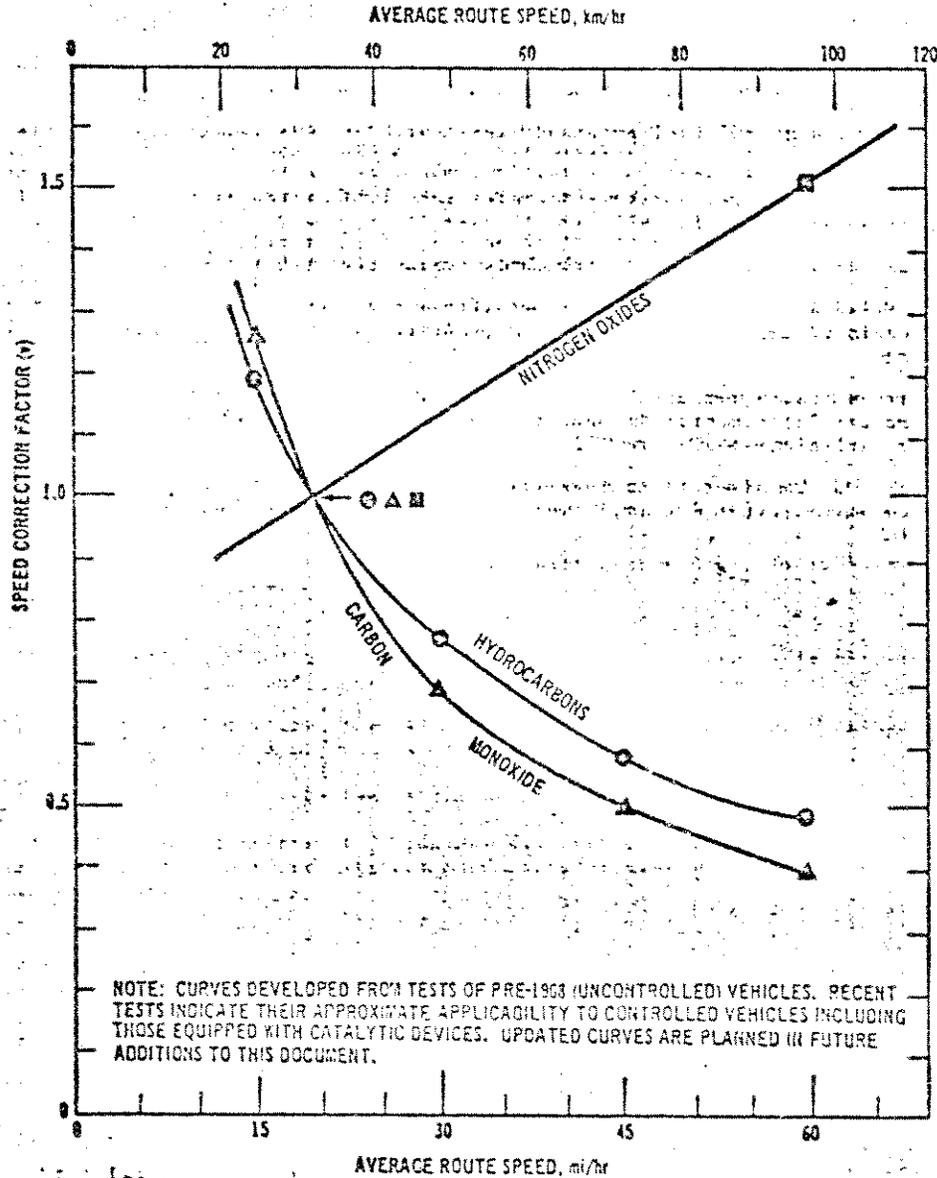


Figure 3.1.1-1. Average speed correction factors for all model years. 5-7

Emission Factors for Mobile Sources

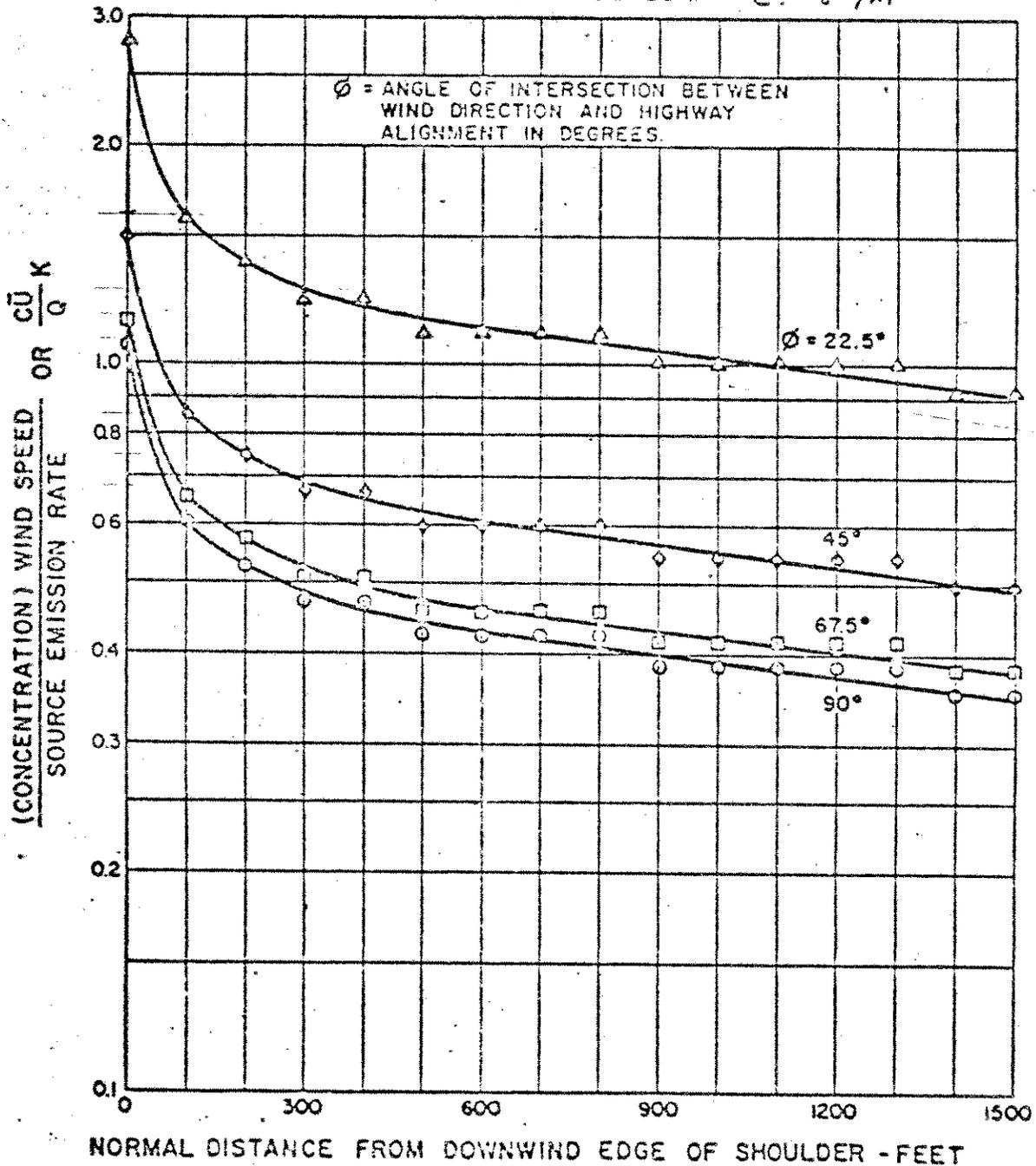
source: EPA, "Compilation of Air Pollutant Emission Factors," AP-42, (revised April, 1973), Supplement No. 2, September 1973.

GROUND LEVEL CONCENTRATION RATIO  $\frac{C\bar{U}}{Q}K$   
 DOWNWIND FROM A HIGHWAY LINE SOURCE

$Q = 1.73 \times 10^{-7} \times (\text{vehicles/hour}) \times (\text{emission factor})$        $Q: \text{gm/SEC-m}$

AT-GRADE SECTION  
 STABILITY CLASS F

$\bar{U}: \text{m/SEC}$   
 $C: \text{gm/m}^3$



Ground Level Concentrations Downwind of Line Source

source: California Division of Highways, Vol. V, Figure 9

TABLE D-2  
ESTIMATED 1-HOUR CARBON MONOXIDE CONCENTRATIONS  
FOR 1997 ADT's WAHIAWA SECOND ENTRANCE

Roadway Segment	Downwind Distance (feet)	$\frac{C\bar{U}K}{Q}$	CO concentration (mg/m <sup>3</sup> ) for indicated operating speed		
			15 mph	20 mph	25mph
Alternative A					
a	100	1.6	0.66	0.53	0.42
	200	1.4	0.58	0.46	0.37
	300	1.3	0.54	0.43	0.35
b	100	1.55	1.6	1.3	1.0
	200	1.35	1.4	1.1	0.90
	300	1.25	1.3	1.0	0.83
Alternative B					
a	100	1.5	2.9	2.3	1.9
	200	1.3	2.5	2.0	1.6
	300	1.2	2.3	1.8	1.5
b	100	0.85	1.8	1.4	1.2
	200	0.75	1.6	1.3	1.0
	300	0.68	1.4	1.1	0.90

Interim Guidelines for the Review of the Impact of Indirect Sources on Ambient Air Quality (EPA, 1974) presents an alternative methodology for estimating the concentrations of pollutant species from roadways and other indirect sources. The alternative methodology was used as a check of the results presented above. It was found that the EPA model showed good correlation with the results above, however owing to the relatively small concentrations of CO associated with the Second Entrance Roadway, the California model was preferred in this analysis.

---

APPENDIX E  
CLEARANCES

---



DIRECTOR'S OFFICE RECEIVED

JUL 7 1 25 PM '75 JUL 8 9 59 AM 1975

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION  
TRAFFIC ENGINEERING DIVISION

TO: Department of Transportation  
FROM: Department of Land and Natural Resources

CLEARANCE FORM

COORDINATION OF HIGHWAY PROJECTS  
WITH  
LAND AND NATURAL RESOURCES INTERESTS

This is to certify that Project No. 806A - 01 - 73 (Alternate A)

Second Entrance Road to Wahiawa

has been reviewed by this Department and insofar as economically practicable,  
has been coordinated in terms of land and natural resources interests in  
accordance with Section 109, Title 23, United States Code, with notes,  
exception and reservations appended hereto.

*Eugene A. Hamann for*

Chairman and Member  
Board of Land and Natural Resources  
Department of Land and Natural Resources

*7/1/75*

Date

Project No. 806A-01-73, Second Entrance Road to Wahiawa.

Notes

Alternate B crosses the middle of the most heavily used section of a public fishing area. The roadway structure would be a large, ugly intrusion. Road noise would disturb the quiet of this fishing spot. Alternate B would seriously degrade this fishing area. Accordingly, Alternate A is preferred.

Reservations

Alternate A comes close to the proposed Wahiawa Freshwater Park and will have a visual impact on the park. Portions of the roadway visible from the park must be carefully landscaped. The State Parks Division can assist you in this respect.

Trees located near the proposed R/W should be carefully plotted and the alignment and design developed to minimize clearing of mature trees. Adequate drainage should also be incorporated into the final design.

During construction, erosion and sedimentation controls will be needed to avoid contaminating Wahiawa Reservoir.



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

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

May 2, 1975

Mr. Robert Itagaki  
VTN Engineers Architects Planners  
Hawaii Building, Suite 804  
745 Fort Street  
Honolulu, Hawaii 96813

Dear Mr. Itagaki:

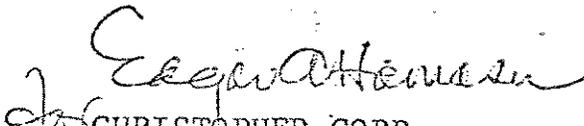
SUBJECT: Second Entrance to Wahiawa Town  
Project No. 806 A-01-73

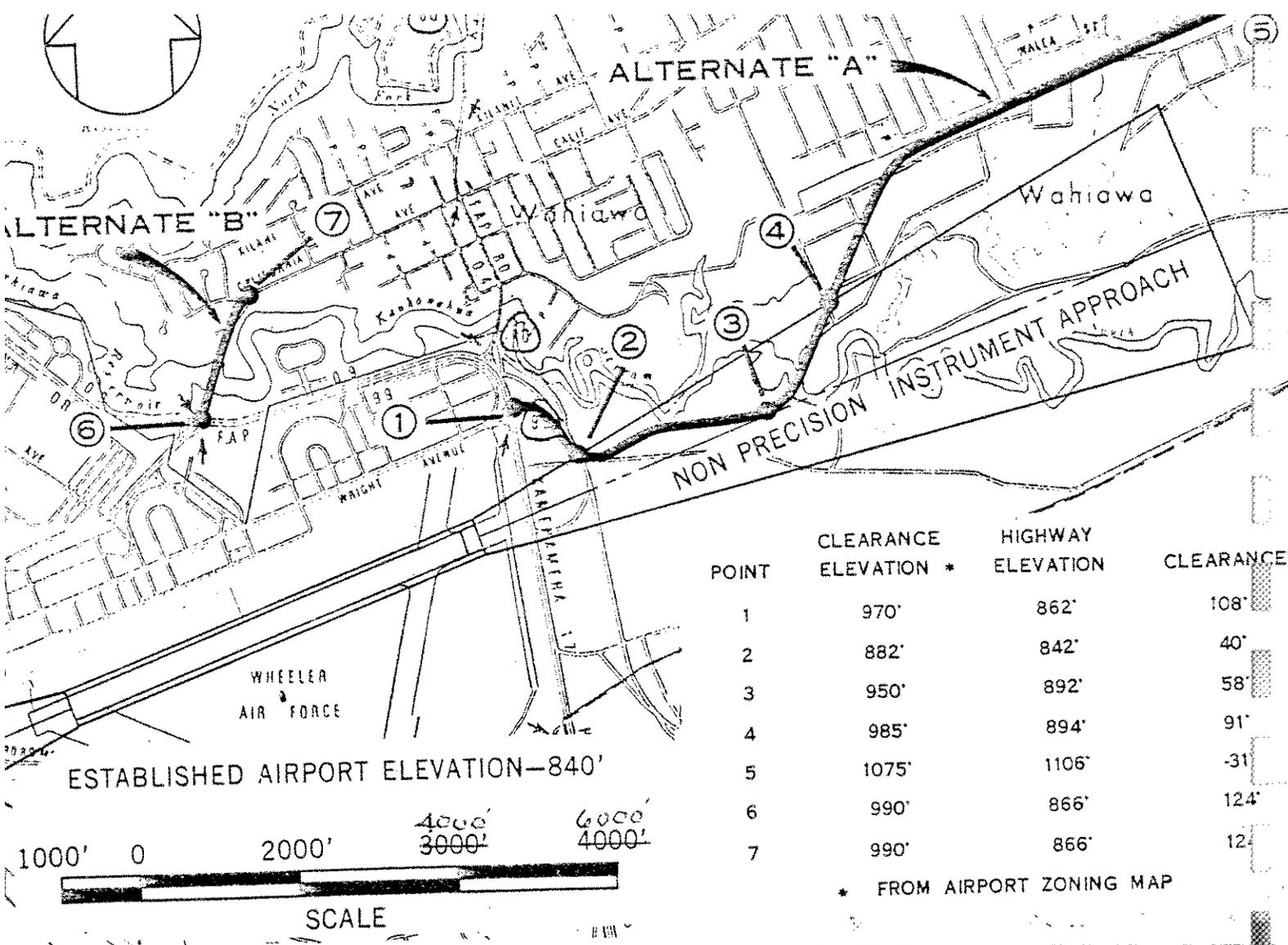
A check of our files has indicated that there are no historic or archaeological sites eligible for inclusion on the Hawaii or National Registers of Historic Places that are likely to be adversely affected by this project.

In the event your plans are altered so that existing structures are to be altered or moved, please contact my staff at 548-6408 for a determination as to their historic value.

Your interest in historic preservation is greatly appreciated.

Very truly yours,

  
CHRISTOPHER COBB  
Historic Preservation Officer  
State of Hawaii



SKETCH MAP SUPPORTING  
FINDING OF PUBLIC INTEREST AT

WHEELER AIR FORCE BASE  
WAHIAWA, OAHU

In compliance with Section 318, Title 23 U. S. C., we concur that the location of this airport and the consequent construction of a second entrance road and bridge to Wahiawa Town are in the public interest.

*Morris R. Smitel*  
Airport Official  
Wheeler AFB

*A. Harano*  
Department of Transportation  
Highways Division

16 Sep 75  
Date

JUL 10 1975  
Date

---

APPENDIX F  
COMMENTS AND RESPONSES  
TO EIS PREPARATION NOTICE

---



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 15th AIR BASE WING (PACAF)  
APO SAN FRANCISCO 96553



1448

8 SEP 1975

SEP 5 2 30

TRAVEL ATTACH

REPLY TO: DEEE (Mr. Tamashiro, 4491662)

SUBJECT: Request for Comments, Second Entrance Road to Wahiawa

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

1. Reference your HWY-PA 2.23706 letter, dated 8 August 1975, same subject.
2. We have no comment to render relative to the environmental impact statement for the subject project.

BEN D. KOSA  
Asst Dep Comdr for Civil Engrg

Cy to: 15ABS/DE



DEPARTMENT OF DEFENSE

SEP 8 1 20 PM 1975

RECEIVED

2499



DEPARTMENT OF THE ARMY  
U. S. ARMY ENGINEER DISTRICT, HONOLULU  
BLDG. 230, FT. SHAFTER  
APO SAN FRANCISCO 96358

SEP 12 1 10 PM 1975

9 September 1975

PODED-P

SEP 11 10 10 AM '75

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

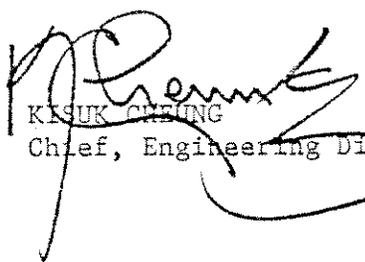
SEP 11 10 10 AM '75  
RECEIVED  
ENGINEERING DIVISION

Dear Mr. Wright:

Your request for comments on the E.I.S. Preparation Notice for the Second Entrance Road to Wahiawa, Project No. 806A-01-73 was received on 12 August 1975. The preparation notice appears to outline the major impacts to be addressed in detail in the environmental statement. However, the alternative corridors appear to differ significantly in their impacts. A thorough analysis of the effectiveness of each in attaining the project objectives as well as a comparison of the benefits and disadvantages of each plan should be documented.

Thank you for the opportunity to participate in the consultation process. We would appreciate a copy of the draft environmental impact statement when it becomes available for review.

Sincerely yours,

  
KESUK CHEUNG  
Chief, Engineering Division



GEORGE R. ARIYOSHI  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
859 PUNCHBOWL STREET  
HONOLULU HAWAII 96813

E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS  
WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

November 4, 1975

IN REPLY REFER TO:

HWY-PA  
2.25255

Mr. Kisuk Cheung  
Chief, Engineering Division  
Department of the Army  
U.S. Army Engineer District,  
Honolulu  
Bldg. 230, Fort Shafter  
APO San Francisco 96558

Dear Mr. Cheung:

Subject: Environmental Impact Statement  
Preparation Notice for the  
Second Entrance to Wahiawa  
Project No. 806A-01-73

Thank you for the comments contained in your September 9, 1975 letter regarding the above referenced project. All agencies with responsible jurisdiction will receive in the near future a copy of the Environmental Impact Statement.

Your comments concerning attainment of the objectives and the benefits and disadvantages of the proposed project will be thoroughly discussed in the EIS.

The environmental effects on topography, geology and soils, surface and ground water, air quality, noise, archaeological and historical, wildlife, social, land use, circulation, and costs-benefit will be examined in depth for each alternative. These effects will be quantified where feasible throughout the EIS.

Mr. Kisuk Cheung  
Page 2

HWY-PA 2.25255

If you have any further comments regarding the proposed project, please do not hesitate to contact us.

Sincerely,



E. ALVEY WRIGHT  
Director

2460



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

SEP 1 1975

AFZV-FE-RO

RECEIVED  
SEP 15 1975  
1 15 PM '75

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

Gentlemen:

This is in response to your letter HWY-PA 2.23706 of August 8, 1975, with the subject: Request for Comments, Second Entrance Road to Wahiawa, Environmental Impact Analysis.

The EIS preparation notice enclosed with your letter has been reviewed by my staff and pertinent comments are provided on separate sheets attached to this letter. Since one of the proposed routes involves U.S. Army lands at East Range, it is requested that my office be consulted and kept apprised of developments during the preparation of the EIS.

I am also taking this opportunity to reiterate and expand on the position of U.S. Army Support Command, Hawaii, given in earlier correspondence on proposals for a second entrance road to the community of Wahiawa. The command is strongly opposed to any entrance routes that require the use of East Range lands. This property is a vital part of the 25th Infantry Division's training needs and public roadways into this area will reduce the usefulness and effectiveness of this area for combat readiness training. The use and value of this area as a training site have been on the increase over the past years and will continue to increase in the future because of military budget limitations and energy conservation requirements. While training areas at Kahuku on this Island and at Pohakuloa on the Big Island are also essential to the Army's needs and are still used, training emphasis is being shifted to East Range because of its nearness to Schofield Barracks, the home of the 25th Infantry Division, in line with budget

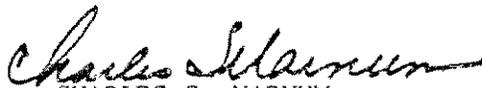


AFZV-FE-RO  
Department of Transportation

and energy constraints. It is anticipated that public roadways through the East Range training area will have a significant and long range effect on Army troop training capabilities in the State of Hawaii.

