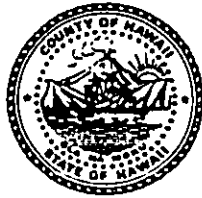


Stephen K. Yamashiro
Mayor



Waichu Kou Phase 2
Native Ham. Housing

Donna Fay K. Kiyosaki
Chief Engineer

Jiro A. Sumada
Deputy Chief Engineer

County of Hawaii RECEIVED

DEPARTMENT OF PUBLIC WORKS
25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

APR 15 P2:34
HFG. 0
QUALITY CONTROL

April 23, 1998

**SUBJECT: KUAKINI HIGHWAY IMPROVEMENTS BETWEEN PALANI AND HUALALAI ROADS
KAILUA-KONA, HAWAII, COUNTY OF HAWAII
FINAL ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT**

Thank you for your time and effort in reviewing and providing comments on the Kuakini Highway Improvements project. We appreciate these comments because they lead to a better project.

We have attached a copy of the project's Final Environmental Assessment (EA). In Section 3 of the EA, you will find a copy of your letter immediately followed by a response. The comments and responses are numbered to associate the points made in your letter with the correct response.

As described in Section 4 of the EA, the County of Hawaii, Department of Public Works, issued a Finding of No Significant Impact (FONSI) for this project on April 9, 1998, based on a comparison of project impacts in relation to the Significance Criteria specified in Section 11-200-12(b) of the Hawaii Administrative Rules. The Hawaii Division of the Federal Highway Administration (FHWA) has also issued a FONSI.

Again, thank you for participating in the planning of this project. If you have any questions, you may contact Mr. Thomas Pack of our Engineering Division, Kona Office, at (808) 327-3530.

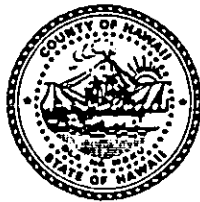
A handwritten signature in black ink, appearing to read "Donna Fay K. Kiyosaki".

DONNA FAY K. KIYOSAKI, P.E.
Chief Engineer

Enclosures

44

Stephen K. Yamashiro
Mayor



*Kuakini Hwy. Improvements
between Palani + Hualalei Rds.*

Donna Fay K. Kiyosaki
Chief Engineer

Jiro A. Sumada
Deputy Chief Engineer

County of Hawaii

RECEIVED

DEPARTMENT OF PUBLIC WORKS APR 13 A9:23

25 Aupuni Street, Room 202 • Hilo, Hawaii 96720-4252
(808) 961-8321 • Fax (808) 961-8630

OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

April 9, 1998

MR GARY GILL
DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET SUITE 702
HONOLULU HI 96813

SUBJECT: KUAKINI-HIGHWAY IMPROVEMENTS BETWEEN PALANI AND
HUALALAI ROADS
Kailua-Kona, Hawaii County, Hawaii
Finding of No Significant Impact (FONSI)

The County of Hawaii, Department of Public Works (DPW) has reviewed the comments received on the subject project during the 30-day public comment period which was initiated on July 8, 1997. The DPW has determined that this project will not have significant environmental effects and has issued a FONSI. Please publish this notice in the April 23, 1998 edition of the OEQC Environmental Notice. We have enclosed the following attachments for processing by OEQC:

- Four copies of the Final Environmental Assessment (EA) for the proposed Kuakini Highway Improvements Between Palani and Hualalai Roads, Kailua-Kona, Hawaii County, Hawaii; and
- OEQC Publication Form and project summary (hard copy). The summary will be e-mailed to your office by our consultant.

The Final EA also meets provisions of the National Environmental Policy Act (NEPA) because of participation by the Federal Highway Administration (FHWA). The 30-day NEPA public comment period was initiated on March 8, 1998. The FHWA has also determined that this project will not have significant environmental effects and has issued a FONSI. A copy of the FHWA FONSI statement is enclosed for your information.

MR GARY GILL
April 9, 1998
Page 2

We will be sending copies of the Final EA to the agencies, organizations and individuals who provided written comments.

The following permits and approvals will have to be obtained before construction begins:

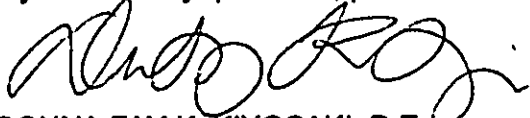
County

- Grading Permit (Hawaii County Department of Public Works)
- Dig Up Street Permit (Hawaii County Department of Public Works)

State

- National Pollutant Discharge Elimination System (NPDES) Permit for the Discharge of Storm Water Associated with Construction Activity (State Department of Health)
- Underground Injection Well Permit Class V, Subclass C (State Department of Health)
- Noise Permit if construction noise is expected to exceed allowable levels (State Department of Health)
- Coastal Zone Management Consistency Determination (Department of Business, Economic Development and Tourism)

If you have any questions, please contact Mr. Thomas Pack at (808) 327-3530.