Thank you for providing the opportunity to comment on the EIS preparation notice. Queries on the inclosed environmental comments may be directed to Messrs. R. Okamura or G. Ishikawa of my staff, telephone No. 438-2827.

Sincerely yours,



CHARLES S. VARNUM  
Colonel, CE  
Director of Facilities Engineering

1 Incl  
As stated

U.S. Army Support Command, Hawaii, Comments on Environmental Impact Statement (EIS) Preparation Notice for the Proposed Second Entrance Road to Wahiawa, Project No. 806A-01-73.

1. In the evaluation process the EIS Preparation Notice was considered as a prelude to the preparation of the EIS document and was reviewed as such.
2. Comments which follow are general in nature and recommended areas of concern that should be considered in the preparation of the EIS. Specific comments will be reserved for the EIS document.
  - a. The EIS should contain data such as anticipated traffic, construction costs and schedules, and benefit cost analysis for the two routes "A" and "B".
  - b. Technical studies and surveys should support the EIS; studies such as impacts on air, noise, water and safety; surveys on biota and unique, historical or cultural sites.
  - c. Social, cultural and economic factors (present as well as future implications) should be considered.
  - d. Present and future land uses, zoning and conflicts of interest must be considered.
  - e. Historic, present and future population of Wahiawa should be discussed to include such factors as growth, income level, etc.
  - f. The major impact on Army training for route "A" must be thoroughly covered in the document, as well as mitigating measures.
  - g. The major impact of acquiring the land for route "A" must be discussed, factors such as need to prepare a separate EIA and/or EIS by the Army to transfer the land.
  - h. The need for a second route must be supported in the document and the two alternatives thoroughly discussed as to their appropriateness.
  - i. Other alternatives such as mass transit, car pooling, etc., should also be considered in the EIS.
  - j. It appears that easy access on and off H-2 is not possible from the map attached to the EIS preparation notice. Technical details on the two routes must be covered in the EIS document and should show connection to existing roadways, and access on and off such roads.

*and 1*

GEORGE R. ARIYOSHI  
GOVERNOR



E. ALVEY WRIGHT  
DIRECTOR  
DEPUTY DIRECTORS  
DOUGLAS S. SAKAMOTO  
WALLACE AOKI

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

November 7, 1975

IN REPLY REFER TO:

HWY-PA  
2.25251

Colonel Charles S. Varnum, C.E.  
Director of Facilities Engineering  
Department of the Army  
HQ U.S. Army Support Command, Hawaii  
APO San Francisco, California 96558

Dear Sir:

Subject: Environmental Impact Statement  
Preparation Notice for the  
Second Entrance Road to Wahiawa  
Project No. 806A-01-73

Thank you for the comments contained in your September 4, 1975 letter and attachment on the subject project. The concerns expressed in your letter will be presented and discussed in the EIS as follows:

1. The fact that the command is strongly opposed to Alternative "A" will be cited, and the significant and long-term impacts because of training conflicts with military budget limitations and energy conservation requirements will be presented.
2. The time schedule for construction and completion of the second entrance project has not been finalized at this stage of project development. Summaries of traffic costs and benefits will be included in the EIS.

3. The EIS will utilize existing biological and air quality data. Field surveys have been conducted to determine existing ambient noise levels. The State of Hawaii, Historic Preservation Officer has been consulted for existing or eligible historic and/or archaeological sites suitable for inclusion into either the Hawaii or National Register of Historic Places.
4. Existing data for social, cultural and economic conditions will be presented and potential beneficial, adverse, short-term and long-term impacts will be discussed and quantified where feasible.
5. Existing land use and zoning will be illustrated and discussed and potential impacts from the proposed alternatives will be discussed at some length.
6. The potential growth inducing impacts of the alternatives will be cited.
7. The costs of acquiring right-of-way under Alternative A versus donation will be discussed. The environmental documents that may be required as a result of land transfers will not be discussed or quantified because they are legal/administrative effects, and not environmental impacts of the proposed project.
8. Both the need and appropriation of the project will be discussed in the project description of the EIS. The majority of residents in Wahiawa are employed outside of the town, and a great percentage commute to employment centers (Schofield Barracks, Wheeler AFB) via Wilson Bridge. Replacement of the bridge and the widening of Kam Highway will greatly improve the level of service for motorists, and will accommodate much greater traffic volumes. During peak traffic hours, however, a reduced level of

Colonel Charles S. Varnum, C.E.  
Page 3

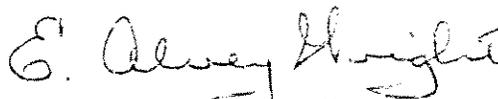
HWY-PA 2.25251

service is still anticipated to occur due to the increase in future traffic, and the unavailability of an alternative access highway. More importantly, a second entrance into Wahiaua will permit greater flexibility of travel for emergency vehicles, and will serve to redistribute traffic within the community. For example, an alternative highway access will reduce the average daily traffic on Kam Highway contributing to a higher level of service at the intersection of Kam Highway and California Avenue as well as at the new Wilson Bridge crossing.

9. In light of the need to provide another access for emergency vehicles and a redistribution of community traffic, the alternatives of mass transit and car pooling, while they may ease overall traffic congestion, do not meet the objectives of the project and are not necessary for discussion in the EIS. This discussion would not provide decision-makers with useful information.
10. Access to Interstate Route H-2 and other existing roadways will be discussed in the EIS.

If you have any further comments regarding the proposed project, prior to receiving a copy of the EIS, please do not hesitate to contact us.

Sincerely,



E. ALVEY WRIGHT  
Director



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE'S

REGIONAL OFFICE

50 FULTON STREET  
SAN FRANCISCO, CALIFORNIA 94102

Office of Environmental Affairs

OFFICE OF  
THE REGIONAL DIRECTOR

1409

DIRECTOR'S OFFICE

SEP 2 2 07 PM '75

August 28, 1975

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

Dear Mr. Wright:

We have reviewed the Environmental Impact Analysis for the proposed Second Entrance Road to Wahiawa, Project No. 806A-01-73.

The material submitted is inadequate for us to make a detailed analysis of the potential impacts this action may have which would be of direct concern to the Department of Health, Education and Welfare. Should a draft Environmental Impact Statement be developed to comply with the National Environmental Policy Act, we will be pleased to provide detailed comments and suggestions where warranted.

Sincerely,

James D. Knochenhauer  
Regional Environmental Officer

cc: Dr. Richard E. Marland  
Director, OEQC

2497



DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT  
FEDERAL HOUSING ADMINISTRATION  
HONOLULU INSURING OFFICE  
P.O. BOX 3377  
HONOLULU, HAWAII 96801

REGION IX  
450 Golden Gate Avenue  
P.O. Box 36003  
San Francisco, California 94102

SEP 12 1 11 PM 1975  
September 9, 1975

IN REPLY REFER TO:

DEPT. OF HOUSING AND URBAN DEVELOPMENT  
HONOLULU INSURING OFFICE  
P.O. BOX 3377  
HONOLULU, HAWAII 96801

9.7U (Johnson/  
546-5554

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

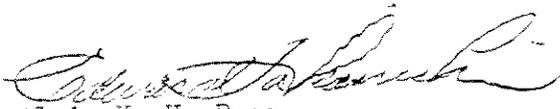
Dear Mr. Wright:

The proposed action, Subject: Request for Comments Second Entrance Road to Wahiawa Environmental Impact Analysis, to provide a second access to Wahiawa described in your letter dated August 8, 1975 has been reviewed by this agency.

Neither alternate conflicts with existing or proposed HUD housing projects at this time.

We look forward to reviewing your draft Environmental Impact Statement at a subsequent date when we may offer more definite comments.

Sincerely,

  
Alvin K. H. Pang  
Director

RECEIVED  
SEP 11 1975  
HONOLULU INSURING OFFICE

1429



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF OUTDOOR RECREATION

PACIFIC SOUTHWEST REGIONAL OFFICE  
BOX 35062

450 GOLDEN GATE AVENUE  
SAN FRANCISCO, CALIFORNIA 94102

September 2, 1975

RECEIVED  
SEP 5 8 11 AM '75  
SAN FRANCISCO  
79613

RECORDED

IN REPLY REFER TO:  
4230

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

Dear Mr. Wright:

This responds to your letter of August 8, 1975, regarding your proposed Second Entrance Road to Wahiawa project and request for comments on the environmental effects of this proposed action.

Our major concern is whether or not the proposed project will impact the Wahiawa Freshwater State Park which has been developed by a grant from the Land and Water Conservation Fund (L&WCF). If the park is impacted, provisions of Section 6(f) of the L&WCF Act may be applicable. Taking of land from this park would require the approval of the Secretary of the Interior and replacement land of equivalent value and utility. A Section 4(f) assessment also would be necessary.

If the Wahiawa Freshwater Park would be affected by this project, we recommend you notify us of this fact prior to preparation of the environmental impact statement so we can determine the extent of involvement with the L&WCF project and the applicability of Section 6(f). You should consult also with Mr. Hideto Kono, Director, Department of Planning and Economic Development, who is the State Liaison Officer in Hawaii for L&WCF matters.

Sincerely yours,

for Frank E. Sylvester  
Regional Director





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

IN REPLY REFER TO:

HWY-PA  
2.25323

November 7, 1975

Mr. Frank E. Sylvester  
Regional Director  
U.S. Department of the Interior  
Bureau of Outdoor Recreation  
Pacific Southwest Regional Office  
Box 36062  
450 Golden Gate Avenue  
San Francisco, California 94102

Dear Mr. Sylvester:

Subject: Environmental Impact Statement  
Preparation Notice for the  
Second Entrance Road to Wahiawa  
Project No. 806A-01-73

Thank you for the comments contained in your September 2, 1975 letter regarding the above referenced project. All agencies with responsible jurisdiction will receive, in the near future, a copy of the Environmental Impact Statement.

Your comments concerning potential impacts to the Wahiawa Freshwater State Park will be discussed in the EIS.

Generally, Alternative A will not require the acquisition of any land from the Wahiawa Freshwater Park and because of vegetation and elevation differences, will have no significant noise impacts thereon. The projected 1987 noise level will be well below 70 dBA. However, there will be a visual impact on the park that can be mitigated by careful landscaping.

If you have any further comments regarding the proposed project, please do not hesitate to contact us.

Sincerely,

*E. Alvey Wright*  
E. ALVEY WRIGHT  
Director

2461



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Division of Ecological Services  
821 Mililani Street  
Honolulu, Hawaii 96813

Reference: ES

September 5, 1975

RECEIVED  
SEP 9 1 19 PM 1975  
REGISTRATION

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

Dear Sir:

This replies to your letter of August 8, 1975, requesting this Service's comments on the EIS Preparation Notice concerning the Second Entrance Road to Wahiawa.

We have reviewed the proposed notice information and provide the following comments for your consideration.

Two alternative route plans, A and B, have been suggested for determination of a second entrance road to the town of Wahiawa. Both alternatives would span Kaukanohua Stream. Our major concern regarding either alternative would be the effects of the construction on the reservoir fishery environment. From this standpoint, it is apparent that Alternative A would be the least destructive to the aquatic system in that less reservoir habitat would be subjected to the construction effects and post operation of the highway. For this reason, we would suggest Alternative A be considered.

Alternative B would transect a wide area of the reservoir at a popular fishing location. Greater destruction to the reservoir environment, including esthetic values, would occur if this route was chosen.

In either alternative, it is imperative that adequate erosion control measures be taken to prevent any additional silt problem and/or disturbance from occurring to the reservoir system. Denuded vegetative area should be replanted to maintain the existing wild-life habitat components, i.e., food, cover and nesting sites.



2.

We appreciate this opportunity to comment.

Sincerely yours,

*Maurice H. Taylor*

Maurice H. Taylor  
Area Supervisor

cc: NMFS, Honolulu (J. Naughton)  
HDF&G  
RD, ES, Portland

GEORGE R. ARIYOSHI  
GOVERNOR



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

E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS

WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

November 11, 1975

IN REPLY REFER TO:

HWY-PA  
2.25322

Mr. Maurice H. Taylor  
Area Supervisor  
U.S. Department of the Interior  
Fish and Wildlife Service  
Division of Ecological Services  
821 Mililani Street  
Honolulu, Hawaii 96813

Dear Mr. Taylor:

Subject: Environmental Impact Statement  
Preparation Notice for the  
Second Entrance Road to Wahiawa  
Project No. 806A-01-73

Thank you for the comments contained in your September 5, 1975 letter regarding the subject project.

Your comment concerning each alternate's impact upon the reservoir's habitat will be discussed in the EIS.

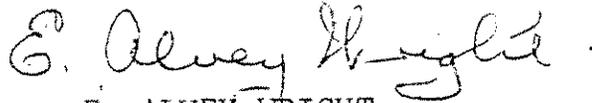
The proposed project will be constructed and designed in accordance with the State of Hawaii, Standard Specifications for Road and Bridge Construction (Section 107.17 - "Protection of Rivers, Streams, Impoundments, Forests, and Archaeological and Paleontological Findings," Section 639 - "Temporary Project Water Pollution Control (Soil Erosion)," and Section 641 - "Slope Control Planting"). These specifications insure that adequate mitigation measures will be taken to minimize the impact to the reservoir.

Mr. Maurice H. Taylor  
Page 2

HWY-PA 2.25322

If you have any further comments regarding the proposed project, please do not hesitate to contact us.

Sincerely,



E. ALVEY WRIGHT  
Director



United States Department of the Interior

GEOLOGICAL SURVEY  
Water Resources Division  
5th Floor, 1833 Kalakaua Ave.  
Honolulu, Hawaii 96815-1576

August 29, 1975

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

Gentlemen:

Subject: Comments on Second Entrance Road to Wahiawa  
Environmental Impact Analysis

We have reviewed subject EIS preparation notice and conclude that effects of either alternate route upon the water resources of the area would be limited to possible increase in sediment content of the stream waters. In this respect, alternate "A" because of its longer length, may produce more sediment runoff during construction and more traffic-generated debris later.

Sincerely,

*F. T. Hidaka*  
F. T. Hidaka  
District Chief

cc: Regional Hydrologist, WRD, WR  
Attn: L. E. Newcomb  
G. H. Davis (Attn: G.H. Chase)



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

E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS  
WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

November 11, 1975

IN REPLY REFER TO:  
HWY-PA  
2.25325

Mr. F. T. Hidaka, District Chief  
U.S. Department of the Interior  
Geological Survey  
Water Resources Division  
5th Floor, 1833 Kalakaua Avenue  
Honolulu, Hawaii 96815

Dear Mr. Hidaka:

Subject: Environmental Impact Statement  
Preparation Notice for the  
Second Entrance Road to Wahiawa  
Project No. 806A-01-73

Thank you for the comments contained in your August 29, 1975 letter regarding the subject project. Your comment concerning sediment content will be discussed in the EIS.

To minimize the potential impacts to water resources, the proposed project will be constructed and designed in accordance with the State of Hawaii, Standard Specifications for Road and Bridge Construction (Section 107.17 - "Protection of Rivers, Streams, Impoundments, Forests, and Archaeological and Paleontological Findings," Section 639 - "Temporary Project Water Pollution Control (Soil Erosion)," and Section 641 - "Slope Control Planting").

If you have any further comments regarding the proposed project, please do not hesitate to contact us.

Sincerely,

*E. Alvey Wright*  
E. ALVEY WRIGHT  
Director

2464



# United States Department of the Interior

NATIONAL PARK SERVICE RECEIVED

WESTERN REGION

450 GOLDEN GATE AVENUE, BOX 36063  
SAN FRANCISCO, CALIFORNIA 94102-PM 1975

IN REPLY REFER TO:

L7619  
(WR)PSE

September 4, 1975

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

RECEIVED  
SEP 11 1975  
NATIONAL PARK SERVICE

Dear Mr. Wright:

We have reviewed the Environmental Impact Statement Preparation Notice for the proposed Second Entrance Road to Wahiawa, Project No. 806A-01-73. The following comments are provided on a technical assistance basis only as they do not represent formal review comments from the Department of the Interior.

There has been no consideration of cultural resources in the notice. The draft statement should indicate that the National Register of Historic Places has been consulted and that no National Register properties are to be affected by the project. If properties are affected by the project the statement should discuss the nature of the effects and indicate measures taken to achieve compliance with Section 106 of the National Historic Preservation Act of 1966 (80 Stat. 95) and Executive Order 11593 in accordance with Title 36, CFR part 800. The statement should also indicate consultation with the State Historic Preservation Officer and include a copy of his comments regarding the effect of the proposed project upon properties either listed on or in the process of nomination to, the National Register of Historic Places.

A professional archeologist should survey the rights-of-way for both alternatives to locate and evaluate any existing cultural resources. Should cultural resources be identified they should be evaluated for their National Register potential and compliance with the procedures set forth in Title 36, CFR 800 should be documented.

Sincerely yours,

John S. Adams  
Acting Associate Regional Director,  
Professional Services





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

E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS  
WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

IN REPLY REFER TO

HWY-PA  
2.25253

November 4, 1975

Mr. John S. Adams  
Acting Associate Regional Director,  
Professional Services  
U. S. Department of the Interior  
National Park Service  
Western Region  
450 Golden Gate Avenue  
Box 36063  
San Francisco, California 94102

Dear Mr. Adams:

Subject: Environmental Impact Statement  
Preparation Notice for the  
Second Entrance Road to Wahiawa  
Project No. 806A-01-73

Thank you for the comments contained in your September 4, 1975 letter regarding the above referenced project. All agencies with responsible jurisdiction will receive in the near future a copy of the Environmental Impact Statement.

The National Register of Historic Places has been consulted and no National Register properties will be affected by the proposed project. A copy of a letter to that effect from the Hawaii Historic Preservation Officer will be included in the EIS together with a discussion of mitigation measures should cultural resources be unearthed during the construction phase.

If you have any further comments regarding the proposed project, please do not hesitate to contact us.

Sincerely,

A handwritten signature in cursive script that reads "E. Alvey Wright".

E. ALVEY WRIGHT  
Director

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

MAIL ROOM OFFICE

-ASIA RECEIVED

PACIFIC REGION  
P. O. BOX 4009  
HONOLULU, HAWAII 96813



AUG 26 1 35 PM '75

SEP 27 8 22 AM 1975

SEP 1 10 11 AM 1975

AUG 25 1975

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

Dear Admiral Wright:

We have reviewed your Environmental Impact Statement (E.I.S.) Preparation Notice for the proposed Second Entrance Road to Wahiawa, Project No. 806A-01-73, transmitted by your letter (HWY-PA 2.23706) dated August 8, 1975.

The project does not appear to have any adverse effect on the aeronautical facilities or activities. Thank you for the opportunity to comment on the I.I.S. Preparation Notice.

Sincerely,

EDWIN T. KANEKO  
Chief, Airway Facilities Division, APC-400

GEORGE R. ARIYOSHI  
GOVERNOR



1407  
JOHN FARIAS, JR.  
CHAIRMAN, BOARD OF AGRICULTURE  
YUKIO KITAGAWA  
DEPUTY TO THE CHAIRMAN

RECEIVED

SEP 3 1 38 PM 1975  
STATE OF HAWAII  
DEPARTMENT OF AGRICULTURE  
1428 SO. KING STREET  
HONOLULU, HAWAII 96814

August 27, 1975

MEMORANDUM

To: Mr. E. Alvey Wright, Director  
Department of Transportation

Subject: Second Entrance Road to Wahiawa  
Environmental Impact Analysis

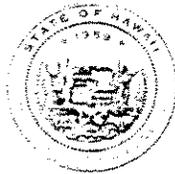
The Department of Agriculture has reviewed the proposed alternative entrance roads into Wahiawa. The primary agricultural concern is movement of pineapple hauling trucks and related services in this area. Reducing congestion will also tend to reduce the buildup of engine emissions, thereby minimizing potential future problems.

Consistent with the objective of minimizing congestion, the Department recommends Alternative A over Alternative B.

*John Farias, Jr.*  
John Farias, Jr.  
Chairman, Board of Agriculture

JF:d:h

GEORGE R. ARIYOSHI  
GOVERNOR



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

E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS  
WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

November 11, 1975

IN REPLY REFER TO:

HWY-PA  
2.25328

MEMORANDUM

TO: THE HONORABLE JOHN FARIAS, JR.  
CHAIRMAN, BOARD OF AGRICULTURE

FROM: E. ALVEY WRIGHT, DIRECTOR  
DEPARTMENT OF TRANSPORTATION

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE  
FOR THE SECOND ENTRANCE ROAD TO WAHLAWA  
PROJECT NO. 806A-01-73

Thank you for the comments contained in your August 27, 1975 letter on the subject project.

Your comment indicating that reduced congestion would have a beneficial impact on the environment will be noted in the EIS.

If you have any further comments regarding the proposed project, please do not hesitate to contact us.