DONNA FAY K. KIYOSAKI, P.E.
Chief Engineer

Enclosures

- cc. Mr. Kevin Ito, State of Hawaii Department of Transportation, Highways Division,
w/o attachments
Ms. Richelle Suzuki, Federal Highway Administration, w/o attachments
Mr. Clyde Shimizu, Parsons Brickerhoff Queade & Douglas, Inc., w/o attachments

1998-04-23-HI-PEA-Kuakini Highway
Improvements between Palani & Hualalai
April 1998

APR 23 1998
FILE COPY
Roads

**KUAKINI HIGHWAY IMPROVEMENTS
BETWEEN PALANI AND HUALALAI ROADS
KAILUA-KONA, HAWAII COUNTY, HAWAII**

**Final
Environmental Assessment**

Submitted Pursuant to the
National Environmental Policy Act (NEPA)
42 U.S.C. 4332 (2)(c)
and
Hawaii Revised Statutes (HRS)
Chapter 343

by the

U.S. Department of Transportation
Federal Highway Administration

State of Hawaii, Department of Transportation
Highways Division

County of Hawaii
Department of Public Works

The following persons may be contacted for additional information concerning this document:

Abraham Wong, Division Administrator
Federal Highway Administration
P.O. Box 50206
Honolulu, Hawaii 96850
(808) 541-2700

Kazu Hayashida, Director
State Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813
(808) 587-2150

Donna Fay K. Kiyosaki, Chief Engineer
Hawaii County Dept. of Public Works
25 Aupuni Street
Hilo, Hawaii 96720
(808) 961-8327

This environmental assessment (EA) documents environmental studies, agency and public comments, and responses to those comments on a proposal to improve Kuakini Highway from its intersection with Palani Road to its intersection with Hualalai Road, Kailua Village, Hawaii County, Hawaii. This document is the "Final" EA under the provisions of HRS Chapter 343 and Chapter 200 of the Hawaii Administrative Rules, since a "Draft" EA was previously distributed for agency and public comments in July, 1997. An EA satisfying the requirements of the National Environmental Policy Act (NEPA) was announced on March 8, 1998. Findings of No Significant Impact (FONSI) are being rendered by the County of Hawaii, Department of Public Works and the Federal Highway Administration. The bases of these FONSI are presented in Section 4 of this document.

1998-04-23-HI-PEA-Kuakini Highway
Improvements between Palani & Hualalai
April 1998

APR 23
FILE COPY
Roads

**KUAKINI HIGHWAY IMPROVEMENTS
BETWEEN PALANI AND HUALALAI ROADS
KAILUA-KONA, HAWAII COUNTY, HAWAII**

**Final
Environmental Assessment**

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General Reviewer Information

In compliance with the Metric Conversion Act of 1975 (amended in 1988) and a 1991 Presidential Executive Order, numbers throughout this EA are presented in metric units with the English equivalents in parentheses.

General Reviewer Information

In compliance with the Metric Conversion Act of 1975 (amended in 1988) and a 1991 Presidential Executive Order, numbers throughout this EA are presented in metric units with the English equivalents in parentheses.



8/97 KAILUA-KONA

On Kuakini Hwy at Hualalai
looking south to Palane Rd.

Note Kona Ranch House in
center background (gray bldg.),
which is at Palane Rd.



8/97 ZONA

On Keakini Hwy at Palani
looking north to Hualalai.

Note Siam trees on right side of
hwy in center background, which are
at Hualalai.

Lava Ranch House is on left side
just past Shell Station

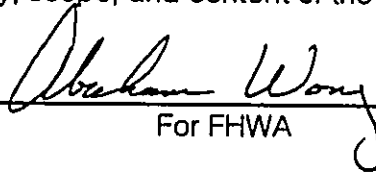
FEDERAL HIGHWAY ADMINISTRATION
FINDING OF NO SIGNIFICANT IMPACT

For
Kuakini Highway Improvements
Between Palani and Hualalai Roads
Kailua-Kona, Hawaii County, Hawaii

The FHWA has determined that the Partial Width Widening Alternative will have no significant impact on the human environment. This FONSI is based on the attached EA, which has been independently evaluated by the FHWA and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an EIS is not required. The FHWA takes full responsibility for the accuracy, scope, and content of the attached EA.

APR 08 1999

Date


For FHWA

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**KUAKINI HIGHWAY IMPROVEMENTS
BETWEEN PALANI AND HUALALAI ROADS
KAILUA-KONA, HAWAII COUNTY, HAWAII**

**Final
Environmental Assessment**

Submitted Pursuant to the
National Environmental Policy Act (NEPA)
42 U.S.C. 4332 (2)(c)
and
Hawaii Revised Statutes (HRS)
Chapter 343


by the

U.S. Department of Transportation
Federal Highway Administration

State of Hawaii, Department of Transportation
Highways Division

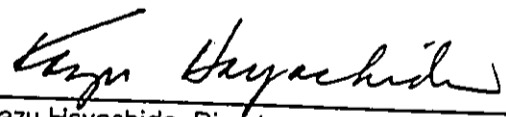
County of Hawaii
Department of Public Works

April 8, 1998
Date of Approval



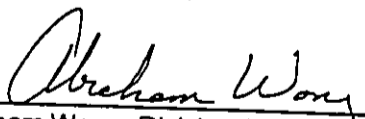
Donna Fay K. Kiyosaki, Chief Engineer
County of Hawaii Department of Public Works

April 8, 1998
Date of Approval



Kazu Hayashida, Director
Department of Transportation

APR 08 1998
Date of Approval



Abraham Wong, Division Administrator
Federal Highway Administration

The following persons may be contacted for additional information concerning this document:

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(808) 587-2150

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Hilo, Hawaii 96720
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EXECUTIVE SUMMARY

This Environmental Assessment (EA) is a joint publication of the County of Hawaii Department of Public Works (DPW), the State of Hawaii Department of Transportation, Highways Division (SDOT) and the U.S. Department of Transportation, Federal Highway Administration (FHWA). This document satisfies the requirements of Chapter 343 of the Hawaii Revised Statutes (HRS); Title 11, Chapter 200 of the Hawaii Administrative Rules (HAR); the National Environmental Policy Act (NEPA); and the rules and regulations of the U.S. Department of Transportation (23 CFR 771). The accepting authorities of this EA are the DPW and the Hawaii Division of the FHWA. This document is the "Final" EA under provisions of HRS Chapter 343 and HAR Chapter 200 since a "Draft" EA was previously announced and distributed for agency and public comments in July, 1997. An EA prepared under the rules and regulations of NEPA and 23 CFR 771 was announced on March 8, 1998.