*E. Alvey Wright*  
E. ALVEY WRIGHT

GEORGE R. ARIYOSHI  
GOVERNOR

2410  
TEICHIRO HIRATA  
SUPERINTENDENT



SEP 10 8 34 AM 1975

STATE OF HAWAII  
DEPARTMENT OF EDUCATION  
P. O. BOX 2360  
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

September 2, 1975

MEMO TO: Honorable E. Alvey Wright, Director  
Dept. of Transportation

F R O M: Teichiro Hirata, Superintendent  
Department of Education

SUBJECT: Request for Comments  
Second Entrance Road to Wahiawa  
Environmental Impact Analysis

1975 SEP 10 10 10 AM

SEP 9 12 39 PM 1975

DIRECTOR'S OFFICE

We have no special comments to make relative to the subject matter other than to forward to you a concern expressed by Central Oahu School District Office regarding provisions for bus loading and unloading area for Wahiawa Intermediate School and Leilehua High School (Alternate "A"), pedestrian safety, and where applicable, noise pollution study and controls.

*Teichiro Hirata*



DEPUTY DIRECTORS

WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

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

IN REPLY REFER TO

HWY-PA  
2.25252

November 4, 1975

MEMORANDUM

TO: MR. ALBERT H. MIYASATO, ACTING SUPERINTENDENT  
DEPARTMENT OF EDUCATION

FROM: E. ALVEY WRIGHT, DIRECTOR  
DEPARTMENT OF TRANSPORTATION

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE  
FOR THE SECOND ENTRANCE ROAD TO WAHIAWA  
PROJECT NO. 806A-01-73

Thank you for the comments contained in your September 2, 1975 letter, regarding the above referenced project. All agencies with responsible jurisdiction will receive, in the near future, a copy of the Environmental Impact Statement.

Your comments concerning bus loading and unloading, pedestrian safety and noise pollution and control will be discussed in the EIS.

Generally the noise analysis will include (1) establishment of existing ambient noise levels for the eight most sensitive areas along both routes, (2) projection of noise levels to 1997 and, (3) comparison of noise levels to Federal Highway Administration Standards. Mitigation measures to reduce adverse impacts will be discussed as required.

The potential impacts to pedestrian safety will be discussed and mitigation measures, such as curbs, sidewalks, school speeding zones, and cross-walks will be considered. As a bus access mitigation measure, the EIS will consider access roads under Alternative A to accommodate school bus turn-off lanes for loading and unloading.

Mr. Albert H. Miyasato  
Page 2

HWY-PA 2.25252

If you have any further comments regarding the proposed project please do not hesitate to contact us.

  
E. ALVEY WRIGHT

1430

GEORGE R. ARIYOSHI  
GOVERNOR OF HAWAII



RECEIVED  
SEP 5 8 44 AM

URGENT

SEP 4 2 01 PM '75

DEPT

TRANSPORTATION

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

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

August 27, 1975

In reply, please refer to:  
File: EPHS - SS

The Honorable E. Alvey Wright, Director  
Department of Transportation  
869 Punchbowl St.  
Honolulu, Hawaii 96813

Dear Mr. Wright:

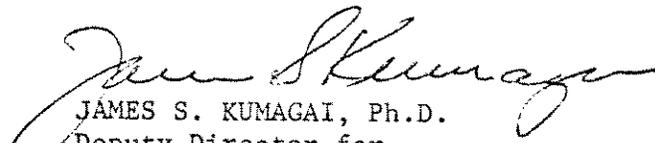
Subject: Request for Comments on Proposed Environmental Impact Statement  
(EIS) for Second Entrance to Wahiawa

Thank you for allowing us to review and comment on the subject  
EIS.

Our staff have discussed this project with representatives of the  
Department of Transportation and their consultant for the EIS. If the  
statement will contain information on expected air pollution from construction  
and ultimate usage as discussed, we do not anticipate any problems with the EIS  
in regard to air pollution.

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,

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

GEORGE R. ARIYOSHI  
GOVERNOR



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

E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS

WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

IN REPLY REFER TO:

HWY-PA  
2.25326

November 11, 1975

Dr. James S. Kumagai  
Deputy Director for Environmental  
Health  
Department of Health  
P.O. Box 3378  
Honolulu, Hawaii 96801

Dear Dr. Kumagai:

Subject: Environmental Impact Statement  
Preparation Notice for the  
Second Entrance Road to Wahiawa  
Project No. 806A-01-73

Thank you for the comments contained in your August 27,  
1975 letter regarding the subject project.

The expected air quality impacts from construction and  
ultimate use will be extensively discussed in the EIS.

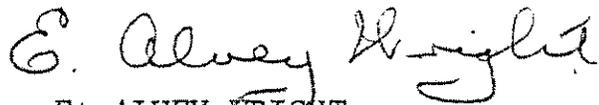
The Section will be organized to cover construction impacts,  
regional impacts and local impacts. The appropriate Chapters  
of the State Public Health Regulations will be cited and miti-  
gation measures to achieve these will be discussed. Tons per  
year of emissions generated as a result of the alternatives will  
be calculated for 1977 and 1987 and compared to City-County  
totals. The analysis does not include ambient concentrations.  
CO concentrations will be estimated at worst case conditions  
for downwind distances of 100, 200 and 300 feet for vehicles  
operating at speeds of 15, 20 and 25 mph.

Dr. James S. Kumagai  
Page 2

HWY-PA 2.25326

If you have any further comments regarding the proposed project, please do not hesitate to contact us.

Sincerely,

A handwritten signature in cursive script that reads "E. Alvey Wright". The signature is written in dark ink and is positioned above the typed name.

E: ALVEY WRIGHT  
Director

2486

GEORGE R. ARIYOSHI  
GOVERNOR OF HAWAII



RECEIVED

CHRISTOPHER COBB, CHAIRMAN  
BOARD OF LAND & NATURAL RESOURCES

EDGAR A. HAMASU  
DEPUTY TO THE CHAIRMAN

SEP 12 12 53 PM 1975

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. BOX 524  
HONOLULU, HAWAII 96809

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

September 5, 1975

REF: HWY-PA  
2.23706

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

SEP 11 8 01 AM 1975  
DIRECTOR'S OFFICE

Dear Sir:

We have reviewed the EIS Preparation Notice for the second entrance road to Wahiawa.

Alternate A will not significantly affect the Wahiawa Reservoir fishery and is acceptable if attention is given to making the roadway attractive.

In contrast, Alternate B would virtually destroy one of the most heavily used parts of the public fishing area. The bridge structure and traffic noise would severely conflict with this quiet recreation area.

Very truly yours,

*Edgar A. Hamasu*  
for CHRISTOPHER COBB  
Chairman of the Board

cc: Divisions

GEORGE R. ARIYOSHI  
GOVERNOR



E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS

WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

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

IN REPLY REFER TO:

HWY-PA  
2.25254

November 4, 1975

MEMORANDUM

TO: THE HONORABLE CHRISTOPHER COBB, CHAIRMAN  
BOARD OF LAND AND NATURAL RESOURCES

FROM: E. ALVEY WRIGHT, DIRECTOR  
DEPARTMENT OF TRANSPORTATION

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE  
FOR THE SECOND ENTRANCE TO WAHIAWA  
PROJECT NO. 806A-01-73

Thank you for the comments contained in your September 5, 1975 letter regarding the above referenced project. All agencies with responsible jurisdiction will receive in the near future a copy of the Environmental Impact Statement.

Your comments concerning visual and noise impacts will be discussed in the EIS.

Generally Alternative B will increase the existing 63.9 L<sub>10</sub> dBA level to a projected 66.4 L<sub>10</sub> dBA level or an increase of 2.5 dBA. Increased levels of traffic will continue to affect ambient noise levels in this area even without the alternate. The bridge structure crossing the Reservoir near the Wahiawa Sewage Treatment Plant will impact the visual quality of the area. Vegetation along the banks of the reservoir presently excludes visual exposure from developed areas, and creates a pleasant environment for boaters and fishermen using the reservoir.

The Honorable Christopher Cobb  
Page 2

HWY-PA 2.25254

Visual impact for either alternative, whether beneficial or adverse, cannot be absolutely determined owing to the subjective nature of the impact. The frequency of exposure and number of persons viewing the roadway structures for each corridor will influence the magnitude of the impact. Mitigation of visual impact for Alternative B can be applied through minimizing the number of support pilings for the bridge structure, and designing the profile of the bridge for a minimum level of visual intrusion.

If you have any further comments regarding the proposed project, please do not hesitate to contact us.

Sincerely,



E. ALVEY WRIGHT  
Director

1402

GEORGE R. ARIYOSHI  
GOVERNOR



ANDREW I. T. CHANG  
DIRECTOR OF SOCIAL SERVICES & HOUSING  
DIRECTOR'S OFFICE

SEP 3 8 25 AM 1975  
STATE OF HAWAII

DEPARTMENT OF SOCIAL SERVICES AND HOUSING

August 26, 1975

MEMORANDUM

To: Honorable E. Alvey Wright, Director  
Department of Transportation

From: Masaru Oshiro, Acting Director

Subject: Request for Comments, Second Entrance Road to  
Wahiawa, Environmental Impact Analysis

In reference to your letter dated August 8, 1975, we have reviewed the Environmental Impact Statement Preparation Notice and have no comments to offer at this time.

  
Acting Director

1421

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU

630 SOUTH BERETANIA

POST OFFICE BOX 3410

HONOLULU, HAWAII 96843

DIRECTOR'S OFFICE  
2:00 PM '75  
TRANSPORTATION

STANLEY S. TAKAHASHI, Vice Chairman  
Teresita R. Jubinsky  
YOSHIE H. FUJINAKA  
KAZU HAYASHIDA  
WALTER D. HOWARD  
E. ALVEY WRIGHT

EDWARD Y. HIRATA  
Manager and Chief Engineer

August 27, 1975

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

Dear Mr. Wright:

SUBJECT: Your Letter of August 8, 1975 Requesting  
Comments, Second Entrance Road to Wahiawa,  
Environmental Impact Analysis

We have reviewed the submitted information and offer  
the following comments:

1. Should alternate B be selected, we would like its design to incorporate the carrying of a major water transmission line from our proposed Wahiawa Wells II across Wilson Lake to the intersection of Kunia Road and Wilikina Drive.
2. We also recommend that construction plans for either alternative be coordinated with our office to accommodate existing water lines and appurtenances.

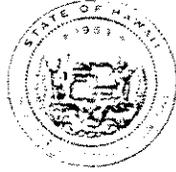
Please contact Mr. Lawrence Whang at 548-5221 should further information be needed.

Very truly yours,

*E. Y. Hirata*  
For Edward Y. Hirata  
Manager and Chief Engineer

SEP 4 1 50 PM 1975

GEORGE R. ARIYOSHI  
GOVERNOR



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

E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS  
WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

November 10, 1975

IN REPLY REFER TO:

HWY-PA  
2.25324

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

Dear Mr. Hirata:

Subject: Environmental Impact Statement  
Preparation Notice for the  
Second Entrance Road to Wahiawa  
Project No. 806A-01-73

Thank you for your letter of August 27, 1975 regarding the subject project.

The design and construction of the second entrance road will be coordinated with your office to accommodate proposed and existing water lines and appurtenances.

A copy of the environmental impact statement will be transmitted to your office for review and comments.

Sincerely,

A handwritten signature in cursive script that reads "E. Alvey Wright".

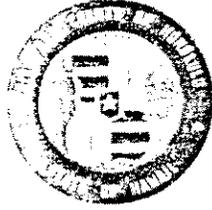
E. ALVEY WRIGHT  
Director

BUILDING DEPARTMENT  
CITY AND COUNTY OF HONOLULU

HONOLULU MUNICIPAL BUILDING  
650 SOUTH KING STREET  
HONOLULU, HAWAII 96813

FRANK F. FASI  
MAYOR

SEP 10 10 57 AM 1975



ERNEST T. YUASA  
DIRECTOR AND BUILDING SUPERINTENDENT

SEP 17 1 27 PM 1975  
PB 75-867

September 12, 1975

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

Gentlemen:

Subject: Second Entrance Road to Wahiawa  
Environmental Impact Analysis

This is to offer the following comments in regards to the subject matter.

1. The Fire Department is in favor of Alternate A as it will provide a shorter response time for their fire fighting units. A copy of their memo dated September 3, 1975 is attached herewith for your information.
2. We are also in favor of Alternate A as Alternate B will reduce the effective size of City's corporation yard.

We believe that the City's Department of Public Works will also offer adverse comments for Alternate B regarding this matter.

Very truly yours,

Handwritten signature of Ernest T. Yuasa in cursive.

ERNEST T. YUASA  
Director and Building Superintendent

JH:jo  
attach.

cc: J. Harada

GEORGE R. ARIYOSHI  
GOVERNOR



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

E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS

WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

IN REPLY REFER TO:

HWY-PA  
2.25256

November 4, 1975

Mr. Ernest T. Yuasa  
Director and Building Superintendent  
Building Department  
City and County of Honolulu  
650 South King Street  
Honolulu, Hawaii 96813

Dear Mr. Yuasa:

Subject: Environmental Impact Statement  
Preparation Notice for the  
Second Entrance Road to Wahiawa  
Project No. 806A-01-73

Thank you for the comments contained in your September 12, 1975 letter regarding the above referenced project. All agencies with responsible jurisdiction will receive in the near future a copy of the Environmental Impact Statement.

Your comments concerning fire response times for Alternative A and adverse effects on the Corporation Yard for Alternative B will be discussed in the EIS.

If you have any further comments regarding the proposed project, please do not hesitate to contact us.

Sincerely,

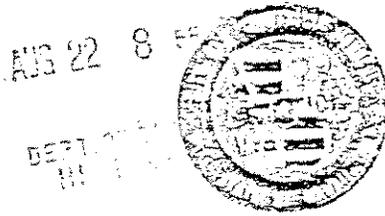
A handwritten signature in cursive script that reads "E. Alvey Wright".

E. ALVEY WRIGHT  
Director

1312

DEPARTMENT OF GENERAL PLANNING  
CITY AND COUNTY OF HONOLULU  
832 SOUTH KING STREET  
HONOLULU, HAWAII 96813  
DIRECTOR'S OFFICE

FRANK F. FASI  
MAYOR



AUG 21 1 13 PM '75

ROBERT R. WAY  
CHIEF PLANNING OFFICER

DEPT. OF  
TRANSPORTATION

DGP8/75-2130 (JW)

August 20, 1975

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

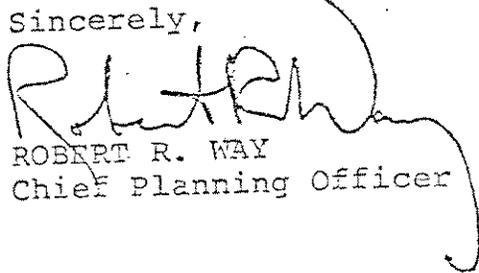
Dear Mr. Wright:

Request for Comments on Environmental  
Assessment of Second Entrance Road to  
Wahiawa, HWY-PA 2.23706

Thank you for transmitting the above for our comments. Please refer to our letter to you dated January 30, 1975, in which it is noted that the alternative alignments discussed in your proposal deviate significantly from the planned roads currently shown on the adopted Detailed Land Use Map for the Wahiawa area. We suggest that you consult with Mr. Ian McDougall of our Plans Revision staff regarding General Plan requirements. He can be reached at 523-4485.

We concur that there will be significant environmental impact involved with either alternative but have no further comments to make until the route selection is made and an Environmental Impact Statement is submitted.

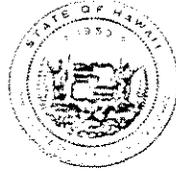
Sincerely,



ROBERT R. WAY  
Chief Planning Officer

RRW:fmt

GEORGE R. ARIYOSHI  
GOVERNOR



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

E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS  
WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

November 11, 1975

IN REPLY REFER TO:

HWY-PA  
2.25331

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

Dear Mr. Way:

Subject: Environmental Impact Statement  
Preparation Notice for the  
Second Entrance Road to Wahiawa  
Project No. 806A-01-73

Thank you for the comments contained in your August 20, 1975 letter on the subject project.

Your comment noting that the proposed project will not conform to the Detailed Land Use Map for the Wahiawa area will be included in the EIS together with a map illustrating the discrepancies.

If you have any further comments regarding the proposed project, please do not hesitate to contact us.

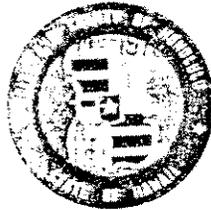
Sincerely,

*E. Alvey Wright*  
E. ALVEY WRIGHT  
Director

DEPARTMENT OF LAND UTILIZATION  
**CITY AND COUNTY OF HONOLULU**

550 SOUTH KING STREET  
HONOLULU, HAWAII 96813

SEP 3 1



FRANK F. FASI  
MAYOR

1410  
SEP 6 2 00 PM '75  
GEORGE S. MORIGUCHI  
DIRECTOR

(EIS) LU8/75-2491  
(BH)

August 27, 1975

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

Dear Mr. Wright:

Environmental Impact Statement Preparation Notice:  
Second Entrance Road to Wahiawa

We have reviewed the above and offer the following comments on the proposed action:

There is no mention of the comparative costs of Alternates A and B. The costs and benefits should be discussed.

Effects on future growth need elaboration, i.e., whether one alternate would be more "growth-inducing" than the other.

The potential impact on arterial streets should also be discussed further. What are the capacities of these streets and what changes in existing traffic patterns are anticipated?

Thank you for the opportunity to review and comment on the above. We would appreciate the opportunity to review the EIS when completed.

Very truly yours,

Handwritten signature of George S. Moriguchi in cursive.  
GEORGE S. MORIGUCHI  
Director

GSM:rh

GEORGE R. ARIYOSHI  
GOVERNOR



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

E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS  
WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

November 11, 1975

IN REPLY REFER TO:

HWY-PA  
2.25329

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

Dear Mr. Moriguchi:

Subject: Environmental Impact Statement  
Preparation Notice for the  
Second Entrance Road to Wahiawa  
Project No. 806A-01-73

Thank you for the comments contained in your August 27, 1975 letter on the subject project.

The comparative costs of all alternatives, the effects of future growth and the traffic impacts on the existing arterial streets will be discussed in the EIS.

If you have any further comments regarding the proposed project, please do not hesitate to contact us.

Sincerely,

A handwritten signature in cursive script that reads "E. Alvey Wright".

E. ALVEY WRIGHT  
Director

DEPARTMENT OF PUBLIC WORKS  
CITY AND COUNTY OF HONOLULU

1466  
150 SOUTH KING STREET  
HONOLULU, HAWAII 96813

SEP 3 1 43 PM '75



SEP 2 2 03 PM '75  
TRAFFIC SECTION

KAZU HAYASHIDA  
DIRECTOR AND CHIEF ENGINEER  
ENV 75-295

FRANK F. FASI  
MAYOR

August 27, 1975

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

Dear Mr. Wright:

Subject: Environmental Impact Analysis  
Second Entrance Road to Wahiawa  
Reference: HWY-PA 2.23706

We have reviewed the EIS Preparation Notice for the Second Entrance Road to Wahiawa and have the following comments. Our comments are directed on the potential adverse effects of Alternate "B" on our activities, as delineated in the Preliminary Map attached to the Preparation Notice.

1. The proposed alignment of Alternate "B" would extend from the intersection of Kunia Road and Wilikina Drive, over Wahiawa Reservoir and connect to the existing California Avenue, passing between the Wahiawa Wastewater Treatment Plant (WWTP) and the City and County Corporation Yard. There are two entrances serving these facilities which will be affected by the proposed connection on California Avenue, the single entrance to the Wahiawa WWTP, and one of the two entrances to the Corporation Yard.

Traffic volume generated by the treatment plant is estimated to vary from 22 to 30 trips a day (a minimum of 11 round trips) and from 46 to 72 trips a day (a minimum of 23 round trips) for the Corporation Yard. Although there are two entrances to the Corporation Yard, both must be maintained. Hence, care must be exercised in the design of the California Avenue terminus of Alternate "B" to ensure safe and accessible ingress and egress to both facilities, particularly during the morning and afternoon peak rush hours.

Mr. E. Alvey Wright

- 2 -

August 27, 1975

2. One of the earlier alignments of Alternate "B" resulted in the loss of one (1) bay of the automobile shop in the Corporation Yard. The existing facilities at the Yard are presently inadequate to support the required Yard's services. Current plans include acquiring a strip of land along the south boundary of the Yard to the top of the bank, to adjust boundaries and to provide space for an automobile equipment service shop and yard storage.

The proposed automotive equipment service shop will be approximately a 40 foot by 48 foot structure. There appears to be a potential conflict with the road alignment and this proposed shop. The shop is essential to our needs, since repair work is presently being done in an uncovered area. These proposed improvements to the Corporation Yard are scheduled in the 1977 fiscal year.

3. The present shoulder area on California Avenue abutting the Corporation Yard is being used for parking of employees' vehicles. This is a concern since employees are not permitted to park their private vehicles in the Yard. Will the implementation of Alternate "B" affect on-street parking?

Very truly yours,

  
FOR KAZU HAYASHIDA  
Director and Chief Engineer

GEORGE R. ARIYOSHI  
GOVERNOR



E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS

WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

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

IN REPLY REFER TO

HWY-PA  
2.25327

November 11, 1975

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

Dear Mr. Hayashida:

Subject: Environmental Impact Statement  
Preparation Notice for the  
Second Entrance Road to Wahiawa  
Project No. 806A-01-73

Thank you for your letter dated August 27, 1975 commenting on the potential adverse effects of Alternate "B".