S.1 Project Description

The DPW, in cooperation with SDOT and FHWA, proposes to widen to four through lanes a 0.8 km (half mile) segment of Kuakini Highway in Kailua Village (also referred to as "Kailua-Kona") from its intersection with Palani Road to its intersection with Hualalai Road. The project location is shown in Figure S-1.

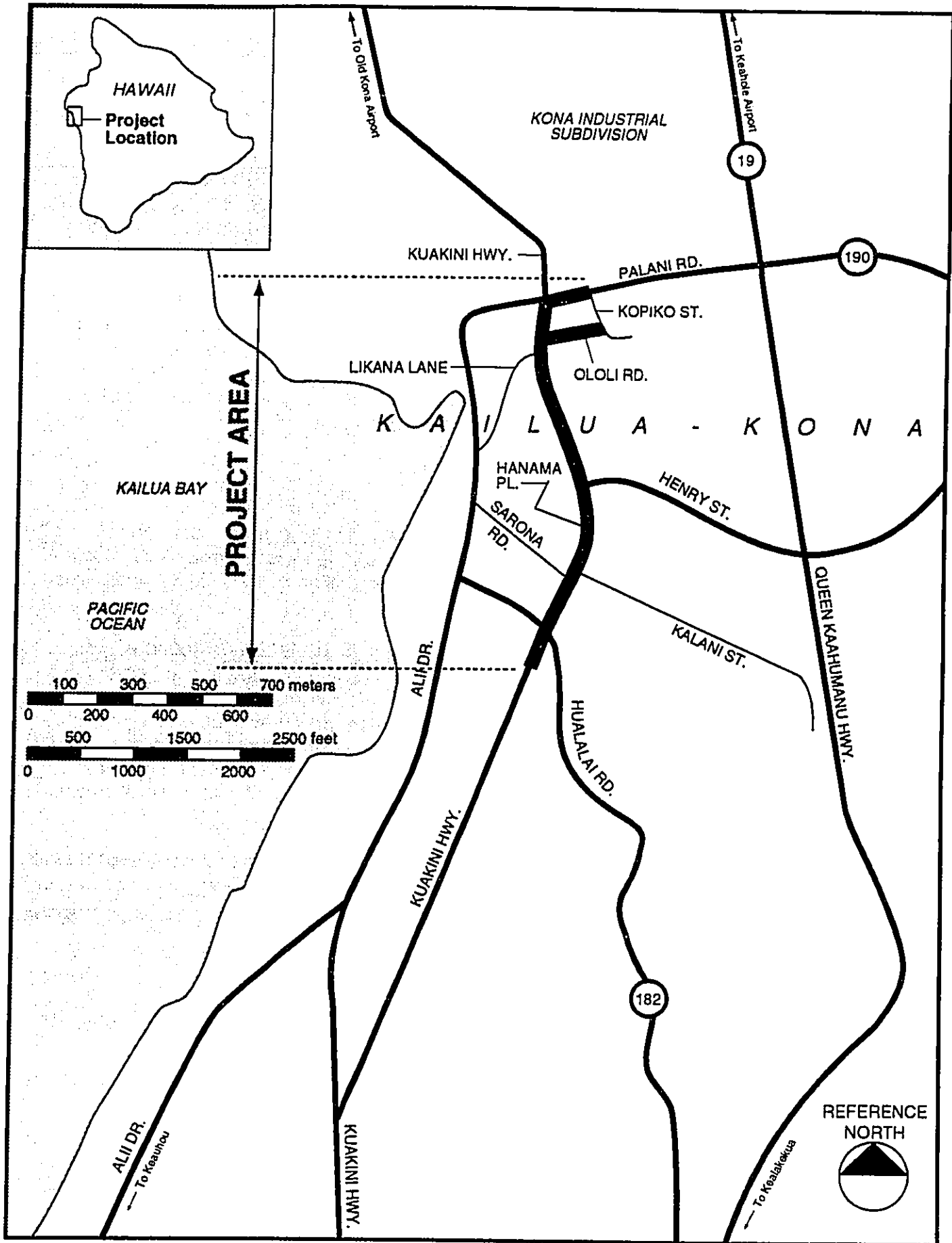
The proposed project also includes a left turn pocket approximately 100 m (300 ft) northeast along Palani Road, a transition section extending approximately 60 m (200 ft) southeast of the highway's junction with Hualalai Road, and a connection between Ololi Road and Kopiko Street. Other features of the project include repaving, new drainage structures, additional lighting, continuous sidewalks on both sides of the highway, synchronized traffic signals, and bike lanes. The project will take place within the existing 24 m (80 ft) County right-of-way so no property acquisition will be required. The posted speed limit following the improvements will remain 40 km/h (25 mph).

Kuakini Highway presently consists of two lanes with median left-turn lanes at most intersections. Traffic congestion normally occurs during the midday and afternoon peak periods.