Should Alternate "B" be selected for the subject project:

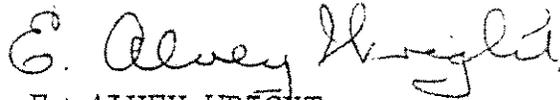
1. The design of the bridge and roadway will be closely coordinated with your office to ensure safe and accessible ingress and egress to the Wahiawa Waste-water Treatment Plant and the Corporation Yard.
2. Every effort will be made to minimize the impact on the facilities of the Corporation Yard. Should it become necessary to relocate the Yard, the State will provide assistance in finding a suitable site.
3. The on-street parking on California Avenue will not be affected.

Mr. Kazu Hayashida  
Page 2

HWY-PA 2.25327

A copy of the environmental impact statement will be transmitted to your office for further review.

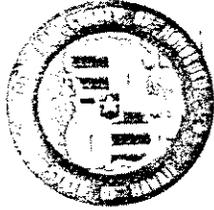
Sincerely,



E. ALVEY WRIGHT  
Director

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

FRANK F. FASI  
MAYOR



14-17  
RECEIVED  
SEP 25 1 15 PM 1975  
GEORGE C. VILLEGAS  
DIRECTOR  
TE8/75-899

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

Dear Admiral Wright:

Subject: Review of EIS Preparation Notice  
Second Entrance Road to Wahiawa

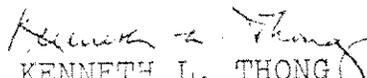
The following comments are submitted following review of the subject matter:

Construction of a second access is needed to relieve some of the traffic burden from the existing road to Wahiawa town.

However, this diversion of traffic will have some adverse effects on those residential streets selected to provide access for either Alternates A or B. In view of the anticipated traffic volumes, foremost will be the danger to pedestrians, especially on those streets presently without sidewalks. Leilehua Road and Uluwehi Street fall within this category.

Utilizing Uluwehi Place as one of the access roads off Alternate A will create additional traffic problems. This roadway will not be adequate to safely accommodate the projected traffic with its existing pavement width of 17 feet on a 30-foot right-of-way width.

Very truly yours,

  
KENNETH L. THONG  
Acting Director

GEORGE R. ARIYOSHI  
GOVERNOR



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

E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS  
WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

November 4, 1975

IN REPLY REFER TO:

HWY-PA  
2.25257

Mr. George C. Villegas, Director  
Department of Transportation  
Services  
City and County of Honolulu  
650 South King Street  
Honolulu, Hawaii 96813

Dear Mr. Villegas:

Subject: Environmental Impact Statement  
Preparation Notice for the  
Second Entrance Road to Wahiawa  
Project No. 806A-01-73

Thank you for your comments contained in your September 19, 1975 letter regarding the above referenced project. All agencies with responsible jurisdiction will receive in the near future a copy of the Environmental Impact Statement.

The potential adverse impacts to those residential streets selected to provide access to Alternates "A" or "B" will be discussed in the EIS. Mitigation measures such as sidewalks, curbs, crosswalks, additional right-of-way and wider pavement will be considered.

If you have any further comments regarding the proposed project, please do not hesitate to contact us.

Sincerely,

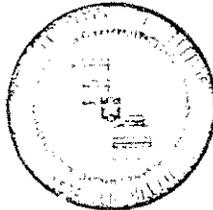
*E. Alvey Wright*  
E. ALVEY WRIGHT  
Director

FIRE DEPARTMENT  
CITY AND COUNTY OF HONOLULU

P. O. BOX 3085  
HONOLULU, HAWAII 96802

FRANK F. FASI  
MAYOR

PLEASE RETURN  
FOR FILING



B. K. AIU  
CHIEF

September 3, 1975

TO : MR. ERNEST T. YUASA  
DIRECTOR AND BUILDING SUPERINTENDENT

FROM : BONIFACE K. AIU, FIRE CHIEF

SUBJECT: SECOND ENTRANCE ROAD TO WAHIAWA  
ENVIRONMENTAL IMPACT ANALYSIS

RECEIVED  
BUILDING DEPARTMENT  
C & C OF HONOLULU  
SEP 4 4 28 AM '75  
REFERRED TO  
*[Handwritten signatures and initials]*  
9-4-75

We have reviewed the Environmental Impact Statement prepared for the proposed Second Entrance Road to Wahiawa by the State Department of Transportation.

The Fire Department definitely favors Alternate A as it provides shorter response for our units. If Wahiawa grows, the growth will have to take place in the area that Alternate A would serve, we feel.

*Boniface K. Aiu*

BONIFACE K. AIU  
Fire Chief

BKA:lhc

1936

AMERICAN  LUNG ASSOCIATION of Hawaii

October 20, 1975

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

Dear Mr. Harano:

Re: Second Entrance Road to Wahiawa  
Project No. 806A-01-73

Thank you for forwarding (HWY-PA 2.24602) a copy of the EIS Preparation Notice for the subject project. We were pleased to note from your letter that the California Highways Division's air quality impact methodology is going to be employed for this project. It is gratifying to see the continued improvement in air quality impact analyses performed by your Department.

We do wish to make a few suggestions, some of which are directly related to the California method while others are supplementary.

1. It is suggested that the persons performing the air quality analysis, if they don't already have a copy, obtain the latest supplement to EPA's Compilation of Air Pollutant Emission Factors (2nd Ed.). Supplement No. 5, prepared earlier this year, introduces a revised method of computing emission factors for motor vehicles. A copy may be obtained by writing to the following address:

U.S. Environmental Protection Agency  
Office of Air Quality Planning and Standards  
National Air Data Branch  
Research Triangle Park, North Carolina 27711

2. In addition to the schools and residential areas mentioned, consider other potential sensitive receptor locations based on projected future land uses in close proximity to the proposed roadway alternates.
3. Based on traffic projections and emission factors, estimate the annual fluctuation in average daily emissions for each of the three major automotive pollutants, i.e., carbon monoxide (CO), hydrocarbons (HC), and nitrogen oxides (NOx), over the design life of the proposed roadway. From this, a critical year for each pollutant may be identified. The critical year is the year

Mr. T. Harano  
October 20, 1975  
Page 2

in which emissions of a given pollutant reach a peak after which they decline due to improved emission control devices and/or changes in traffic volume and road conditions. This critical year should be representative of worst case conditions of traffic and emission factors. If new emission factors are then calculated for peak traffic periods in the critical year and these along with the most adverse meteorological conditions are used as input in a diffusion model, then truly worst case conditions can be estimated.

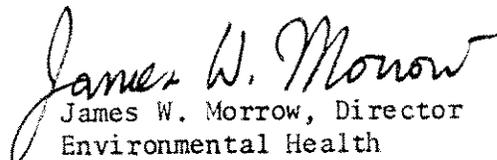
4. More probable pollutant levels may be estimated under the following conditions:
  - a. Peak traffic with more probable meteorological conditions.
  - b. Off-peak traffic with more probable meteorological conditions.
  - c. Average daily traffic taking into consideration temporal variations in traffic and meteorology.

It is not suggested that all of the above necessarily be done, only that any one of the three will give some measure of the air quality under more "average" meteorological conditions.

5. Estimates of CO concentration should be computed for 1-hour and 8-hour averaging periods to permit comparison with State and Federal air quality standards.
6. It is also recommended that HC concentrations be estimated for the 3-hour a.m. peak traffic period. Although CO is a good indicator of ambient air quality impact due to motor vehicle traffic, diffusion modeling suggests that HC standards may be exceeded at the same time CO standards are not.

If you have any questions concerning our suggestions, or if we may be of any further assistance, please do not hesitate to contact us.

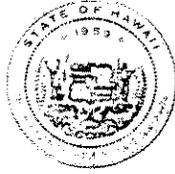
Sincerely,

  
James W. Morrow, Director  
Environmental Health

JWM:ct

cc: Dr. Richard E. Marland, OEQC  
Dr. Albert Tom, EQC

GEORGE R. ARIYOSHI  
GOVERNOR



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

E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS

WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

IN REPLY REFER TO:

HWY-PA  
2.25908

DEC 8 1975

Mr. James W. Morrow, Director  
Environmental Health  
American Lung Association of  
Hawaii  
245 North Kukui Street  
Honolulu, Hawaii 96817

Dear Mr. Morrow:

Subject: Second Entrance Roadway to Wahiawa  
Project No. 806A-01-73

Thank you for your suggestions and comments on the air quality impact analysis for the subject project in your letter of October 20, 1975. Details of the methodology and assumptions used in evaluating the Second Entrance Roadway will be included as an appendix in our EIS.

Supplement No. 5 to EPA's Compilation of Air Pollutant Emission Factors (2nd Ed.) was being printed in San Francisco at the time our preliminary EIS was in preparation, but an advanced copy of the appropriate sections was obtained. On evaluating the revised methodology presented therein, it was felt that insufficient statistical data on traffic in the project area was available to utilize the scenarios proposed by EPA. Instead, the emission factors shown in Supplement No. 2 were applied with some conservative assumptions regarding emission control. It was assumed in our analysis that the 1975 factors remained constant throughout the project life.

Mr. James W. Morrow  
Page 2

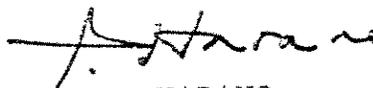
HWY-PA 2.25908

Receptor locations were chosen at sensitive sites near each of the alternative roadway alignments considered in the EIS. Concentrations of CO were estimated for a range of downwind distances and vehicle operating speeds using the California model. As a comparison of models, CO concentrations were also estimated using the methodology in Interim Guidelines for the Review of the Impact of Indirect Sources on Ambient Air Quality (EPA, 1974). The local air quality impact analysis did not estimate concentrations of HC and NO<sub>x</sub> due to the presently poor understanding of the chemical kinetic mechanisms and photochemical aspects of secondary pollutant formation. Mass emissions of CO, HC, and NO<sub>x</sub> were estimated, however, for comparison with the emissions inventory for the City and County of Honolulu.

Statistical analyses of meteorological data from the National Climate Center in Asheville, North Carolina were made for the Wheeler AFB station for use in the impact analysis. Worst case conditions of traffic, emissions, and meteorology were chosen to estimate the air quality impact of a Second Entrance Roadway to Wahiawa.

We look forward to your review of the EIS on the proposed project, and will be glad to answer any questions you may have on the impact analyses.

Very truly yours,



T. HARANO  
Chief

Highways Division

HAWAIIAN ELECTRIC COMPANY, INC.

Box 2750 / Honolulu, Hawaii / 96840



August 27, 1975

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

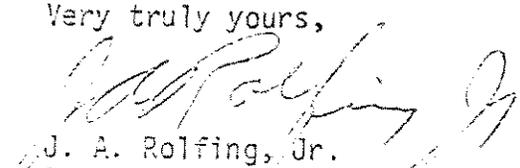
Attention: Mr. Kenneth Au, Project Manager

Gentlemen:

Subject: Second Entrance Road to Wahiawa  
Environmental Impact Analysis  
Reference: HWY-PA, 2.23706

The route of the proposed roads as shown on the preliminary map submitted with your letter indicates that both routes may have an impact on Hawaiian Electric's power lines. In the case of Alternate "A," there could be an impact on 46 kv lines and 138 kv lines, and Alternate "B" could have an impact on 46 kv lines. Since the plans are preliminary, we could not tell whether or not the construction would actually require a relocation of facilities. Should a relocation be required, the work could have environmental effects and therefore your environmental impact statement should probably be making reference to problems which could occur in relocating our facilities.

Very truly yours,

  
J. A. Rolfing, Jr.  
Special Projects Advisor

JAR,JR:mn



E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS

WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

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

IN REPLY REFER TO:

HWY-PA  
2.25330

November 11, 1975

Mr. J. A. Rolwing, Jr.  
Special Projects Advisor  
Hawaiian Electric Company, Inc.  
Box 2750  
Honolulu, Hawaii 96840

Dear Mr. Rolwing:

Subject: Environmental Impact Statement  
Preparation Notice for the  
Second Entrance Road to Wahiawa  
Project No. 806A-01-73

Thank you for the comments contained in your August 27,  
1975 letter on the subject project.

Your comments on potential impact to existing transmission  
lines will be discussed in the EIS.

Generally, alternatives A and B have been located to  
avoid the necessity of relocating existing pylons and towers.  
As a mitigation measure, the EIS will recommend review of  
the detailed plans by Hawaiian Electric, Inc., prior to  
construction. Since no impacts to existing lines are antici-  
pated at this time, no secondary relocation impacts will be  
discussed in the EIS.

If you have any further comments regarding the proposed  
project please do not hesitate to contact us.

Sincerely,

A handwritten signature in cursive script that reads "E. Alvey Wright".

E. ALVEY WRIGHT  
Director

---

APPENDIX G  
LIST OF APPROVALS REQUIRED

---



LIST OF APPROVALS REQUIRED

1. Department of General Planning  
City and County of Honolulu  
- General Plan Amendment
2. Department of Land Utilization  
City and County of Honolulu  
- Subdivision Approval
3. Department of Land and Natural Resources  
State of Hawaii  
- Conservation District Use Permit
4. Department of the Army  
Corps of Engineers  
- "Section 404" Permit
5. Wheeler Air Force Base  
"Finding of Public Interest"

(Obtained, see Appendix E)

To date, the project has been in the "corridor location stage" which is too early to seek most permits (except as noted above). Since the alternative recommended for the present is "no-action", further pursuit of these permits is not appropriate. If, as anticipated, a second entrance into Wahiawa becomes necessary by 1997, the project will move into the "design stage" and the information required for the above approvals (as well as any additional approvals required by that time) will be developed.



---

APPENDIX H  
COMMENTS AND RESPONSES  
TO DRAFT EIS

---



## APPENDIX H COMMENTS AND RESPONSES TO THE DRAFT EIS

### Introduction

Appendix H includes the letters and comments that were received from persons and agencies reviewing the Draft EIS. This Appendix is arranged in four sections:

- |      |   |      |
|------|---|------|
| I.   | Respondents with Comments not Requiring Reply (list only)           | H-1  |
| II.  | Comments on the Draft EIS Requiring Reply (list and letters)        | H-2  |
| III. | Persons Testifying at the April 20, 1976 Public Hearing (list only) | H-89 |
| IV.  | Summary of Environmental Concerns (Draft EIS and Public Hearing)    | H-90 |

### LIST OF RESPONDENTS IN APPENDIX H

I.	<u>RESPONDENTS TO THE DRAFT EIS WITH COMMENTS NOT REQUIRING REPLY</u>	<u>LETTER DATED</u>	<u>PAGE</u>
A.	<u>FEDERAL AGENCIES</u>		
1.	Department of Agriculture Soil Conservation Service	3/30/76	H- 6
2.	Department of the Air Force	3/17/76	H- 7
3.	Department of Health, Education and Welfare Office of Environmental Affairs	4/21/76	H- 8
4.	Department of Transportation Federal Aviation Administration	3/18/76	H- 9
5.	Department of Transportation U.S. Coast Guard	4/ 9/76	H-10

	<u>LETTER DATED</u>	<u>PAGE</u>
B. <u>STATE OF HAWAII AGENCIES</u>		
1. Department of Agriculture	3/ 4/76	H-11
2. Department of Defense	3/ 3/76	H-12
3. Department of Education	3/22/76	H-13
4. Department of Health	4/19/76	H-14
5. Department of Land and Natural Resources	3/29/76	H-15
6. Department of Planning and Economic Development	3/17/76	H-16
7. Department of Social Services and Housing	3/11/76	H-17
C. <u>CITY AND COUNTY OF HONOLULU</u>		
1. Board of Water Supply	3/18/76	H-18
2. Department of Housing and Community Development	3/ 5/76	H-19
3. Department of Land Utilization	4/ 2/76	H-20

II. RESPONDENTS WITH COMMENTS TO THE DRAFT  
EIS REQUIRING REPLIES

A. FEDERAL AGENCIES

1. Department of the Army Army Engineer District, Honolulu	4/ 5/76	
	Comment	H-21
	Response	H-22

		<u>LETTER DATED</u>	<u>PAGE</u>
2.	Department of the Army Headquarters, U.S. Army Support Command, Hawaii	4/ 7/76	
	Comment		H-23
	Response		H-26
3.	Department of Housing and Urban Development Federal Housing Administration, Honolulu Insuring Office	4/ 6/76	
	Comment		H-29
	Response		H-31
4.	Department of Transportation Federal Highway Administration	3/19/76	
	Comment		H-32
	Response		H-34
B.	<u>STATE OF HAWAII AGENCIES</u>		
1.	Office of Environmental Quality Control	4/ 7/76	
	Comment		H-36
	Response		H-41
2.	University of Hawaii at Manoa Environmental Center	4/ 7/76	
	Comment		H-47
	Response		H-48
C.	<u>CITY AND COUNTY OF HONOLULU</u>		
1.	Department of General Planning	3/10/76	
	Comment		H-49
	Response		H-53

		<u>LETTER DATED</u>	<u>PAGE</u>
2.	Department of Public Works	3/17/76	
	Comment		H-54
	Response		H-55
3.	Department of Transportation Services	3/29/76	
	Comment		H-56
	Response		H-57
D.	<u>ORGANIZATIONS AND BUSINESSES</u>		
1.	American Lung Association of Hawaii	4/ 7/76	
	Comment		H-59
	Response		H-64
2.	Hawaiian Electric Co., Inc.	3/10/76	
	Comment		H-67
	Response		H-71
3.	Life of the Land	4/ 7/76	
	Comment		H-72
	Response		H-75
4.	Mililani Town Association	3/29/76	
	Comment		H-77
	Response		H-78
5.	Trinity Lutheran Church	3/30/76	
	Comment		H-79
	Response		H-83

LETTER  
DATED

PAGE

E. PRIVATE INDIVIDUALS

2. Mr. Francis T. Tanaka

4/20/76

Comment  
Response

H-84  
H-87

3678

UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

440 Alexander Young Bldg., Honolulu, HI 96813

March 30, 1976

E. Alvey Wright, Director  
Department of Transportation  
869 Punchbowl St.  
Honolulu, HI 96813

Dear Mr. Wright:

Subject: A Second Entrance to Wahiawa, dEIS

We have reviewed subject draft EIS and have no comments.

Sincerely,

*Jack P. Kanaly, Acting*  
Francis C. H. Lum  
State Conservationist

cc:  
Dr. Richard Marland, OEQC  
(w/EIS returned)

TRIP  
MAR 31 10 15 AM '76  
DIRECTOR'S OFFICE

13  
12



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 18th AIR BASE WING (PACAF)  
APO SAN FRANCISCO 96353



TO: DEEE (Mr Nakashima, 4492158)

17 MAR 1976

FROM: Environmental Impact Statements

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

1. This headquarters has no comment to render relative to the Environmental Impact Statements for the following projects:

- ✓ a. A Second Entrance to Wahiawa  
Wahiawa, Oahu, Hawaii
- b. Proposed Shafter Flats Refuse Processing  
and Transfer Station  
Honolulu, Oahu, Hawaii

2. We greatly appreciate your cooperative efforts in keeping the Air Force apprised of your development projects throughout the state.

A handwritten signature in black ink, appearing to read "Den D. Kosa".

DEN D. KOSA  
Dep Dir. of Civil Engineering



3840

Department of Health, Education and Welfare  
OFFICE OF ENVIRONMENTAL AFFAIRS

APR 21 1976  
PLANNING BR.  
VIC 24WH

RECEIVED  
APR 21 9 20 AM 1976  
DEPT. OF HEALTH, EDUCATION AND WELFARE

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

RE: A Second Entrance to Wahiawa,  
Island of Oahu, Hawaii

Dear Sir:

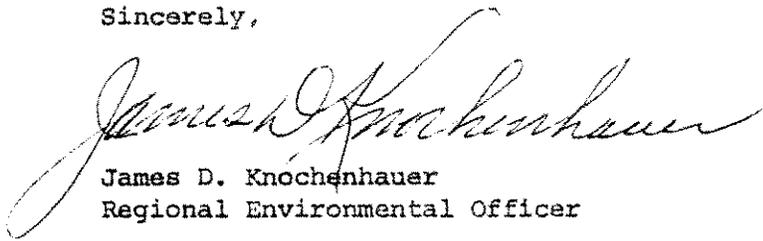
The above Draft Environmental Impact Statement has been reviewed in accordance with the interim procedures of the Department of Health, Education and Welfare as required by Section 102 (2) (c) of the National Environmental Policy Act, PL 91-190.

It is noted that all alternates would increase the noise levels at one school or another. Careful planning and design of sound barriers must be undertaken to avoid the necessity for physical soundproofing of the school(s) affected. Such construction is exceedingly expensive and when applied to an existing structure is all too frequently unsatisfactory.

The material provided appears to describe adequately the impacts of the proposed action as well as the alternatives that were presented. The major concerns of this department are related to possible impacts upon the health of the population, services to that population and changes in the characteristics of the population which would require a different level or extent of services. Our review does not identify problems related to these specific concerns.

The opportunity to review this statement was appreciated.