The project is listed in the 1997 State Transportation Improvement Program (STIP). Design funds will be requested for fiscal year (FY) 1998 and construction funds for FY 1999. Eighty percent of the \$6.5 million estimated construction cost will be federally funded. Hawaii County will fund the remaining 20 percent of the cost. Construction is anticipated to begin in early 1999 and be completed in approximately 12 months.

S.2 Purpose and Need

The proposed project implements the recommendations for improvements to Kuakini Highway contained in the Master Plan for Kailua-Kona (April 1994) and the Island of Hawaii Long Range Highway Plan (May 1991) (Long-Range Plan). Both planning documents selected



Location Map
KUAKINI HIGHWAY IMPROVEMENTS BETWEEN PALANI AND HUALALAI ROADS
 Environmental Assessment
 FIGURE S-1

project limits between Palani Road and Hualalai Road because this portion of Kuakini Highway transits the commercial part of town and is the most congested. Based on projections in the Long-Range Plan, daily traffic volume on Kuakini Highway will grow substantially, with existing capacity estimated to be exceeded in the year 2003.

In addition, sidewalks do not currently exist in many areas along Kuakini Highway, and there are *no bicycle facilities* even though the highway is used by bicyclists.

The proposed project will implement the recommendations for Kuakini Highway contained in the current community and transportation plans for Kailua-Kona, relieve existing traffic congestion, accommodate projected future traffic demand, and improve the safety of pedestrians and bicyclists using the highway.

S.3 Alternatives

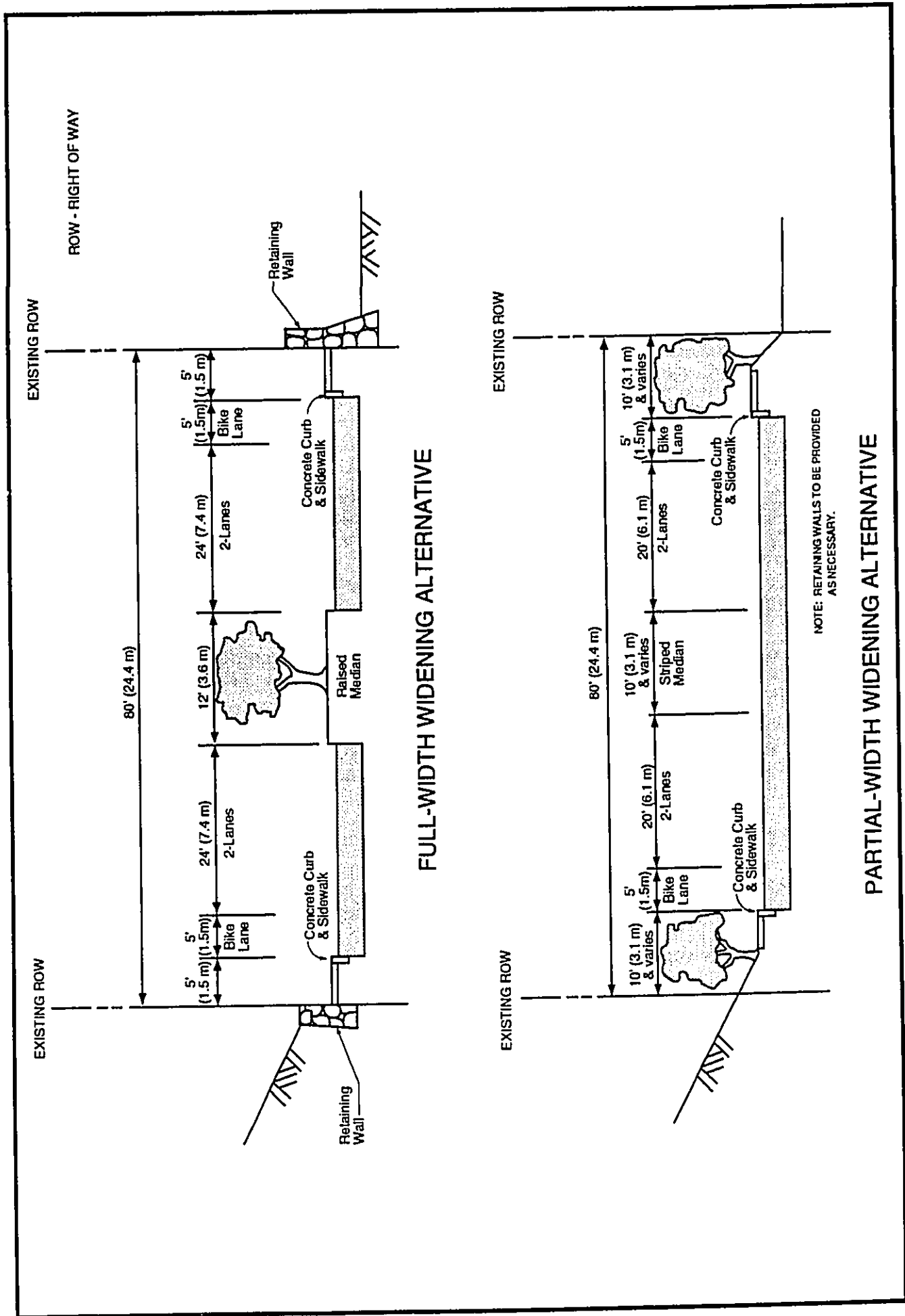
Three project alternatives were considered: No-Build, Transportation System Management (TSM), and highway widening. The No-Build Alternative provides the reference against which to measure the environmental impacts of the proposed project. The TSM alternative includes options such as alternative modes of transportation (e.g., mass transit) and traffic signal synchronization. However, the TSM options considered were judged to be inadequate in addressing the project's purpose and need.