Sincerely,



James D. Knochenhauer  
Regional Environmental Officer

cc: OS/OEA  
CEQ  
E. Alvey Wright, Director ✓  
Department of Transportation

DIRECTOR'S OFFICE  
APR 26 8 02 AM '76  
TRANSPORTATION

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

3610

PACIFIC-ASIA REGION  
P.O. BOX 4009  
HONOLULU, HAWAII 96813

DIRECTOR'S OFFICE



RECEIVED  
MAR 23 9 15 AM 1976  
DEPT. OF TRANSPORTATION  
MAR 19 12 42 PM 1976  
SEAL OF DEPT. OF TRANSPORTATION

March 18, 1976

Rear Admiral E. Alvey Wright, USN, Ret.  
Director  
Department of Transportation  
State of Hawaii  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Admiral Wright:

We have reviewed the Draft Environmental Impact Statement dated January 1976, on a Second Entrance Road to Wahiawa (Project No. 806A-01-73).

Our comment as stated in our letter of August 25, 1975, on this same subject, is the same, in that the project does not appear to have any adverse effect on the aeronautical facilities or activities.

Thank you for the opportunity to comment.

Sincerely,

*Joseph B. Nestor*  
JOSEPH B. NESTOR  
Acting Director, APC-1



DEPARTMENT OF TRANSPORTATION  
UNITED STATES COAST GUARD

3759

Address reply to:  
COMMANDER (mep)  
Fourteenth Coast Guard District  
1575 Ala Moana  
Honolulu, Hawaii 96813

APR 14 8 22 AM 1976  
APR 9 1976  
DEPT. OF TRANSPORTATION  
DIRECTOR'S OFFICE

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

Dear Admiral Wright:

Staff review of the "Environmental Impact Statement for a Second Entrance to Wahiawa" has been completed, and the Coast Guard has no particular comments to offer on the proposed project. Any bridges involved with this project will not be subject to any Coast Guard permit requirements.

The opportunity to review and comment on this EIS is appreciated.

Sincerely,

  
W. H. STEWART  
Captain, U. S. Coast Guard  
Chief of Staff  
Fourteenth Coast Guard District

GEORGE R. ARIYOSHI  
GOVERNOR



JOHN FARIAS, JR.  
CHAIRMAN, BOARD OF AGRICULTURE

YUKIO KITAGAWA  
DEPUTY TO THE CHAIRMAN

DIRECTOR'S OFFICE

STATE OF HAWAII  
DEPARTMENT OF AGRICULTURE  
1428 SO. KING STREET  
HONOLULU, HAWAII 96814

MAR 8 1 02 PM '76

DEPT. OF  
TRANSPORTATION

MAR 9 11 05 AM

DEPT. OF  
TRANSPORTATION

March 4, 1976

MEMORANDUM

TO: E. Alvey Wright, Director  
Department of Transportation

SUBJECT: A SECOND ENTRANCE TO WAHLAWA  
Project No. 806A-01-73

The Department of Agriculture has reviewed the Environmental Impact Statement (EIS) and have no additional comments to offer at this time.

Thank you for the opportunity to comment.

John Farias, Jr.  
Chairman, Board of Agriculture

JF:d:a



STATE OF HAWAII  
DEPARTMENT OF DEFENSE  
OFFICE OF THE ADJUTANT GENERAL  
FORT RUGER, HONOLULU, HAWAII 96816

HIENG

3 March 1976

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

Gentlemen:

A Second Entrance to Wahiawa

Thank you for sending us a copy of the Environmental Impact Statement for the proposed "A Second Entrance to Wahiawa." We have reviewed the publication and have no comments to offer.

We are returning the Environmental Impact Statement for the proposed project per your request.

Yours truly,

*Frederic W. Kleva*  
for WAYNE R. TOMOYASU CPT, CE, HARNG  
Contr & Engr Officer

Enclosure



STATE OF HAWAII  
 DEPARTMENT OF EDUCATION  
 P. O. BOX 2380  
 HONOLULU, HAWAII 96804

24  
 DIRECTOR'S OFFICE  
 RECEIVED  
 MAR 25 12 47 PM '76  
 MAR 25 1 54 PM 1976  
 DEPARTMENT OF EDUCATION

OFFICE OF BUSINESS SERVICES

March 22, 1976

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

F R O M: Koichi H. Tokushige, Assistant Superintendent *Koichi H. Tokushige*  
 Office of Business Services

SUBJECT: Environment Impact Statement for Second Entrance to Wahiawa

Thank you for providing us with a copy of the subject E.I.S. We note that our concerns expressed to the Department of Transportation in September, 1975 have been incorporated in the E.I.S.

Since the sound level data indicate they are within the standards, the basic concerns would still be the bus loading and unloading areas for Wahiawa Intermediate and Leilehua High Schools should Alternate A be selected. Whether Alternate A or B is selected, pedestrian safety would have high priority.

KHT:JEE:yk

cc: Central Oahu District  
 / Department of Transportation

5/84

DIRECTOR'S OFFICE

APR 23 12 46 PM '76

DEPT. OF  
TRANSPORTATION

April 19, 1976

ss

MEMORANDUM

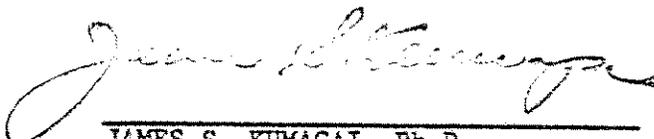
To: Dr. Richard E. Marland, Director  
Office of Environmental Quality Control

From: Deputy Director for Environmental Health

Subject: Environmental Impact Statement (EIS) for Second Entrance to  
Wahiawa Town

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

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

  
 \_\_\_\_\_  
 JAMES S. KUMAGAI, Ph.D.

RECEIVED:  
 APR 27 1 01 PM '76  
 ST. DEPT. OF TRANS.  
 HWYS DIV.  
 PLANNING BR.  
 Aley Wright

RECEIVED  
 APR 26 8 55 AM 1976  
 DEPT. OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION

GEORGE R. ARIYOSHI  
GOVERNOR OF HAWAII



CHRISTOPHER COBB, CHAIRMAN  
BOARD OF LAND & NATURAL RESOURCES

EDGAR A. HAMASU  
DEPUTY TO THE CHAIRMAN

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

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

March 29, 1976

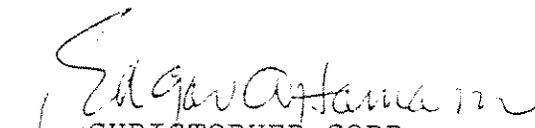
Environmental Quality Commission  
550 Halekauwila Street, Room 301  
Honolulu, Hawaii 96813

Gentlemen:

Thank you for the opportunity to review the EIS for  
the "second entrance" to Wahiawa.

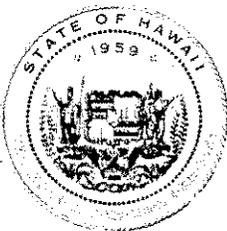
We have no further comments to add.

Sincerely,

  
CHRISTOPHER COBB  
Chairman of the Board

cc: Fish & Game  
State Parks

3604



DEPARTMENT OF PLANNING AND ECONOMIC DEVELOPMENT

DEPT. OF TRANS.  
STATEWIDE TRANS.  
OFFICE  
MAR 17 10 47 AM '76

GEORGE R. ARIYOSHI  
Governor  
HIDETO KONO  
Director  
FRANK SKRIVANEK  
Deputy Director

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

March 17, 1976

Ref. No. 0582

MEMORANDUM

TO: The Honorable E. Alvey Wright, Director  
Department of Transportation

FROM: *for* Hideto Kono, Director *Frank Skrivaneck*

SUBJECT: Environmental Impact Statement for a Second Entrance to Wahiawa,  
Project No. 806A-01-73

We have reviewed the subject statement and find that it has adequately assessed the probable environmental impacts that can be anticipated from the proposed project.

The need for a second entrance into Wahiawa is well established. It is apparent that future growth of Wahiawa, if any, would necessarily occur in the eastern sector where the geographical characteristics are more conducive to development. In considering the ingress and egress patterns, however, alternative A seems to exhibit a greater potential to effectively relieve traffic stresses. For this reason, we submit our preference for that alternative.

We have no further comment to offer at this time, but we appreciate the opportunity to review the statement.

DIRECTOR'S OFFICE  
MAR 19 8 09 AM '76  
DEPT. OF TRANSPORTATION



STATE OF HAWAII  
DEPARTMENT OF SOCIAL SERVICES AND HOUSING

March 11, 1976

MEMORANDUM

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

From: Andrew I. T. Chang, Director

Subject: A Second Entrance to Wahiawa

After review of the EIS, the following are our comments:

1. HHA has a housing project consisting of 96 units at TMK 7-1-07:49 and property planned for future residential development at TMK 7-4-07:6. From the viewpoint of accessibility, Plan A would be more favorable for trips generated by the development of the second parcel. Plan B would be more favorable for trips generated by the first parcel.
2. In view of the enhancement of the general accessibility to both projects, we feel that the second entrance to Wahiawa will increase the desirability to purchase a home in our projects.

We are returning the Environmental Impact Statement per your instructions.

  
Director

Enc.



**COPY**

35/2

MAR 23 10 48 AM '76  
PLANNING BR.  
HIGHWAYS DIV.  
ST. DEPT. OF TRANSP.

March 18, 1976

MAR 23 12 50 PM '76

DEPT. OF  
TRANSPORTATION

DIRECTOR'S OFFICE

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

Dear Dr. Marland:

SUBJECT: Environmental Impact Statement,  
A Second Entrance to Wahiawa  
(Project No. 806A-01-73)

We have reviewed the environmental impact statement and do not anticipate any adverse effects to potable ground-water resources. Also, we reaffirm our comments in our letter of August 27, 1975, to Mr. E. Alvey Wright (Appendix F).

Please call Mr. Lawrence Whang at 548-5221 if further information is needed.

Very truly yours,

Edward Y. Hirata  
Manager and Chief Engineer

cc: ✓ Mr. E. Alvey Wright, Director  
Dept. of Transportation

DEPT. OF TRANSPORTATION  
HIGHWAYS DIVISION

MAR 24 12 46 PM 1976

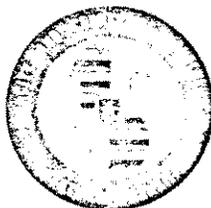
RECEIVED

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET  
HONOLULU, HAWAII 96813  
PHONE 523-4161

FRANK F. FASI  
MAYOR

RICHARD K. SHARPLESS  
MANAGING DIRECTOR



WILLIAM BLACKFIELD  
DIRECTOR

TYRONE T. KUSAO  
DEPUTY DIRECTOR

March 5, 1976

MEMO TO: Office of Environmental Quality Control  
FROM: William Blackfield, Director  
SUBJECT: Environmental Impact Statement for  
A Second Entrance to Wahiawa

The Department of Housing and Community Development has reviewed the EIS for "A Second Entrance to Wahiawa." We have no comments to make relating to this Agency's program or workload. We are returning the copy of the EIS for your further use.

Thank you for the opportunity to review this matter.

A handwritten signature in cursive script, appearing to read "W. Blackfield".

William Blackfield  
Director

Enc.

DEPARTMENT OF LAND UTILIZATION  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET  
HONOLULU, HAWAII 96813



FRANK F. FASI  
MAYOR

GEORGE S. MORIGUCHI  
DIRECTOR

EIS LU3/76-603 (GN)

April 2, 1976

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

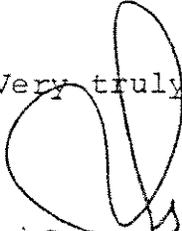
Dear Dr. Marland:

EIS for A Second Entrance to Wahiawa

We have reviewed the above, are in agreement with the objectives of the proposed action and feel that the statement submitted adequately describes potential effects on the environment.

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

Very truly yours,

  
GEORGE S. MORIGUCHI  
Director of Land Utilization

GSM:ls

3718



PODED-P

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

APR 9 11 54 AM 1976  
5 April 1976

DEPARTMENT OF TRANSPORTATION  
APR 7 12 54 PM '76  
DIRECTOR'S OFFICE

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

Dear Mr. Wright:

We have reviewed the draft environmental statement for "A Second Entrance to Wahiawa" and offer the following comments for your consideration.

a. The open space and recreational areas impacted by the project are described on pages III-25 and IV-25. Consideration should be given to a more detailed evaluation of the visual change and impact on the quality of the open space-recreation value of the Wahiawa Reservoir.

b. The Wahiawa Reservoir is a "navigable water" in accordance with paragraph (d)(2)(i)(g)(4), 33 CFR 209.120. Consequently, discharges of dredged or fill material into the reservoir are subject to regulation pursuant to Section 404 of the Federal Water Pollution Control Act. "Discharge of fill material" includes activities such as fill required for bridge abutments and footings (pier foundations) and for property protection devices such as riprap. If the project includes discharges of dredged or fill material into navigable waters, Appendix G of the impact statement should be amended to include the requirement for a Department of the Army permit.

Thank you for the opportunity to review the statement.

Sincerely yours,

*Kisuk Cheung*  
for  
KISUK CHEUNG  
Chief, Engineering Division

Copy furnished:  
Office of Environmental Quality  
Control  
State of Hawaii  
550 Halekauwila St. Room 301  
Honolulu, Hawaii 96813



GEORGE R. ARIYOSHI  
GOVERNOR



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

E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS  
WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

IN REPLY REFER TO:

HWY-PA  
2.28894

May 18, 1976

Mr. Kisuk Cheung  
Chief, Engineering Division  
U.S. Army Engineer District,  
Honolulu  
Building 230, Fort Shafter  
APO San Francisco 96558

Dear Mr. Cheung:

Subject: Second Entrance to Wahiawa  
Project No. 806A-01-73  
Reference: Your letter dated 5 April 1976

Thank you for your comments on the project's environmental statement. Our response follows:

- a. The construction of either alternative will have both short-and long-term effects on visual quality. The visual impact and possible mitigation measures are discussed in Chapter IV, Paragraph A. It is recognized as an unavoidable adverse impact in Chapter V.
- b. Appendix G will be amended to reflect the Department of the Army's permit requirements.

Thank you for your concern on this project.

Sincerely,

A handwritten signature in cursive script that reads "E. Alvey Wright".

E. ALVEY WRIGHT  
Director

5751



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

APR 13 8 40 AM 1976

7 APR 1976

AFZV-FE-EE

DEPT. OF TRANSPORTATION  
HONOLULU, HAWAII

DIRECTOR'S OFFICE  
APR 9 12 40 PM '76  
DEPT. OF TRANSPORTATION

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

Gentlemen:

We have reviewed the EIS document and offer the following comments for your consideration. The comments are keyed to the paragraphs in the document.

Page I-3, para 2 - What are the construction schedules for the replacement of Wilson Bridge and the improvements to Kamehameha Highway?

Page II-7, para 3 - Why can't Federal funds be obtained for this project?

Page II-7, para 4 - Because the traffic data developed by the Highway Planning Branch is important to the EIS and is used for the noise and air quality impact analysis as well as for comparison of alternatives, an explanation should be included as to how it was obtained or developed. This explanation could be included in the body of the document or attached as an appendix.

Table 1 should be explained. It seems as if the traffic will be heavier for Alternative "B" than for Alternative "A". Does this mean that Alternative "B" is better situated or is there another reason for the higher average daily traffic totals?

Page II-9, para 2 - The figures as stated in table two and three should be explained. For example, why would it cost \$734,700 for the right-of-way in Alternative B; it seems as if this cost which is mainly over water is too high. In table three what is the significance of the benefit cost ratios 1.45, 1.33 and 1.69?



GEORGE R. ARIYOSHI  
GOVERNOR



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

E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS  
WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

June 22, 1976

IN REPLY REFER TO:  
HWY-PA  
2.29588

Colonel Charles S. Varnum  
Director of Facilities Engineering  
Department of the Army  
Headquarters U.S. Army Support  
Command, Hawaii  
APO San Francisco 96558

Dear Colonel Varnum:

Subject: Second Entrance To Wahiawa  
Project No. 806A-01-73, EIS

Thank you for your review and comments on the project's EIS. Our responses to your comments and questions follow in the order they were expressed.

1. Construction of the new Wilson Bridge is scheduled to begin this year and should be completed by late 1978.

Delays have been encountered on the Kamehameha Highway widening project. Consequently, we anticipate beginning the design phase during the latter part of this year with construction to follow.

2. This project is not on the approved Federal-aid system and consequently is not presently eligible for federal funds.

3. The average daily traffic is based on projected population and economic data obtained from the Hawaii Department of Planning and Economic Development. This data is distributed to available land uses based on the approved General Plan for the City and County of Honolulu. After these land uses are updated to reflect the projected population and economic data, theoretical trips are generated and distributed to work, shopping, schools, social and recreational destinations. With this hypothetical distribution of trips, the mode of transportation is developed, such as transit and vehicle trips, which in turn are used as Average Daily Traffic estimates.
4. Alternate "B" attracts more traffic than Alternate "A" because it is more accessible to the traffic generating from commercial and medium density (apartment) zoned lands.
5. The rights-of-way costs for Alternate "B" include the acquisition of 19,500 square feet of medium density zoned lands and 53,900 square feet of industrial lands.

The benefit cost ratio indicates the annual return on an improvement investment in the form of a road-user benefit. A ratio of one (1.00) indicates that the annual road-user savings are equal to the annual cost of the improvement. A ratio less than one indicates that the improvement would be uneconomical, since the annual savings are less than the annual cost. A ratio greater than one indicates that the improvement is economical and beneficial.

In comparing benefit cost ratios, the higher value indicates the better return.

6. The State recognizes the Army's training needs.
7. The tax revenues lost for each alternate will be included in the revised statement.

Please refer to Item 5 for the explanation of benefit cost ratios.

Colonel Charles S. Varnum  
Page 3

HWY-PA 2.29588

8. Change in lifestyles is addressed on Page IV-21. The comparison between the two routes is also included on Page IV-21. Alternate "B" would increase traffic volumes on the western portion of California Avenue which would increase social costs on residential areas to a lesser degree than Alternate "A".
9. Refer to Item 6.
10. Alternate "A" will require 15 acres of land. Alternate "B" will require 2 acres.
11. Pages III-21, 23 and 24 cover the population demographic data. The other traffic data are too extensive to include in the EIS but are available for review at the Highway Planning Branch, 600 Kapiolani Boulevard, Honolulu.

Alternate "B" would serve the bulk of the traffic generating areas (Refer also to Item 4).

12. Chapters 3 and 4 will be expanded to identify the existing vegetation and the project's impact upon it.
13. The aircraft noise from Wheeler Field is intermittent, and its contribution to noise levels should not be a major factor in the highway noise impact evaluation.

The type and amount of vehicles used in the noise prediction calculations will be included in the revised EIS.

Thank you for your concern for this project.

Sincerely,

*R Higashionna*  
for E. ALVEY WRIGHT  
Director



REGION IX  
 450 Golden Gate Avenue  
 P.O. Box 36003  
 San Francisco, California 94102

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT  
 FEDERAL HOUSING ADMINISTRATION  
 HONOLULU INSURING OFFICE  
 P.O. BOX 3377  
 HONOLULU, HAWAII 96801  
 April 6, 1976

3717

RECEIVED

APR 9 11 34 AM '76  
 DEPT. OF HOUSING AND URBAN DEVELOPMENT  
 HONOLULU, HAWAII  
 REFER TO:  
 Mr. Johnson/  
 546-5554

DEPT. OF HOUSING AND URBAN DEVELOPMENT  
 HONOLULU, HAWAII

DEPT. OF  
 TRANSPORTATION

APR 7 12 55 PM '76

DIRECTOR'S OFFICE

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

Dear Mr. Wright:

Subject: Draft Environmental Impact Statement  
 Second Entrance to Wahiawa  
 Project No. 806A-01-73

This letter responds to your request for comments on the Draft EIS for the Second Entrance to Wahiawa.

1. In our letter to you dated September 9, 1975 we noted that there were no HUD projects that would be affected by the proposed action described in "Request for Comments Second Entrance Road to Wahiawa" dated August 8, 1975.

Subsequent to the above letter, we have received an application from a sponsor who plans to build a housing project that would conflict with alternate "B". The sponsor is applying for mortgage insurance under Section 221(d)3 and is also applying for Housing Assistance Payments under Section 8. The land parcel can be identified as TMK 7-3-09:3-13 on the mauka side of Wilikina Drive at the Kunia Road intersection.

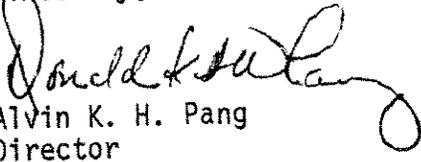
The sponsor has been notified of the proposed action to provide a second entrance to Wahiawa but also intends to proceed with his housing project.

2

2. The Draft EIS also discusses the alternative approaches. However, the impact of the increased traffic on local streets on alternate "A" should be covered in greater detail. The degree of increased traffic and the number of trucks would have a bearing on the potential impacts.

If we can be of any further assistance, please do not hesitate to call upon our staff.

Sincerely,



Alvin K. H. Pang  
Director

GEORGE R. ARIYOSHI  
GOVERNOR



E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS  
WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

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

IN REPLY REFER TO:  
HWY-PA  
2.29403

June 18, 1976

Mr. Alvin Pang  
Director  
Federal Housing Administration  
Honolulu Insuring Office  
Department of Housing and  
Urban Development  
P.O. Box 3377  
Honolulu, Hawaii 96801

Dear Mr. Pang:

Subject: Draft Environmental Impact  
Statement  
Second Entrance to Wahiawa  
Project No. 806A-01-73  
Reference: Your letter dated  
April 6, 1976

Thank you for advising us of the pending housing project on the parcel of land identified as TMK 7-3-09:3-13 and of the sponsor's request for mortgage insurance and housing assistance payments. We are now evaluating the public's input on both the Second Entrance's public hearing and environmental impact statement. A decision on the choice of alternates will be made shortly.

Please be assured the final EIS will address your comments on Alternate 'A'.

Sincerely,

*R Higashionna*  
for E. ALVEY WRIGHT  
Director

677 Ala Moana Blvd., Suite 613  
Honolulu, Hawaii 96813

March 19, 1976

915EC

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

Dear Mr. Marland:

Subject: Draft Environmental Impact Statement,  
Second Entrance to Wahiawa, State Project  
806A-01-73.

We have reviewed the Draft EIS for the subject project.  
Please consider the following comments during development  
of the Final EIS.

1. The alternative "A" connection to existing Kamehameha Highway (Federal-aid Primary Route 99) may introduce undesirable operational movements due to its close proximity to the Wahiawa Interchange southwest ramp quadrant and the main gate entrance to Wheeler Field. A traffic study of potential impacts on existing Kamehameha Highway between East Range Road and the H-2 Wahiawa Interchange should be developed.

2. The southern terminus of Alternative "B" at the Kunia Road (Federal-aid Secondary Route 750)/Wilikina Drive (FAP Route 99) intersection should be studied for potential impact on available intersection capacity.

3. The effect of Alternative "B" on the California Avenue/Kamehameha Highway (Federal-aid Primary Route 80) intersection should be evaluated.

The Draft EIS makes occasional reference to various Federal-aid Highway Program requirements. To date, the Federal Highway Administration has not received a State application

-more-

Dr. Richard Marland, Director  
March 19, 1976  
Page 2

for Federal-aid funds for any development phase of the subject project. However, should Federal funds be requested, the State must conform to all requirements of the Federal-aid Highway Program Manual.

Sincerely yours,

Ralph T. Segawa  
Division Administrator

By: H. KUSUMOTO  
H. Kusumoto  
Assistant Division Administrator



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

IN REPLY REFER TO  
HWY-PA  
2.28358

April 15, 1976

Mr. Ralph T. Segawa  
Division Administrator  
Federal Highway Administration  
U. S. Department of Transportation  
677 Ala Moana Boulevard, Suite 613  
Honolulu, Hawaii 96813

Dear Mr. Segawa:

Subject: Second Entrance to Wahiawa  
Project No. 806A-01-73

Our reply to the similarly numbered comments contained in your March 19, 1976 letter to the State's Office of Environmental Quality Control follows:

Comments No. 1 and 2 - Findings to date indicate that there will be a minimal impact at either the Kamehameha Highway or the Kunia Road/Wilikina Drive Intersection with the Second Entrance Road. We anticipate that minor adjustments to the existing highways and an adjustment to the traffic signal light phasing are all that will be required to maintain a workable intersection. These adjustments will not cause any adverse environmental impacts.

Comment No. 3 - An intersection analysis was conducted for Alternate B at the California Avenue and Kamehameha Highway Intersection. We have found that with the anticipated widening of Kamehameha Highway to six lanes, only a restriping of the intersection and an adjustment to the traffic signal light phasing are required. The capacity of this intersection will in fact improve as a large number of the Schofield bound left-turning movements onto Kamehameha Highway will be replaced

Mr. Ralph T. Segawa  
Page 2

HWY-PA 2.28358

by a through movement down California Avenue to the Kunia crossing.

Thank you for reviewing the Environmental Impact Statement. In the event we elect to request Federal participation, we will most certainly comply with the requirements of the Federal-aid Highway Program Manual.

Sincerely,

*R. Higashimura*  
*for* E. ALVEY WRIGHT  
Director

3757

GEORGE R. ARIYOSHI  
GOVERNOR



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

DIRECTOR'S OFFICE  
RICHARD E. MARLAND, PH.D.  
DIRECTOR

APR 12 8 35 AM '76  
TELEPHONE NO. 548-6915

DEPT. OF TRANSPORTATION

April 7, 1976

MEMORANDUM

TO: E. Alvey Wright, Director  
Department of Transportation

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

SUBJECT: Environmental Impact Statement for a Second  
Entrance to Wahiawa

This office has reviewed the Environmental Impact Statement for a Second Entrance to Wahiawa and wishes to offer the following comments:

Chapter 1, Project Description.

Since Kamehameha Highway enters Wahiawa from both the north and south, will the proposed action be a third entrance?

C. Need for Improvement.

When will the level of service on Kamehameha Highway between California Avenue and the new Wilson Bridge decrease due to the unavailability of another access roadway?

P. II-6 Alternative C - The "No Project" Alternative.

The reader is referred back to the section Need for Improvement for a discussion of the impacts of Alternative C. There is little coverage of the impacts of this alternative in the present paragraph under Need for Improvement. We suggest an expansion of the coverage for Alternative C. Has the possibility of postponing the project been considered as another alternative? Was a second entrance from the north or northwest considered as an alternative? It might aid those travelling to and from Schofield Barracks and the North Shore.

Table 1 Average Daily Traffic.

Since the noise and air quality impacts are directly related with the amount of traffic, Table 1 should be an important source of information. What growth assumptions were used to estimate the ADT values for the three years listed? What is the present real ADT for the affected roadway alternates? Are the numbers shown an underestimate of the actual expected ADT for the Wahiawa access route? In the environmental impact statement for the new Wilson Bridge and Approaches, 1973 (p.1), it states a 1972 figure of 29,000 or more for the ADT along that route, and estimates 43,000 for the year 1997. Table 1 lists the estimated 1977 ADT for Kamehameha Highway between Wilson Bridge and California Avenue as 25,050 ADT as the basic condition. A discussion is recommended for clarity.

Another possible discrepancy of Table 1 can be seen when compared with Table D-1 under Appendix D, Air Quality Impact Analysis. The figures for Alternate B and "condition with alternate B" within Table 1 do not equal the "basic condition." If the figure 6400 is switched with 4940 (from Table D-1) then the figures in Table 1 for alternate B would total. This confusion might be eliminated in the revised EIS.

Would a change in the ADT figures upward or downward change the design of the second entrance to Wahiawa and thereby change the air and noise impacts of the project ?

Tables 2 and 3.

To what degree were the non-quantifiable social and aesthetic costs of each alternative considered?

Chapter 3, Environmental Setting, photo plates.

What is the estimate concerning the number of large trees to be removed along each alternative?

C. Surface and Groundwater.

Will the pilings significantly change the flow hydraulics of the reservoir? Will large fluctuations in the volume of the reservoir affect the aesthetics of the pilings? That is, a drought condition would expose more of the pilings.

Will the fish habitat be significantly changed due to the change of hydraulics associated with the pilings?

E. Noise.

We note that the sound readings were taken during the summer when schools were out of session. We would suggest that additional noise readings be taken during the day when schools are in session. The noise impact on schools should be a primary concern for the design of a second entrance to Wahiawa. Would the design noise level for monitoring site A (along Alternate B) be 60 dBA, or less, since the area is a preservation zone area? Will the design of the alternatives adhere to the new State Department of Health noise regulations, Chapter 44B?

P. IV-6, 2. Regional Impacts.

The impact of Air Pollution on the local environments along alternatives A or B might be mentioned in this section.

P. IV-14. If the increased noise forces the windows of Wahiawa Intermediate School to be closed, what mitigation measures might be necessary to maintain a comfortable teaching environment in the classrooms?

P. IV-18, Social Environment, 1. Population.

We suggest that the Board of Water Supply of the City and County of Honolulu be contacted to obtain their population growth estimates for the Wahiawa region. The Federal Census of Population could also provide data, including the commuting habits of the population, on the Wahiawa region. Will a second entrance to Wahiawa induce an accelerated population growth rate?

P. IV-26, Alternate B.

We suggest that "open spills" should read "open space." We share the primary concern for public safety, especially near the schools.

Chapter 5.

The "no second entrance" alternative should be considered for inclusion in this chapter.

Chapter 6, Short-Term Uses versus Long-Term Productivity.

The EIS should address the secondary impact generated by the proposed action in terms of population growth, increased urbanization, changes in air, water and noise pollution, use of public facilities and utilities, upgraded zoning, changes in land values and potential tax revenues within this chapter.

Page 4

Appendix G. What approvals are required? What is the status of each?

As of this date this office has received a total of nineteen (19) comments as indicated on the attached list.

The EIS Regulations allow the accepting authority or his authorized representative to consider responses received after the fourteen day response period. This Office will exercise the option and will consider responses after the fourteen day period.

Thank you for the opportunity to review the Environmental Impact Statement for A Second Entrance to Wahiawa. We will look forward to the revised statement.

Attachment

List of commentors for the Environmental Impact Statement  
for A Second Entrance to Wahiawa, Department of Transportation.

<u>State Agencies</u>	<u>Date of Receipt</u>
Department of Land and Natural Resources	4/1
Department of Planning and Economic Development	3/19
*Department of Defense	3/8
Department of Social Services and Housing	3/18
Department of Education	3/25
<u>University of Hawaii</u>	
*Water Resources Research Center	3/29
<u>City and County of Honolulu</u>	
Department of General Planning	3/12
Department of Land Utilization	4/5
Department of Transportation Services	3/30
Department of Public Works	3/23
Board of Water Supply	3/23
*Department of Housing and Community Development	3/20
<u>Federal</u>	
Federal Highway Administration Region Nine	3/19
U.S. Army Corps of Engineers	4/7
*U.S. Fish and Wildlife Service	4/1
*Soil Conservation Service	4/1
*15 ABWg/DEE	3/19
Hawaiian Electric Company	3/12
Mililani Town Association	3/30
*denotes "no comments."	

GEORGE R. ARIYOSHI  
GOVERNOR



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

June 22, 1976

E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS  
WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

IN REPLY REFER TO:  
HWY-PA  
2.29620

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

Dear Dr. Marland:

Subject: Second Entrance to Wahiawa  
Project No. 806A-01-73  
EIS

Thank you for your review and comments on the project's  
EIS. Our response to your comments and questions are attached  
and follow the order they were expressed.

Your concern for this project is appreciated.

Sincerely,

*R Higashionna*  
for E. ALVEY WRIGHT  
Director

Enclosure

State of Hawaii  
Department of Transportation  
Highways Division  
Planning Branch

RESPONSES TO OEQC LETTER  
OF APRIL 7, 1976

June 22, 1976

Chapter 1

The project is entitled "Second Entrance to Wahiawa Town" to conform to the legislative appropriation.

Need for Improvement

- a. Kamehameha Highway between Wilson Bridge and California Avenue will be adequate up to 1997 at level of Service "D".
- b. The revised EIS will be modified to more clearly describe the impacts of the "no project" alternative.
- c. Postponing the project is under consideration more for reasons of project scheduling than as a separate alternative.
- d. Traffic warrants do not support a northern or northwesterly alternative.

Table 1, Traffic

- a. Growth assumptions, per se, were not made in deriving the ADT values on Table 1 of the subject report. The design year volumes (1997) were based on a traffic assignment utilizing the PEEP I 1995 trip table recognized by the Oahu Metropolitan Planning Organization (OMPO). The PEEP I trip table in turn is based on projected population and economic data which were obtained from the Department of Planning and Economic Development. The 1977 ADT's were projected with factors based on historical travel trends for the study area. Then the 1987 volumes were interpolated using the 1977 and 1997 ADT values.

- b. The latest 24-hour ground counts for the affected roadway alternates were taken in February 1975 and are listed below:

California Avenue @ Kaala Elementary School	1,849
Kamehameha Highway @ Wilson Bridge	33,223
California Avenue, between Circle Drive and Plum Street	17,226
Rose Street @ California Avenue	2,919
Rose Street @ Wahiawa Intermediate School	1,662
Uluwehi Street @ California Avenue	1,109
Hoomaha Street @ California Avenue	474
Leilehua Road @ California Avenue	1,156

- c. We do not feel that the forecasted volumes for the Wahiawa access routes are underestimated.
- d. In the EIS for the Wilson Bridge and Approaches, 1973, page 1, the 1972 ADT of 29,000 is higher than the 1977 ADT of 25,050 on Table 1 of the EIS for A Second Entrance to Wahiawa, 1976 for the following reasons:

1. the 1972 ADT of 29,000 represents the most congested segment of Kamehameha Highway in Wahiawa Town--the Wilson Bridge segment. The 1977 ADT of 25,050 is the average volume on Kamehameha Highway between Wilson Bridge and California Avenue that was weighted by the length of each segment multiplied by its volume.

2. the Wilson Bridge traffic assignment reflects the current highway network (i.e. Interstate Route H-2 is nonexistent). The Second Entrance traffic assignment assumes that Interstate Route H-2 is completed in 1977. Thus, traffic that originally passed through Wahiawa Town is diverted from Kamehameha Highway to Wilikina Drive which is the more attractive route by virtue of it being a direct extension of Interstate Route H-2.
  
- e. Adding the figures for Alternate B and "condition with Alternate B" will not equal the "basic condition." This is because the 6,400 vehicles on Alternate B includes traffic diverted from Kamehameha Highway via the Karston Thot Bridge. These volumes are not reflected in the "basic condition" since they have turned off Kamehameha Highway prior to passing California Avenue. The "basic condition" volumes, as noted on Table 1, consists of traffic between California Avenue and the Wilson Bridge.

The 4,940 ADT shown in Table D-1 is explained on the same page as being the volume on California Avenue near Kaala Elementary School. The 6,400 ADT is the volume on the bridge midway between California Avenue and Wilikina Drive.

There is no discrepancy between Table 1 and Table D-1. Both are correct.

- f. Air and noise impacts will fluctuate with changes in ADT, but the basic design parameters are not expected to change.

### Tables 2 and 3

Non-quantifiable social and aesthetic costs are not reflected in Tables 2 and 3. However, there are many "built-in" environmental costs that are part of the highway improvement. These include but are not limited to providing landscaping, proper drainage features to prevent erosion and flooding, relocation assistance, horizontal and vertical alignment adjustments to minimize noise, vegetative and other environmental impacts.

### Chapter 3, Section A

The revised EIS will include an estimate of the trees which will have to be removed.

#### Surface and Groundwater

- a. Backwater calculations indicate that construction of either Alternates "A" or "B" will not significantly affect the hydraulics of the reservoir.
- b. Yes, drought conditions will expose more of the pilings.
- c. There will not be a significant adverse impact on the reservoir's fish habitat. The impact may even prove to be beneficial as the piling surfaces would provide additional habitat for aquatic biota.

#### Noise

- a. The potential noise impacts on Kaaala Elementary, Wahiawa Intermediate, and Leilehua High Schools are of particular concern to us. In evaluating the projected noise levels for each roadway segment, it was felt that use of 1997 ADT's would provide a sufficiently conservative estimate of maximum expected noise levels. Actual levels would be expected to be less before 1997, and there appears to be a sufficient difference between the design sound level and the projected levels to accommodate a higher background value when the schools are in session.
- b. This project is subject to the provisions of all environmental regulations administered by the State Department of Health.

#### Regional Impacts

- a. Local impacts of air pollution are discussed on page IV-8.
- b. Air conditioning is a possible mitigation measure if highway related noises exceed standards and cause the school windows to be closed.

Social Environment, 1. Population

- a. The Department of Planning and Economic Development is the official source for population figures for this project.
- b. The Federal Census was used as a data source.
- c. The population growth of Wahiawa is significantly constrained by natural features and existing land uses. It is expected that a second entrance would accommodate intra-community traffic rather than induce inter-community traffic.

Alternate B

We agree.

Chapter 5, Unavoidable Adverse Impacts

This chapter in the revised EIS will be written for the selected alternate.

Chapter 6

The revised EIS will be modified to identify secondary impacts.

Appendix G

The approvals and status will be included in the revised EIS.



# University of Hawaii at Manoa

Environmental Center  
Crawford 317 • 2550 Campus Road  
Honolulu, Hawaii 96822  
Telephone (808) 948-7361

Office of the Director

April 7, 1976

TO: E. Alvey Wright  
Richard E. Marland

FROM: Doak C. Cox *Doak C. Cox*

RE: Review of EIS for Second Entrance to Wahiawa

Time and available personnel have not permitted the usual broad University review of this EIS. Our comments reflect questions raised by the Center staff, Dan Burhans and Jacquelin Miller, in their brief review of the document. These comments are presented for your consideration.

We note that both alternatives A and B would span Kaukanohua stream and could therefore be detrimental to the reservoir fishery environment. We would suggest that further details be provided as to the impacts of constrictive potential sedimentation, and long term useage of the proposed roads on the fishery and water quality of the reservoir.

With regard to noise levels it would appear that alternative B would entail a significant long term permanent impact on the residential areas and particularly Kaala Elementary School.

The noise studies included as appendix C may be somewhat misleading inasmuch as they represent only 2 measurements at each site and may not correlate with peak noise periods or critical sites. We note for example, afternoon noise levels at Site 2, Kaala elementary school were measured at 1625 - 1635. We would assume that school would not be in session after 1430. What are the predicted noise levels for each of these sites assuming alternative A and B? In this regard alternative A would appear to have relatively less noise impact on Wahiawa Intermediate and Leilehua High Schools since it is a greater distance from the school sites.

We are sorry that time has not permitted a more thorough evaluation of this EIS however we hope our comments will be of use in your preparation of the final statement.

GEORGE R. ARIYOSHI  
GOVERNOR



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

E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS

WALLACE AOKI  
RYOKICHI HIGASHIONA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

IN REPLY REFER TO:

June 23, 1976

HWY-PA  
2.29567

Dr. Doak C. Cox, Director  
Environmental Center  
University of Hawaii at Manoa  
Crawford 317  
2550 Campus Road  
Honolulu, Hawaii 96822

Dear Dr. Cox:

Subject: Second Entrance to Wahiawa  
Project No. 806A-01-73, EIS

Thank you for your review of the project's environmental impact statement.

As suggested, the revised EIS will be modified to further detail the potential water quality impacts from construction and use of the proposed roadway.

The potential noise impacts on Kaala Elementary, Wahiawa Intermediate, and Leilehua High Schools were of particular importance in the DEIS, and their predicted noise levels are shown in Tables 18 and 19. In evaluating the projected levels for each roadway segment, it was felt that the use of the 1997 ADT's would provide a sufficiently conservative estimate of maximum expected noise levels. Actual levels would be expected to be less before 1997, and there appears to be sufficient difference between the design sound level and the projected levels to accommodate a higher background value when the schools are in session.

Your input is appreciated.

Sincerely,

*R Higashionna*  
for E. ALVEY WRIGHT  
Director

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

650 SOUTH KING STREET  
HONOLULU, HAWAII 96813

FRANK F. FASI  
MAYOR



ROBERT R. WAY  
CHIEF PLANNING OFFICER

DGP3/76-457(JB)

March 10, 1976

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

Dear Dr. Tom:

Second Entrance to Wahiawa  
(Project No. 806A-01-73)  
Draft Environmental Impact Statement

This is in reference to the above-captioned.

Alternative highway corridors A and B, for a second entrance to the community of Wahiawa, do not conform to the adopted General Plan Detailed Land Use Map for the area. Earlier correspondence from this office to the Department of Transportation on two occasions (1/30/75 and 8/20/75) made clear this concern and indicated that an amendment to the General Plan would be required (see attachment). As of the above date, however, the Department of Transportation has yet to submit its Letter of Intent to amend the General Plan.

According to statistics shown in Table 2, it has been estimated that some three to four million dollars will be needed to construct the highway improvements (whichever alternative is selected). The draft report states specifically that "The design and construction of the selected alternative will be funded by the State of Hawaii." Because the taxpayers of Hawaii will have to shoulder the

Dr. Albert Tom  
Page 2

entire brunt of financing these improvements, clarification as to why federal financial assistance will not be sought in this instance seems appropriate.

Sincerely,



ROBERT R. WAY  
Chief Planning Officer

RRW:fmt

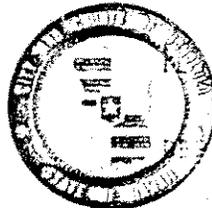
Attachment

DEPARTMENT OF GENERAL PLANNING  
CITY AND COUNTY OF HONOLULU  
SUITE 2100 PACIFIC TRADE CENTER  
190 SOUTH KING STREET  
HONOLULU, HAWAII 96813

809,

DIRECTOR'S OFFICE

FRANK F. FASI  
MAYOR



10 9 AM 1975

FEB 3 10 57 AM 1975  
ROBERT R. WAY  
CHIEF PLANNING OFFICER  
DONALD A. CLEGG  
DEPUTY CHIEF PLANNING OFFICER  
TRANSPORTATION  
DGPI/75-143 (ICM)

JAN 30 1975

DIRECTOR'S OFFICE  
FEB 7 2 22 PM '75  
DEPARTMENT OF  
TRANSPORTATION

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

Dear Mr. Wright:

This is in response to your notice of a public information meeting on the proposed Second Entrance Road to Wahiawa (Project No. 806A-01-73).

Based on the information depicted on your project location map, I would note that all the alternative alignments being considered deviate significantly from the planned roads currently shown on the adopted Detailed Land Use Map for the area. Should any of the proposed alternative alignments be selected for construction of a second entrance to Wahiawa, an amendment to the General Plan will be necessary.