Two design concepts for widening the highway within the existing corridor were explored: a full-width widening that would span the existing right-of-way and a partial width widening that would use only a portion of the right-of-way (see Figure S-2). The partial-width widening configuration will have fewer impacts on adjacent properties, will preserve most of the existing trees, and was the more favorable alternative based on public input. Therefore, this alternative was selected by the DPW as the preferred alternative.

S.4 Impacts and Mitigation

This EA evaluates the impacts of the proposed Kuakini Highway Improvements and the impacts of doing nothing (No-Build Alternative). Table S-1 summarizes the environmental and social impacts of the proposed project and the No-Build Alternative. The project is not expected to generate substantial adverse impacts when compared to the No-Build condition, mainly because the project will not require additional right-of-way. Beneficial impacts are anticipated, including:

- substantially less traffic delay to motorists using the highway;
- traffic demand through the design year (2020) will be accommodated;
- substantially increased safety for pedestrians and bicyclists;
- after construction, improved conditions for businesses adjacent to the highway because of improved transportation service for their customers; and
- improvement of regional air quality in Kailua-Kona because of reduced traffic congestion.



Typical Sections of Widening Alternatives
KUAKINI HIGHWAY IMPROVEMENTS BETWEEN PALANI AND HUALALAI ROADS
 Environmental Assessment
FIGURE S-2

**Table S-1
Summary of Environmental Impacts**

Discipline	No-Build Alternative	Proposed Project
WATER RESOURCES AND DRAINAGE	<p><u>Construction Impacts</u> None.</p> <p><u>Operational Impacts</u> Pollutant loading of nearby Kailua Bay would increase due to increased regional traffic. Project area would continue to experience flooding problems until regional drainage improvements are made.</p> <p><u>Mitigation</u> None required.</p>	<p><u>Construction Impacts</u> Sediment discharge to nearby Kailua Bay could occur without mitigation measures.</p> <p><u>Operational Impacts</u> Similar to the No-Build Alternative. However, the project will improve Kuakini Highway drainage because dry wells will be constructed.</p> <p><u>Mitigation</u> An approved erosion and sediment control plan will be prepared prior to construction and implemented during construction. Construct drainage improvements identified in the proposed project.</p>
SOLID AND HAZARDOUS WASTE	<p><u>Construction Impacts</u> None.</p> <p><u>Operational Impacts</u> None.</p> <p><u>Mitigation</u> None required.</p>	<p><u>Construction Impacts</u> Spoil and debris will be produced during construction. Encountering contaminated soil is not expected, even though there are underground storage tanks containing petroleum product in the vicinity of the project area.</p> <p><u>Operational Impacts</u> None.</p> <p><u>Mitigation</u> Construction spoil and debris will be transported to approved disposal sites. If contaminated soil is encountered, remediation and disposal will be implemented in coordination with the State Department of Health.</p>
FLORA	<p><u>Construction Impacts</u> None.</p> <p><u>Operational Impacts</u> None.</p> <p><u>Mitigation</u> None required.</p>	<p><u>Construction Impacts</u> Removal of some vegetation within the right-of-way, including some Manila palm trees and Mahogany trees located within the median of Palani Road.</p> <p><u>Operational Impacts</u> None.</p> <p><u>Mitigation</u> A landscaping plan will be prepared, which will include the transplanting of affected trees. The preferred alternative will preserve most mature trees along the edge of the right-of-way.</p>
SCENIC RESOURCES	<p><u>Construction Impacts</u> None.</p> <p><u>Operational Impacts</u> None.</p>	<p><u>Construction Impacts</u> Construction equipment and activities will temporarily distract from attractive setting.</p> <p><u>Operational Impacts</u> The widened roadway will change the "country road ambiance" of the existing highway. Western (mauka) and eastern (makai) viewplanes will be unaffected.</p>

**Table S-1
Summary of Environmental Impacts
(Continued)**

Discipline	No-Build Alternative	Proposed Project
SCENIC RESOURCES (cont.)	<u>Mitigation</u> . None required.	<u>Mitigation</u> . A landscaping plan will be prepared and implemented. The plan will include the transplanting of affected trees.
AIR QUALITY	<p><u>Construction Impacts</u>. None</p> <p><u>Operational Impacts</u>. Minor increase in regional CO, NOx, and hydrocarbon levels. At the microscale level, CO concentrations would be similar to current conditions, exceeding State standards during worst-case conditions.</p> <p><u>Mitigation</u>. None</p>	<p><u>Construction Impacts</u>. Temporary increase in fugitive dust from construction activities and CO concentrations from traffic congestion and construction equipment exhaust.</p> <p><u>Operational Impacts</u>. Decrease in regional CO, NOx, and hydrocarbon levels when compared to the No-Build Alternative. Microscale impacts similar to the No-Build Alternative.</p> <p><u>Mitigation</u>. Implement dust controls during construction, such as water trucks and re-vegetating disturbed land.</p>
NOISE	<p><u>Construction Impacts</u>. None.</p> <p><u>Operational Impacts</u>. Slightly lower noise levels because of lower average vehicle speeds due to congestion.</p> <p><u>Mitigation</u>. None required.</p>	<p><u>Construction Impacts</u>. Increased noise levels from construction equipment.</p> <p><u>Operational Impacts</u>. Slightly higher noise levels. However, noise levels will not exceed FHWA noise abatement criteria, nor will there be a substantial increase in noise according to SDOT Noise Policy.</p> <p><u>Mitigation</u>. None required.</p>
SOCIAL AND ECONOMIC	<p><u>Construction Impacts</u>. None</p> <p><u>Operational Impacts</u>. Increasing congestion on Kuakini Highway will adversely affect businesses.</p> <p><u>Mitigation</u>. None required.</p>	<p><u>Construction Impacts</u>. Adjacent businesses may experience temporary loss of revenue due to construction-related impacts. Creation of construction jobs and infusion of federal and county construction funds.</p> <p><u>Operational Impacts</u>. The project will not have any residential or business displacements, nor will any neighborhood be adversely affected. Upon completion, the project will provide improved transportation service that will benefit businesses.</p> <p><u>Mitigation</u>. See transportation mitigation above.</p>
LAND USE	<u>Construction Impacts</u> . None.	<u>Construction Impacts</u> . Approximately 0.6 ha (1.5 acres) of open space within the right-of-way will be covered by pavement.