Sincerely,

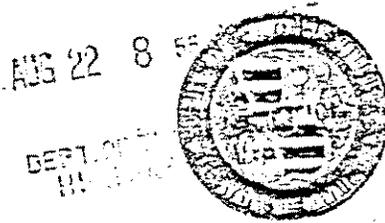
*for Donald A. Clegg*  
ROBERT R. WAY  
Chief Planning Officer

RRW:dat

3312

DEPARTMENT OF GENERAL PLANNING  
CITY AND COUNTY OF HONOLULU  
652 SOUTH KING STREET  
HONOLULU, HAWAII 96813  
DIRECTOR'S OFFICE

FRANK F. FASI  
MAYOR



AUG 21 1 13 PM '75

ROBERT R. WAY  
CHIEF PLANNING OFFICER

DEPT. OF  
TRANSPORTATION

DGP8/75-2130 (JW)

August 20, 1975

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

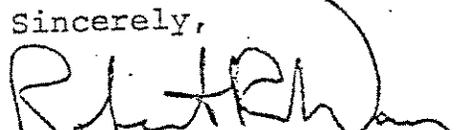
Dear Mr. Wright:

Request for Comments on Environmental  
Assessment of Second Entrance Road to  
Wahiawa, HWY-PA 2.23706

Thank you for transmitting the above for our comments. Please refer to our letter to you dated January 30, 1975, in which it is noted that the alternative alignments discussed in your proposal deviate significantly from the planned roads currently shown on the adopted Detailed Land Use Map for the Wahiawa area. We suggest that you consult with Mr. Ian McDougall of our Plans Revision staff regarding General Plan requirements. He can be reached at 523-4485.

We concur that there will be significant environmental impact involved with either alternative but have no further comments to make until the route selection is made and an Environmental Impact Statement is submitted.

Sincerely,



ROBERT R. WAY  
Chief Planning Officer

RRW:fmt

GEORGE R. ARIYOSHI  
GOVERNOR



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

E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS  
WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

IN REPLY REFER TO:  
HWY-PA  
2.28169

April 6, 1976

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

Dear Mr. Way:

Subject: Second Entrance to Wahiawa  
Project No. 806A-01-73, EIS

Your letter dated March 10, 1976 to the Environmental Quality Commission was referred to us for reply.

We are aware that Alternates 'A' and 'B' do not conform to the Detailed Land Use Map for Wahiawa. However, both alternates are conceptually similar and serve the same transportation purposes as the two new highways that are depicted on the DLUM. Since our project is in the corridor and feasibility study phase, it is inappropriate at this time to initiate an amendment. At such time that our plans and course of action are firm, please be assured that proper action will be taken to amend the General Plan.

Regrettably, Federal financing is not available for this project since this highway is not on the Federal-aid highway system. However, should it become a part of the system in the future, we will most certainly seek Federal participation in its construction.

Thank you for reviewing the Statement.

Sincerely,

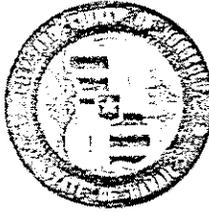
*for R Higashionna*  
E. ALVEY WRIGHT  
Director

3V 11

DEPARTMENT OF PUBLIC WORKS  
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET  
HONOLULU, HAWAII 96813

FRANK F. FASI  
MAYOR



RECEIVED  
FEB 24 12 45 PM 1976

KAZU HAYASHIDA  
DIRECTOR AND CHIEF ENGINEER

ENV 76-130

March 17, 1976

DIRECTOR'S OFFICE  
MAR 23 12 40 PM '76  
DEPT. OF TRANSPORTATION

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

Gentlemen:

Subject: Environmental Impact Statement for  
Second Entrance to Wahiawa

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

The implementation of Alternate "B" will have several adverse effects on the operation of our Corporation Yard on California Avenue. These adverse effects are documented in our letter to the State Department of Transportation, dated August 27, 1975, ENV 75-295. If implemented, the proposed alignment of Alternate "B" would require the relocation of the Corporation Yard. We request assistance of the State in finding a suitable site, preferably one close to Mililani Town.

Very truly yours,

*Wallas Hayashida*  
KAZU HAYASHIDA  
Director and Chief Engineer

cc: State Dept. of Transportation  
Div. of Land Survey & Acquisition  
Div. of Road Maintenance

3511

JUN 24 1976

HWY-PA  
2.29402

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

Dear Mr. Hayashida:

Subject: Second Entrance to Wahiawa  
Project No. 806A-01-73, EIS

Reference is made to your letter to the Environmental  
Quality Commission dated March 17, 1976.

Revised plans for Alternate 'B' were developed to  
minimize the impacts to the Corporation Yard and recently  
transmitted to your Department for comment. We trust  
these revisions are satisfactory. However, in the event  
relocation is necessary, we will provide assistance in  
finding a suitable replacement site.

Please be advised that an alternate for implementation  
has not been selected yet. Besides Alternate 'B', Alter-  
nates 'A' and 'C' remain viable choices.

Sincerely,

*R. Higashimura*

for E. ALVEY WRIGHT  
Director

KYA:ft/km

cc: VTN Pacific, HWY-R

DEPARTMENT OF TRANSPORTATION SERVICES  
**CITY AND COUNTY OF HONOLULU**

HONOLULU MUNICIPAL BUILDING  
650 SOUTH KING STREET  
HONOLULU, HAWAII 96813

APR 7 1 21 PM '76

ST. DEPT. OF TRANS.  
HWYS DIV  
PLANNING BR.



MAR 29 1976

GEORGE C. VILLEGAS  
DIRECTOR

TE3/76-395

FRANK F. FASI  
MAYOR

DEPT. OF  
TRANSPORTATION

MAR 31 1 14 PM '76

DIRECTOR'S OFFICE

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

Gentlemen:

Subject: Environmental Impact Statement  
A Second Entrance to Wahiawa

We have reviewed the subject Environmental Impact Statement, and the following comments are provided to augment our initial response to the Preparation Notice:

One of our main concern has been the potential safety hazard to pedestrians on the affected residential streets in view of the anticipated increase in vehicular traffic. Table 1 summarizes traffic projections for the years 1977, 1987, and 1997 on Kamehameha Highway and on the alternative routes. The Average Daily Traffic (ADT) on Kamehameha Highway in the report is projected at 25,050 for the year 1977 under basic conditions, and a supplementary ADT of 3940 for Alternative A and 6,400 for Alternative B. We believe today's ADT on that section of Kamehameha Highway already exceeds 30,000. Based on this, it appears that there will be a decrease in traffic along this section and we would like to know how this will affect the projected ADT on the alternative routes. We also need to know the projected ADT for Leilehua Road and for Uluwehi Place.

Thank you for this opportunity to review and comment on this Environmental Impact Statement.

Very truly yours,  
*George C. Villegas*

GEORGE C. VILLEGAS  
Director

cc: Admiral E. Alvey Wright,  
Director, State DOT

GEORGE R. ARIYOSHI  
GOVERNOR



E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS

WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

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

IN REPLY REFER TO:

HWY-PA  
2.28402

April 15, 1976

Mr. George C. Villegas  
Director  
Department of Transportation  
Services  
City and County of Honolulu  
650 South King Street  
Honolulu, Hawaii 96813

Dear Mr. Villegas:

Subject: Second Entrance to Wahiawa  
Project No. 806A-01-73

Thank you for your comments on the project's Environmental Impact Statement.

Your observation that the future average daily traffic (ADT) on Kamehameha Highway will decrease is correct. The primary reason for this will be the completion of Interstate Route H-2 which will facilitate the usage of Wilikina Drive for northbound traffic. We expect the ADT on Wilikina Drive to be as follows:

	<u>With Alternate A</u>	<u>With Alternate B</u>
1977	21,800	16,520
1987	23,890	18,590
1997	25,980	20,660

Mr. George C. Villegas  
Page 2

HWY-PA 2.28402

The traffic on Leilehua Road and Uluwehi Place will also be influenced by Alternate A and we expect the ADT to be:

	<u>Leilehua Road</u>	<u>Uluwehi Place</u>
1977	2,400	300
1987	3,080	420
1997	3,800	540

These volumes are much greater than experienced today but are well below Leilehua Road's present capacity. Uluwehi Place will, of course, need to be widened as mentioned in the impact statement.

Thank you for your concern on this project. Please contact us should you have any further questions.

Sincerely,

  
E. ALVEY WRIGHT  
Director

3728

AMERICAN  LUNG ASSOCIATION of Hawaii

April 7, 1976

APR 8 1 06 PM '76  
OFFICE OF  
TRANSPORTATION  
DIRECTOR'S OFFICE

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

Dear Dr. Marland:

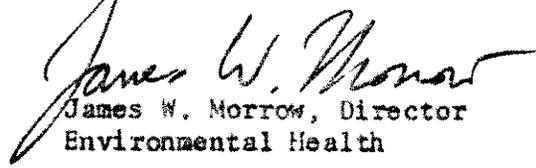
Subject: Draft Environmental Impact Statement for  
A Second Entrance to Wahiawa

We have reviewed the subject EIS with regard to its assessment of air quality impact. While most of the methodology employed was fine, we did discover a number of discrepancies which we believe require some explanation and clarification. Outdated emission factors were used and the contribution of truck and bus traffic appears to have been left out. As a result total emissions were underestimated, particularly in the case of hydrocarbons and oxides of nitrogen.

The use of the California line source model was good except that the preparers apparently were not aware of our letter of December 24, 1975 advising the State Highways Division of the existence of six modifications and supplements to the California model. As a result they failed to incorporate the latest revisions and thus introduced some error into their air quality estimates.

Our detailed comments on the EIS are attached for your information. We hope that you and your staff will find them useful and informative.

Sincerely,

  
James W. Morrow, Director  
Environmental Health

JWM:ct  
Att.

cc: E. Alvey Wright, Director, DOT

# AMERICAN LUNG ASSOCIATION *of Hawaii*

April 6, 1976

## REVIEW OF THE ENVIRONMENTAL IMPACT STATEMENT FOR THE SECOND ENTRANCE TO WAHIAWA

1. Table 15 (p. IV-7). There is no indication in the EIS as to what emission factors (EF) were used in the generation of data for Table 15. The average route speed, percentages of light and heavy duty trucks and buses (both gasoline and diesel powered), and other parameters which go into the development of EF's were not specified. Identification of these parameters is very important since the EF's have such a significant effect on both emissions and ambient air quality impact assessment. Annual emissions are calculated as follows:

$$E = VMT \cdot EF \cdot CF \quad (1)$$

Where: E = emissions (T/yr)

VMT = vehicle miles traveled (mi/yr)

EF = emission factor (g/mi)

CF = conversion factor ( $1.102 \times 10^{-6}$  T/g)

By rearranging this equation we were able to calculate the EF's used in deriving Table 15.

$$EF = \frac{E}{VMT \cdot CF} \quad (2)$$

In checking Table 15, we used the ADT values from Table I (p. 11-8) and route lengths of 2.6 mi (Alt A) and 0.4 mi (Alt B) from p. 11-2 and p. 11-6 respectively. The results are shown below:

		Emission Factors (g/mi)		
		<u>CO</u>	<u>HC</u>	<u>NOx</u>
Alternate A	1977	27.6	2.8	3.2
	1987	17.2	1.8	2.3
Alternate B	1977	32.0	3.2	3.7
	1987	19.4	2.0	2.6

The EF's do not seem to correspond with the EF's presented in the cited reference (AP-42, Supplement 2), and the question of how they were derived is thus raised. It is particularly unusual that different EF's appear to have been used for Alternates A and B in the same calendar year. This should be clarified.

In fact, as noted in the EIS, the cited reference has been superceded by Supplement 5 which describes a more detailed methodology for generating "localized" EF's. This revised method takes into account recent changes in the attainment dates for federal emission standards and incorporates a few more parameters such as hot/cold start and ambient temperature factors. The procedure is a bit more time consuming and the input data is harder to find, but it should provide better EF's than those based solely on national statistics. Another very important factor which does not appear to have been considered in the generation of emissions data in the EIS is the contribution of gasoline and diesel powered trucks and buses. Weighted EF's should have been calculated which reflected the percentages of these vehicles.

Following the Supplement 5 methodology, we developed weighted emission factors which take into account both age distribution and vehicle type based on 1975 motor vehicles registrations in the City & County of Honolulu. Using these EF's emissions estimates for 1977 and 1987 were calculated and are displayed below.

		Annual Emissions (T/yr)		
		<u>CO</u>	<u>HC</u>	<u>NOx</u>
Alternate A	1977	156	31	247
	1987	82	27	302
Alternate B	1977	39	7.7	62
	1987	19	6.3	71

Input parameters:

Average route speed:	35 mph
Hot/cold start percentage:	27/20%
Ambient temperature:	75° F
Light duty vehicles:	89.5% <sup>1</sup>
Light duty trucks:	5.4% <sup>1</sup>
Heavy duty trucks & buses (diesel):	3.45% <sup>1,2</sup>
Heavy duty trucks & buses (gasoline):	1.65% <sup>1,2</sup>
Route length:	2.6 mi (Alt A) 0.4 mi (Alt B)
ADT:	Table I of the EIS

- Notes: 1. Source: State of Hawaii, Department of Transportation, Highways Division. Traffic Summary Island of Oahu - 1973. It was assumed that the percentages on the segment of FAP Route 99 nearest Wilson Bridge would apply to the alternates.
2. Since the Traffic Summary doesn't indicate diesel or gasoline-powered vehicles, it was assumed that half of the "other single unit trucks" and all the "truck combinations" were diesel-powered.

It is evident that the results are significantly different than those presented in Table 15 of the EIS. This is particularly true for HC and NOx which experience the greatest impact from the inclusion of truck and bus traffic.

2. Table 16 (p. IV-8). No information was provided on what EF's were used and how they were derived. Using equation (2), we again calculated the EF's which were apparently used and the results are shown below:

		<u>CO Emission Factor</u>
No Second Entrance	1977	39 g/mi
	1987	24
Alternate A	1977	39
	1987	24
Alternate B	1977	39
	1987	24

These EF's are not the same as those used in Table 15 probably due to different route speeds. This should be clarified. The fact that the EF's are consistent within Table 16 reinforces the belief that there are errors in Table 15 where the EF for a single pollutant in a single year was not always the same.

3. Table D-1 (Appendix D). Why are traffic volumes for segments a and b of Alternate A added together to equal Alternate A traffic (Table I, p. 11-8) while traffic volumes for segment b alone of Alternate B equal corresponding traffic volumes in Table I, p. 11-8?
4. Appendix D (Meteorological Conditions). The frequencies of occurrence of F stability and 0-3 mph winds are very high. For exactly what months, days and time of day are these frequencies believed to be representative?
5. Appendix D (Meteorological Conditions). The selection of road/wind angles does not represent worst case conditions as stated. It would have been more appropriate to select parallel winds and then determine from what direction such winds would come as well as the frequency at 0-3 mph. The table on the third page of the Appendix indicates only

single directions when in reality the supplements of those directions should also be listed thus doubling the possible directions from which critical winds could come. As pointed out in our letter to the Highways Division (December 24, 1975) there are six modifications and supplements to the basic California model. Modification 6.5 - Worst Case Conditions (March, 1975) states that "if the receptor being analyzed is close to the highway, its worst case will be under parallel wind ( $\theta = 0^\circ$ ) conditions." Modification 6.2 - Parallel Wind Summations describes the revised CALINE 2 model's approach to estimating CO concentrations in parallel winds.

6. Table 17 and Table D-2. The values in these tables are all in error by a factor of  $2/\sqrt{2\pi}$ . Modification 6.4 - Calibration Coefficient (March, 1975) reported the incorporation of this factor in the revised CALINE 2 model. All the values in this table would have been greater had parallel wind conditions been considered. A more accurate assessment would have included a weighted 1997 EF based on the vehicle age and type distribution of projected traffic.
7. It is evident that even after making all the revisions suggested in the preceding comments, CO concentrations resulting from this project will still be well below existing ambient air quality standards primarily because of the relatively low traffic volume. It should be kept in mind, however, that these estimates are premised on standards which are subject to change and delay. Several delays and "Interim" standards have already been seen in recent years. Furthermore, Congress is presently considering further changes and delays in attainment dates. What this all means is that today's estimates of future pollutant concentrations may be in great error by tomorrow. This should be kept in mind.
8. Finally, we report the results of recent CO measurements made at a site along Kamehameha Highway approximately 50 m north of Wilson Bridge and 10 m from the west side of the roadway. Weather conditions were overcast with occasional light rain and occasionally gusty winds from the NE.

	<u>Traffic</u>	<u>CO Concentration</u>
Period: 0540-0810 (05 Apr 76)	4,577 vehicles	4 mg/m <sup>3</sup>
Light duty trucks	9.2%	
Heavy duty trucks	0.9%	
Buses	2.5%	
Peak-hour: 0710-0810	2,206 vehicles	6 mg/m <sup>3</sup>

GEORGE R. ARIYOSHI  
GOVERNOR



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

E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS

WALLACE AOKI  
RYOKICHI HIGASHION  
DOUGLAS S. SAKAMO  
CHARLES O. SWANSON

IN REPLY REFER TO:

HWY-PA  
2.29566

June 21, 1976

Mr. James W. Morrow, Director  
Environmental Health  
American Lung Association  
245 North Kukui Street  
Honolulu, Hawaii 96817

Dear Mr. Morrow:

Subject: Second Entrance to Wahiawa  
Project No. 806A-01-73, EIS  
Reference: Your letter of April 7, 1976

Thank you for your review of the project's environmental impact statement.

Our responses to your comments and questions are attached. The item numbers correspond to those expressed in your letter.

We appreciate the time spent by the American Lung Association in reviewing the air quality analysis for the EIS. Your efforts in the interests of clean air for Hawaii are commendable.

Sincerely,

*for R Higashionna*  
E. ALVEY WRIGHT  
Director

Enclosure

State of Hawaii  
Department of Transportation  
Highways Division  
Planning Branch

RESPONSES TO AMERICAN LUNG ASSOCIATION  
LETTER OF APRIL 7, 1976

June 21, 1976

ITEM

- 1, 2 The assumptions and methodology used in preparing the air quality impact analysis for the Wahiawa Second Entrance are described in Appendix D of the EIS. General factors described below may help to clarify the basis of our calculations, and may also explain the differences between the VTN and the American Lung Association estimates.
- a. as indicated in Section B.4 of Appendix D, Supplement No. 5 to AP-42 was not published at the time the EIS was being developed. Consequently, an alternative air quality impact analysis was made.
  - b. The Emissions factor used in determining "local" impact (i.e. concentrations of CO) was the 1975 value from Supplement No. 2 ( $EF_{CO} = 50 \text{ g/mi}$ ). This value was assumed to remain constant over the project life. This approach was felt to be reasonably conservative.
  - c. The factors for mass emissions calculations (i.e. Tables 15 and 16 in the EIS) were also based on Supplement No. 2 with selected speed correction factors. The ADT values used in the Table 15 estimates, however, cannot be directly applied for Alternative A.

For example, the 1977 ADT for Alternative A is 3940 vpd. This rate of traffic flow, however, is not constant over the 2.6 mi. length of the roadway. Turning movements on Rose Street, Uluwehi Place and Leilehua Road require that incremental ADT's and roadway lengths be calculated to determine a design value VMT for air quality estimates.

ITEM

3 Traffic volumes (i.e. ADT's) vary over the length of Alternative A due to turning movements, as noted above. Turning movements do not influence the ADT's used for Alternative B.

4 Meteorological data were obtained from Asheville in a range of statistics. The times of day were from 6:00 - 9:00 a.m. and 3:00 - 6:00 p.m.

Statistics were developed for the following combinations of months:

- a. October, November, December
- b. November, December, January
- c. December, January, February
- d. January, February, March
- e. February, March, April

Worse case conditions were selected from all the data. Therefore, the average frequency of occurrence of Stability Class F does not necessarily correlate with the average occurrence of 0-3 mph wind speed.

As observed by the American Lung Association, the data used in the air quality analysis were actually high and therefore were conservative.

5 The emission factor, meteorological data, and route speeds used in our analysis were felt to be sufficiently conservative to give reasonable estimates of the maximum CO concentrations.

6 No responses required.

7. We agree, the projected traffic on neither Alternate "A" or "B" will cause CO concentrations to exceed State or Federal control levels.

8 Thank you for furnishing the results of your CO measurement.

5401

HAWAIIAN ELECTRIC COMPANY, INC.

Box 2750 / Honolulu, Hawaii / 96803



MAR 15 12 04 PM 1976

RICHARD E. BELL  
MANAGER, ENVIRONMENTAL DEPARTMENT

March 10, 1976

DEPT. OF TRANSPORTATION  
HONOLULU, HAWAII

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

DIRECTOR'S OFFICE  
MAR 12 12 50 PM '76  
DEPT. OF TRANSPORTATION

Gentlemen:

Subject: Environmental Impact Statement  
A Second Entrance to Wahiawa  
Project No. 806A-01-73, dated  
January 30, 1976

The draft Environmental Impact Statement concerning a proposed second entrance to Wahiawa has been reviewed. The only references to electric utilities are found in Chapter 2, Paragraph F on Page 11-9 and in Appendix E, Clearances, Hawaiian Electric Company's letter dated August 27, 1975 and the State Department of Transportation's response thereto dated November 11, 1975.

Our letter of August 27, 1975 inadvertently failed to include pertinent information concerning HECO's future plans in the Army's East Range which might impact on the Alternate "A" of the EIS. We have been negotiating for several years with the Army to obtain agreement for two additional 100-foot wide parallel rights-of-way to accommodate the construction of two new overhead 138kv circuits emanating from our Wahiawa 138kv Substation. These new circuits would be in addition to our existing two 138kv circuits and 47kv circuits in the East Range area.

In late 1974, an agreement was reached for the alignment of these two new rights-of-way. Correspondence to this effect is attached for your information. Please refer to Paragraph "a" of the Army's letter of October 29, 1974 and the attachment thereto.

We are now working on the engineering details required for

Dr. Richard E. Marland  
March 10, 1976  
Page Two

preparation of appropriate metes and bounds description for the easements.

We suggest that the proposing agency review the EIS in the light of these proposed additional facilities.

Thank you for the opportunity to allow us to comment on the draft EIS.

Sincerely yours,



REB: jlp  
Attachment

cc: Mr. E. A. Wright, State Department  
of Transportation



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

HCFE-RE

29 OCT 1974

Hawaiian Electric Co., Ltd.  
ATTN: Mr. Ted M. Damron, Asst Director,  
Land and Rights of Way  
P. O. Box 2750  
Honolulu, Hawaii 96803

Gentlemen:

Reference is made to your letter of July 18, 1974 requesting our comments on the proposed 138KV electric transmission projects affecting Army land. Following are our comments:

a. The Wahiawa-Kuilima 138KV alignment, particularly the portion designated as alignments 2 and 2a on your drawing, is not acceptable to this headquarters. In lieu thereof, an alignment from your sub-station at East Range, Schofield Barracks Military Reservation, following the north east boundary fence line of the reservation is recommended. A topographic map of East Range is inclosed delineating the suggested alternate alignment.

b. The alignment through Kawailoa and Kahuku Training Areas will have a severe impact on aviation safety and this headquarters would like to go on record deeming the alignment as not desirable. However, as the Army is not the owner of the underlying fee property and in the event the alignment is agreed upon by the owners of the property, it is then requested that all poles and/or towers be painted with high visibility day-glo orange paint and the wires be marked with balloon-type markers. Furthermore, request the alignment at Kahuku Training Areas be routed through Oio Gulch to minimize their impact on training and safety.

The alignment through Lower Kipapa is acceptable to this headquarters.

Sincerely yours,

CHARLES S. VARNUM

Colonel, CE

Director of Facilities Engineering

1 Incl  
as

72-67G



3401

MAR 30 1976

HWY-PA  
2.27999

Mr. Richard E. Bell  
Manager, Environmental Department  
Hawaiian Electric Company, Inc.  
Box 2750  
Honolulu, Hawaii 96803

Dear Mr. Bell:

Subject: Second Entrance to Wahiawa  
Project No. 806A-01-73  
Environmental Impact Statement  
Reference: HECO letter dated March 10, 1976

Thank you for advising us of the 138kv circuit rights-of-way through the East Range. While our project is only in the corridor selection phase, we do not foresee any problems with your lines provided high masts or underground wiring is used.

We would appreciate being informed of the rights-of-way description and the design details for the power line.

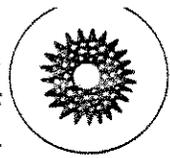
Very truly yours,

T. HARANO  
Chief  
Highways Division

KYA:km

cc: VTN Pacific

DIRECTOR'S OFFICE  
LIFE OF THE LAND  
A GROUP FOR ECOLOGICAL RESEARCH AND ACTION  
RECEIVED  
APR 12 8 27 AM '76  
DEPT. OF TRANSPORTATION  
APR 14 8 41 AM 1976  
DEPT. OF TRANSPORTATION  
HAWAIIAN DIVISION



April 7, 1976

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

*7 Wahiawa*

Dear Mr. Wright:

We have received and have commented on the Environmental Impact Statement for a second entrance to Wahiawa, Project No. 806A-01-73.

The EIS submitted basically a well written report, although there are some flaws in that it does not correspond very closely to the State Environmental Impact Statement Regulations (Environmental Quality Commission, June 2, 1975).

The comments are attached.

Sincerely,

Jeff Storey  
In charge of Review of EIS  
for Life of the Land  
Project No. 806A-01-73

JS/mh



Life of the Land, Hawaii, Comments on  
Environmental Impact Statement (EIS) for  
the Proposed Second Entrance Road to  
Wahiama, Project No. 806A-01-73

1. Comments which follows are areas of concern that should be considered. These comments are specific in nature and give reference to The State Environmental Impact Statement Regulations.
2. a. On page I-3, section c, (Need for Improvement) does not clearly distinguish that the widening of the new bridge would be the present state of the "no-project." In other words, clarify that the "no project alternative is being discussed at the beginning (I-3) not until page II-7 section A. There is no need for such cross reference, which is stated in EQC Regs 1:43.
- b. Also on page I-3, section c, the EIS is not detailed enough on the "no-project" alternative to allow the comparative evaluation of the environmental benefits, costs, and risks. It is specifically stated in EQC Regs 1:42 g.
3. a. On page I-2, fig. -2 H-2 is not identified. The road pattern of fig. -2 is not inkeeping (match) with Fig. -3 and Fig. 4 on page 5 and 6. To make a clear evaluation between the two maps. This is in accordance with EQC Regs 1:92 (b).
- b. Page 1-2. The only fully equipt air monitoring station is at the DOH Building. The closest to Wahiama is Pearl City which is much too far to be effective. In accordance with EQC Regs 1:42 f.
4. a. In the whole of chapter 4, there is no mention of the impacts of "no-project" alternative to compare with alternative A and B. The EIS states on page II-7, section D that the "no-project" alternative is a continuation of existing situation to which alternatives A and B are compared. Hence we would conclude that the "no-project" alternative would be repeatedly compared with A and B alternatives throughout the EIS. But, the EIS fails to compare the "no-alternative" project further. The EIS does not comply with EQC Regs 1:426.

- b. Also in Chapter 4 the discussion of Alternative A state "no adverse effect" on the Reservoir, and "no adverse effect" on ground water from alternative B. How were these assumptions arrived at?
  - c. The EIS on page IV-G states: "The Motor vehicle emissions from a second entrance to Wahiamā will contribute CO, HC, and NO<sub>x</sub> (SO<sub>2</sub> and particulates to a lesser extent) to the airshed around Wahiamā." To a lesser extent of what? The last highway (which is the only other major air pollutant in the area.)
  - d. What will happen to air quality if more people are attracted even if the emissions is distributed?
  - e. Air Quality should be more concentrated than rough tons per year. Also where are the figures from?
  - f. IV-18. Alternative A would open access to the east in Wahiamā. If so all noise pollution figures are wrong. This would tend increase population which is a major impact on the environment. In accordance with EOX Regs 1:47 c,e.
9. There is no real discussion of alternative "no-project," on noise, air quality, water quality, with population growth used.

GEORGE R. ARIYOSHI  
GOVERNOR



E. ALVEY WRIGHT  
DIRECTOR

DEPUTY DIRECTORS  
WALLACE AOKI  
RYOKICHI HIGASHIONNA  
DOUGLAS S. SAKAMOTO  
CHARLES O. SWANSON

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

IN REPLY REFER TO:

HWY-PA  
2.29238

June 10, 1976

Mr. Jeff Storey  
Life of the Land  
404 Piikoi Street  
Honolulu, Hawaii 96814

Dear Mr. Storey:

Subject: Second Entrance to Wahiawa  
Project No. 806A-01-73, EIS  
Reference: Your letter dated April 7, 1976

Thank you for your review of the project's environmental impact statement.

We have the following response to your comments:

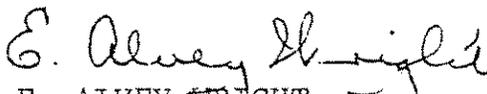
1. Comment No. 2 - The Revised EIS will more clearly describe the present condition and the impacts of the "no project" alternative.
2. Comment No. 3 - Interstate Route H-2 is identified on Figure 2, and the road pattern is consistent with Figures 3 and 4.
3. Comment 4a - See response to comment No. 2.
4. Comment No. 4b - The water resource impacts of Alternatives A and B are not expected to pose significant adverse effects on the ecosystems or beneficial uses of Wahiawa Reservoir. These observations are based on the characteristics of ground and surface waters described in Chapter 3 of the DEIS, and on the assumption that approved design and construction standards and criteria will be adhered to in the project.

5. Comment No. 4c - Emissions of SO<sub>2</sub> and particulates from motor vehicles are relatively small compared with CO, HC, and NO<sub>x</sub> emissions. The combined SO<sub>2</sub> and particulate emissions from motor vehicles are generally less than 1 percent of total mass emissions.
6. Comment No. 4d - Motor vehicles will continue to contribute pollutant burdens to the airshed of Wahiawa. The actual concentrations of pollutants for which standards have been established are difficult to assess owing to continuing changes in the attainment dates for Federal Emission Standards, and to modified traffic characteristics in the region.
7. Comment No. 4e - Appendix D of the DEIS describes the methodology used in developing the air quality impact analysis. The rationale for estimating concentrations of CO and not HC and NO<sub>x</sub> is explained in Section A of Appendix D.
8. Comment No. 4f - Noise level predictions in the DEIS were based on the traffic data generated as part of the preliminary design of the roadway (see Table 1, Chapter 2).

Population growth in the Wahiawa area is constrained by the current land uses (i.e. Schofield, East Range, and existing residential), and by natural features (i.e. Wahiawa Reservoir). The effect of the second entrance roadway would be more to accommodate intra-community movement than to induce inter-community movement and growth.

9. Comment No. 9 - See response to Comment No. 2.

Sincerely,

  
E. ALVEY WRIGHT  
Director



Mililani Town Association

95-400 Ikafoa Street  
Mililani Town, Hawaii 96789

March 29, 1976

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

Dear Sirs:

The Board of Directors at its regular monthly meeting of March 17, 1976, discussed the second entrance to Wahiawa town. It was the consensus of the Board that a second entrance to Wahiawa was indeed desirable. The Board was unanimous in its objection to have this entrance affect, in any way, the Botanical Gardens in Wahiawa. Any entrance, therefore, not passing over or through the Botanical Gardens would be acceptable to the Mililani Town Association.

Very sincerely yours,

Paul Peters  
Manager

PP:ry

cc: Warren Ferreira, President of MTA

April 13, 1976

HWY-PA  
2.28357

Mr. Paul Peters  
Manager  
Mililani Town Association  
95-400 Ilaloa Street  
Mililani Town, Hawaii 96789

Dear Mr. Peters:

Subject: Second Entrance to Wahiawa  
Project No. 606A-01-73

Thank you for advising us of the Mililani Town Association's position on the subject project.

Although we had once considered a proposal to extend Rose Street across the Wahiawa Botanical Gardens to Kilani Avenue, we have since decided that its environmental impact would be too severe to tolerate. Thus, we are no longer considering nor will we support any intrusion into the Botanical Gardens.

Sincerely,

*R. Higashimura*  
for E. ALVEY WRIGHT  
Director

KYA:ft

cc: VIN Pacific

# Trinity Lutheran Church

1611 CALIFORNIA AVENUE  
WAHIAWA, HAWAII 96786  
PHONE: 621-9038

ROBERT F. MEYER, PASTOR  
WAYNE H. DELVENTHAL, PRINCIPAL

March 30, 1976

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

RE: Comments based upon the Environmental Impact Statement  
on a Second Entrance to Wahiawa (806A-01-73)

Dear Mr. Wright:

I am here representing the 78 families of Trinity Lutheran Church in Wahiawa. We are strongly opposed to alternate A which includes Uluwehi Place as an access road. Our reasons for this opposition are as follows:

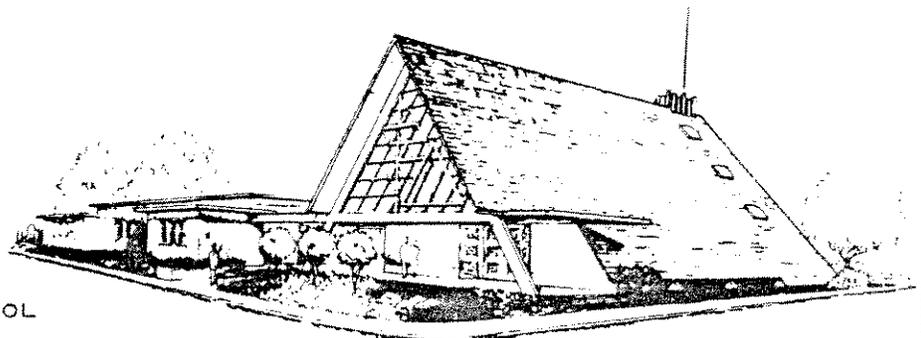
1. The City and County of Honolulu, Department of Transportation Services stated that utilizing Uluwehi Place as one of the access roads for alternate A will create additional traffic problems. This roadway will not be adequate to safely accomodate the projected traffic. Despite this concern of the Department of Transportation Services, it appears that no proposal is included in the E.I.S. which states how Uluwehi will be modified to make it safe. (Consider insert #1.)

2. Our church building is next to Uluwehi Avenue. The additional air and noise pollution would cause the church to have to make major investments in the area of enclosing the building and soundproofing to prevent noise interference with our church worship services.

3. On weekdays we have the following numbers of children attending our church school and their grade levels:

K - 26	3 - 29	6 - 29
1 - 29	4 - 25	7 - 53
2 - 29	5 - 24	8 - 30

Total: 274 students



TRINITY CHURCH AND SCHOOL

E.A. Wright

Page Two

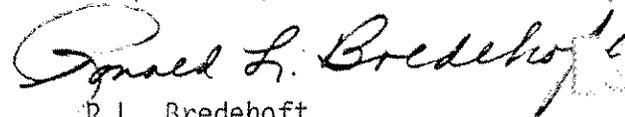
March 30, 1976

For next year (76 - 77) we anticipate that over 300 students will be enrolled. The children will face additional noise and pollution disruption of their studies and additional safety hazards from the increased traffic.

4. Obviously your cost estimates for the alternates do not include any monies for changes to the access roads. Even without these needed costs, the annual benefits on a benefit/cost ratio favor alternate B.

We of Trinity Lutheran Church wish to again emphasize that we are opposed to an alternate A which includes Uluwehi Avenue as an access road.

Respectfully submitted,



R.L. Bredehoft,  
Chairman, Church Council

RLB:njf

Enc.

Insert #1

We have attached some additional photographs of Uluwehi Avenue indicating:

1. The proximity to our church building.
2. The limited width of the street. Especially when cars are parked along the street, the street is reduced to a one lane street.



3328

DIRECTOR'S OFFICE

RECEIVED

APR 22 1 00 PM '76

APR 23 9 04 AM 1976

DEPT. OF  
TRANSPORTATION

DEPT. OF  
TRANSPORTATION

1803 Laniloa Pl  
Wahiawa Hi 96786  
April 20, 1976

Admiral Alvey Wright, Director  
Department of Transportation  
869 Punchbowl Street  
Honolulu Hi 96813

Dear Admiral Wright,

I was not able to attend the public hearing today at Kaala Elementary School and therefore request that my testimony be entered as comments on the draft environmental impact statement on the Second Entrance to Wahiawa.

Should i be able to be of any further help please feel free to call me at 5484286.

Very truly yours,

*Francis T. Tanaka*  
Francis T. Tanaka

Dear Sir:

My name is Francis Tanaka a resident owning a house at 1803 Laniloa Place. I am in favor of Alternate A and I request your consideration of my comments in the final corridor selection.

On page III-18 of your Environmental Impact Statement, you have a table of design noise level/land use relationships. It is my belief that the Community Noise Control for Oahu regulations signed by the Governor on February 10, 1976 should be the criteria for design noise levels. Under this code noise levels should be between 7 a.m. to 10 p.m. 55 dBA and between 10 p.m. and 7 a.m. 45 dBA. This noise level would be at the fence line. My home is adjacent to sound level measurement site 8 which your EIS shows has a 38-53 dBA at 1800 hours and a 31-40 dBA noise level at 0655 hours. I suggest that the road be moved south to maintain the noise levels the residents along the fence are accustomed to.

The clearance from the Coordination of Highway Projects with the Land and Natural Resources Interests requests that the mature trees be plotted and that design of the roadway be designed to minimize the clearing of mature trees. The present alignment from point 85 + 00 to point 98 + 00 as shown on Figure B-5 goes through a heavily wooded gulch. Relocation of the road further south following the existing gravel road would avoid the destruction of many mature trees as requested by the Department of Land and Natural Resources. I am sure if you traverse the suggested route you will find it to be much more scenic as compared to your present alignment of Alternate A.

Mr. Francis T.T. Tanaka  
Page 2

HWY-PA 2.29401

Thank you for your interest in this project.

Sincerely,

*R Higashionna*

*for*

E. ALVEY WRIGHT  
Director

III. PERSONS TESTIFYING AT THE APRIL 20, 1976 PUBLIC HEARING

Mr. Ronald L. Bredehoft (Trinity Lutheran Church)  
Mr. Karl K. Saiki (Rep. California Ave. property owner)  
Ms. Cheryl Tom  
Mr. John Parker  
Mr. Terry Adaniya  
Dr. David Tien  
Mr. Gerald Coreilly  
Mr. Walter Kraynik  
Mr. Roy Mitsuka  
Ms. Annie K. Lopez  
Mr. Wil Kranz  
Ms. Nancy Moore  
Mr. Gerald Raddick  
Mr. William Delventhal (Trinity Lutheran School)  
Mr. Eugene Neal

STATEMENTS SUBMITTED AFTER THE HEARING

Mr. F.C. Gross (Waialua Sugar Co.)  
Mr. Louis Kaonohi Jr.  
Mr. Robert Galbraith  
Mr. Ross Miyamoto  
Mr. F.F. Dillard, Jr. (Del Monte Corp.)  
Mr. Lloyd Sako

#### IV. SUMMARY OF ENVIRONMENTAL CONCERNS

The following is a point-by-point summary of comments received on the Draft EIS and expressed at the public hearing that relate to the environmental effects of the proposed second entrance. Many comments related primarily to project design and other engineering concerns, and are therefore summarized in the Engineering Report. The comments are arranged by subject and are followed by a reference to a revision of the EIS text or a response in a Department of Transportation letter.

1. Safety Hazard. A major concern of residents on Rose, Uluwehi and Leilehua Streets, the original Alternative A connectors, was the increase in through traffic on these currently dead-end neighborhood streets. Uluwehi Street would have been especially hazardous due to its constricted right-of-way, and has therefore been dropped as a connector. (Comment; Department of Housing and Urban Development, Trinity Lutheran Church, Mr. Adaniya, Mr. Delventhal, Mr. Mitsuka, Mr. Miyamoto, Ms. Moore, Dr. Tien. Response; Pages IV-20, 21, 26, 27, H-57 and H-58.)
2. Noise. The disruptive noise of increased traffic on the residences and schools affected by Alternatives A and B received much attention. Requests were made for more noise protection information and better mitigation measures. (Comment; Army Headquarters, Office of Environmental Quality Control, University of Hawaii, Life of the Land, Mr. Adaniya, Ms. Moore, et. al. Response; Pages III-18, 20, IV-11, 14, C-1, H-27, 45, 48 and 76.)
3. Air Pollution. Questions were raised on the technical approach of the air quality assessment, and additional data was requested on impacts. (Comment; American Lung Association, QEQC, Life of the Land, Mr. Tanaka, Dr. Tien, et. al. Response; Pages III-13, IV-8, D-1, H-45, 64, 76 and 100.)
4. Life-Style. The combined effects of increased traffic, noise and air pollution on the life-style and well being of residents on affected streets was considered to be a major social cost of Alternatives A and B. (Comment; Army Headquarters, Mr. Adaniya, Mr. Coreilly, Mr. Sako, Dr. Tien, et. al. Response; Pages IV-21 and H-28.)

5. Wahiawa Reservoir. Details on the effects of the project alternatives on the water quality, flow characteristics and fish habitat in Wahiawa Reservoir were requested. The Waialua Sugar Company (owners of the reservoir) expressed the belief that impact on the reservoir would be negligible. (Comments; Office of Environmental Quality Control, University of Hawaii, Life of the Land, Waialua Sugar Company, Ms. Tom. Response; Pages IV-3, 4, 5, H-45 and 85.)
6. Vegetation. Details were requested on the existing vegetation in the study corridors and an estimate of the number of trees that would be removed. (Comments; Army Headquarters, QEQC, Mr. Kaonohi, Mr. Tanaka. Response; Pages III-20, IV-16 and H-99.)
7. Visual. An expanded discussion of the visual impact of Alternative B on the Wahiawa Reservoir fishing area was requested. (Comment; Army Corps of Engineers, QEQC. Response; Pages III-25 and IV-25.)
8. EIS Content. Expansion of several sections of the EIS was requested. Specifically, the coverage of the "No Project" Alternative, secondary impacts, and required approvals and clearances. (Comment; Army Corps of Engineers, QEQC, Life of the Land. Response; Pages II-7, IV-28, V-3,

In general, the persons commenting on the project favored a second entrance into Wahiawa, although several suggested that the project be delayed until the effects of the new Wilson Bridge could be evaluated (this suggestion was applauded at the public hearing). The only seriously overriding environmental concern expressed was the safety hazard created by increased traffic on Uluwehi Place. This connection has therefore been dropped from the proposed alignment.