**Table S-1
Summary of Environmental Impacts
(Continued)**

Discipline	No-Build Alternative	Proposed Project
LAND USE (cont.)	<p><u>Operational Impacts.</u> None.</p> <p><u>Mitigation.</u> None required.</p>	<p><u>Operational Impacts.</u> Facilitates implementation of applicable land use plans, including the <u>Master Plan for Kailua-Kona.</u></p> <p><u>Mitigation.</u> None required.</p>
UTILITIES	<p><u>Construction Impacts.</u> None.</p> <p><u>Operational Impacts.</u> None.</p> <p><u>Mitigation.</u> None required.</p>	<p><u>Construction Impacts.</u> Relocation of existing utilities will cause temporary loss of service.</p> <p><u>Operational Impacts.</u> None.</p> <p><u>Mitigation.</u> Coordination with utility providers will occur. Notification procedures and careful scheduling of utility disruptions will be implemented.</p>
ARCHAEOLOGICAL AND HISTORIC	<p><u>Construction Impacts.</u> None.</p> <p><u>Operational Impacts.</u> None.</p> <p><u>Mitigation.</u> None required.</p>	<p><u>Construction Impacts.</u> None expected.</p> <p><u>Operational Impacts.</u> None.</p> <p><u>Mitigation.</u> If an unexpected archaeological discovery is made during construction, applicable State requirements will be followed.</p>
TRAFFIC	<p><u>Construction Impacts.</u> None.</p> <p><u>Operational Impacts.</u> Increasing congestion and traffic delays during peak periods due to over-capacity conditions. Continued pedestrian and bicyclist deficiencies.</p> <p><u>Mitigation.</u> None required.</p>	<p><u>Construction Impacts.</u> Temporary traffic interruption and decreased roadway capacity.</p> <p><u>Operational Impacts.</u> Increased highway capacity will provide good levels-of-service. Safe, continuous pedestrian and bicycle facilities will be provided.</p> <p><u>Mitigation.</u> Maintenance of traffic plan, including pedestrian control plan, will be developed during design and implemented during construction.</p>
PARKING	<p><u>Construction Impacts.</u> None.</p> <p><u>Operational Impacts.</u> None.</p> <p><u>Mitigation.</u> None required.</p>	<p><u>Construction Impacts.</u> The elimination of space that could accommodate approximately 40 parked vehicles located within the highway right-of-way. Six of these spaces are marked perpendicular spaces.</p> <p><u>Operational Impacts.</u> In the interim condition, approximately 50 parallel parking spaces will be provided during off-peak hours. Parking will not be allowed from midday to late afternoon. In the final condition, approximately 38 spaces will be lost.</p> <p><u>Mitigation.</u> Two stalls, within a parking bay, will be constructed in front of A'ama Surf and Sport, partially replacing the six existing spaces that will be eliminated.</p>

Potential adverse impacts include:

- delays to motorists, pedestrians and bicyclists using the highway during construction, which may adversely affect adjacent businesses;
- the elimination of unmarked parallel parking spaces within the right-of-way along the west (makai) side of the highway from Palani Road to Henry Street, and six marked perpendicular spaces within the right-of-way fronting A'ama Surf and Sport on the east (mauka) side near Hualalai Road;
- changes in the streetscape caused by the widened highway affecting the "small town ambiance" of the existing roadway; and
- higher traffic noise because of improved vehicle flow, although noise levels at sensitive receptors will not exceed the FHWA noise abatement criteria nor will there be a substantial increase according to SDOT policy.

Table S-1 also summarizes the proposed measures to mitigate or minimize the above impacts. These measures include:

- a maintenance of traffic plan, including a pedestrian control plan, will be developed during design and implemented during construction;
- the County will work with adjacent landowners to facilitate driveway adjustments;
- on-street parallel parking will be allowed during off-peak hours in the interim condition, and two stalls, within a parking bay, will be constructed in front of A'ama Surf and Sport;
- preservation of most of the mature trees along Kuakini Highway; and
- a landscaping plan will be prepared during design and implemented during construction.

S.5 Comments and Coordination

During the preparation of the project's Draft EA, federal, State and County government agencies; community organizations; affected businesses and landowners; and elected officials were solicited for consultation and comments on the proposed project. Following distribution of the Draft EA, a public informational meeting was held, generating additional comments. Further, 24 written comments were received during the public comment period. All comments received were evaluated and considered. These comments and associated responses were included in the NEPA EA that was announced on April 8, 1998, and are included in this document. Three additional comment letters were received during the 30-day NEPA EA comment period, and are included in this document.

S.6 Finding of No Significant Impact

This document notices the issuance of a Finding of No Significant Impact (FONSI) by the DPW under State law. The State FONSI determination is based on an assessment of project impacts in comparison with Significance Criteria specified in HAR 11-200-12(b).

The FHWA is also issuing a FONSI (included with this EA).

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SECTION 1

Description of the Proposed Project

SECTION 1

Description of the Proposed Project

1 DESCRIPTION OF PROPOSED PROJECT

This Environmental Assessment (EA) is a joint publication of the County of Hawaii Department of Public Works (DPW), the State of Hawaii Department of Transportation, Highways Division (SDOT) and the U.S. Department of Transportation, Federal Highway Administration (FHWA). This document satisfies the requirements of Chapter 343 of the Hawaii Revised Statutes (HRS); Title 11, Chapter 200 of the Hawaii Administrative Rules (HAR); the National Environmental Policy Act (NEPA); and the rules and regulations of the U.S. Department of Transportation (23 CFR 771). The accepting authorities of this EA are the DPW and the Hawaii Division of the FHWA. This document is the "Final" EA under provisions of HRS Chapter 343 and HAR Chapter 200 since a "Draft" EA was previously announced and distributed for agency and public comments in July, 1997. An EA prepared under the rules and regulations of NEPA and 23 CFR 771 was announced on March 8, 1998.

This EA evaluates the impacts of the proposed Kuakini Highway Improvements as well as the impacts of doing nothing (No-Build Alternative).

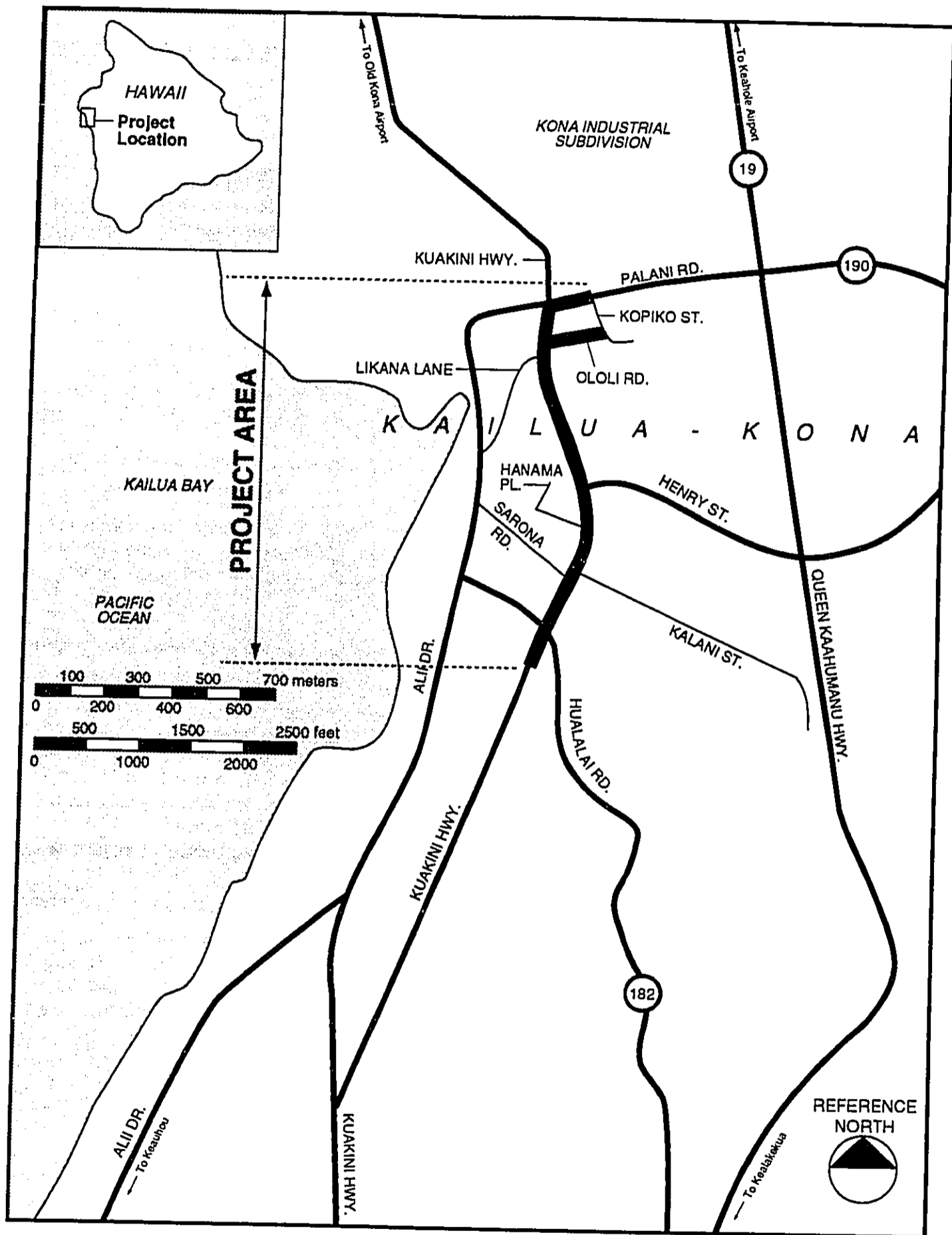
Per HRS Chapter 343 and HAR Sections 11-200-9 and 11-200-11.2, this EA documents a Finding of No Significant Impact (FONSI) by the DPW. The justification for the State FONSI determination is provided in Section 4. The FHWA is also issuing a FONSI (included with this EA).

1.1 Project Location and Description

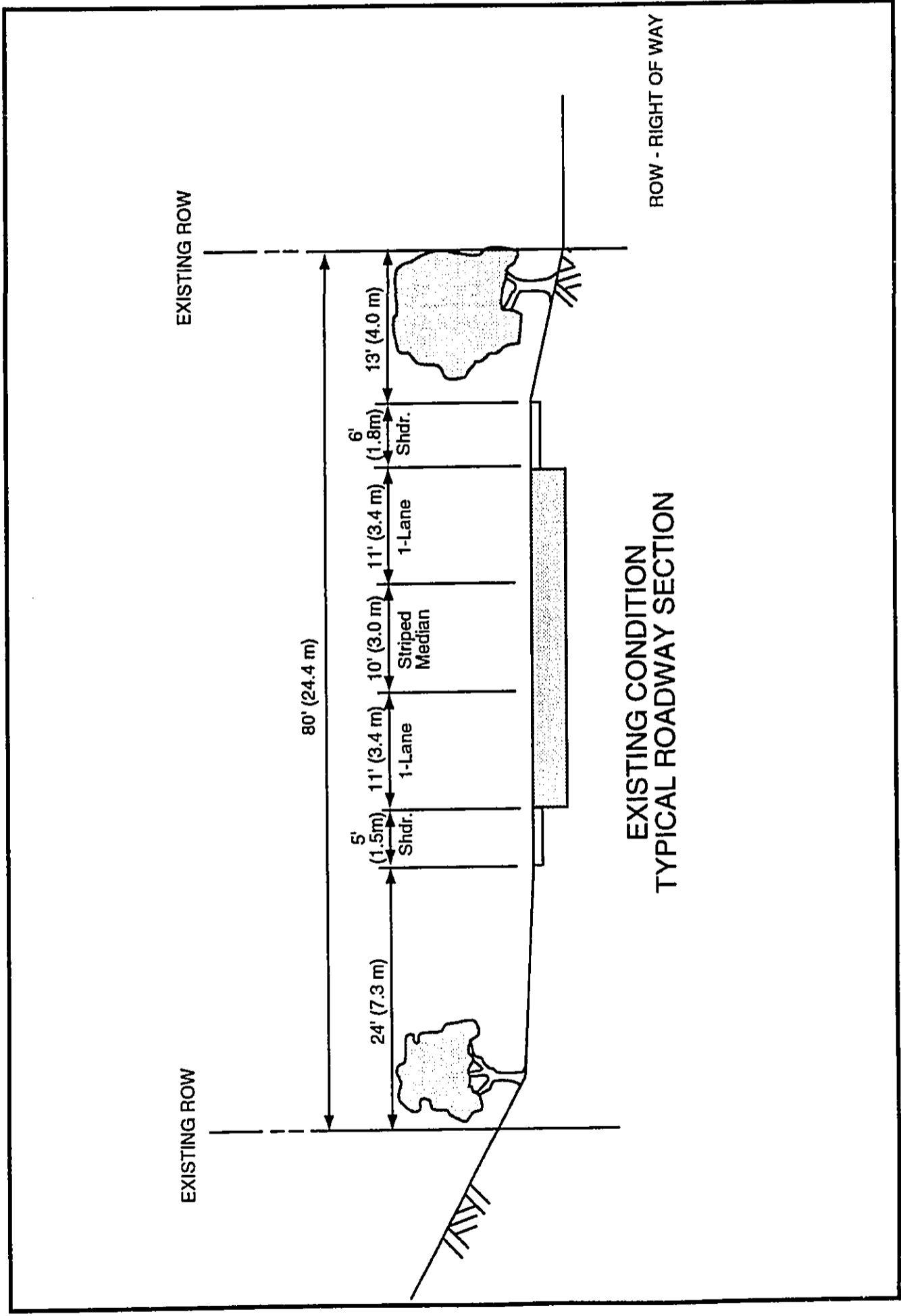
The DPW, in cooperation with SDOT and FHWA, proposes to widen to four through lanes a 0.8 km (half mile) segment of Kuakini Highway in Kailua Village (also referred to as "Kailua-Kona") from its intersection with Palani Road to its intersection with Hualalai Road. A left turn pocket approximately 100 m (300 ft) northeast along Palani Road, and a transition section extending approximately 60 m (200 ft) southeast of the highway's junction with Hualalai Road (terminating at the Keopu drainage channel), will be provided to facilitate movement onto the widened highway from both the north and south directions. The project will also include a connection between Ololi Road and Kopiko Street. The project location is shown in Figure 1-1.

Kuakini Highway functions as a major collector that services local commuters, businesses and tourists in Kailua-Kona. At present, the Kuakini Highway segment proposed for widening consists of a two-lane roadway generally aligned in the north-south direction with median left-turn lanes provided at most intersections (see Figure 1-2). The roadway is contained within a 24 m (80 ft) right-of-way. Existing pedestrian facilities along the roadway are discontinuous and bike facilities are not provided. Traffic congestion normally occurs during the midday and afternoon peak periods. The posted speed limit is 40 km/hr (25 mph), but vehicular travel speeds are constrained by five signalized intersections and numerous driveways within the project area.

The proposed project (see Figure 1-3) will accommodate future traffic demand while improving existing traffic operations and enhancing pedestrian and bicyclist safety. The

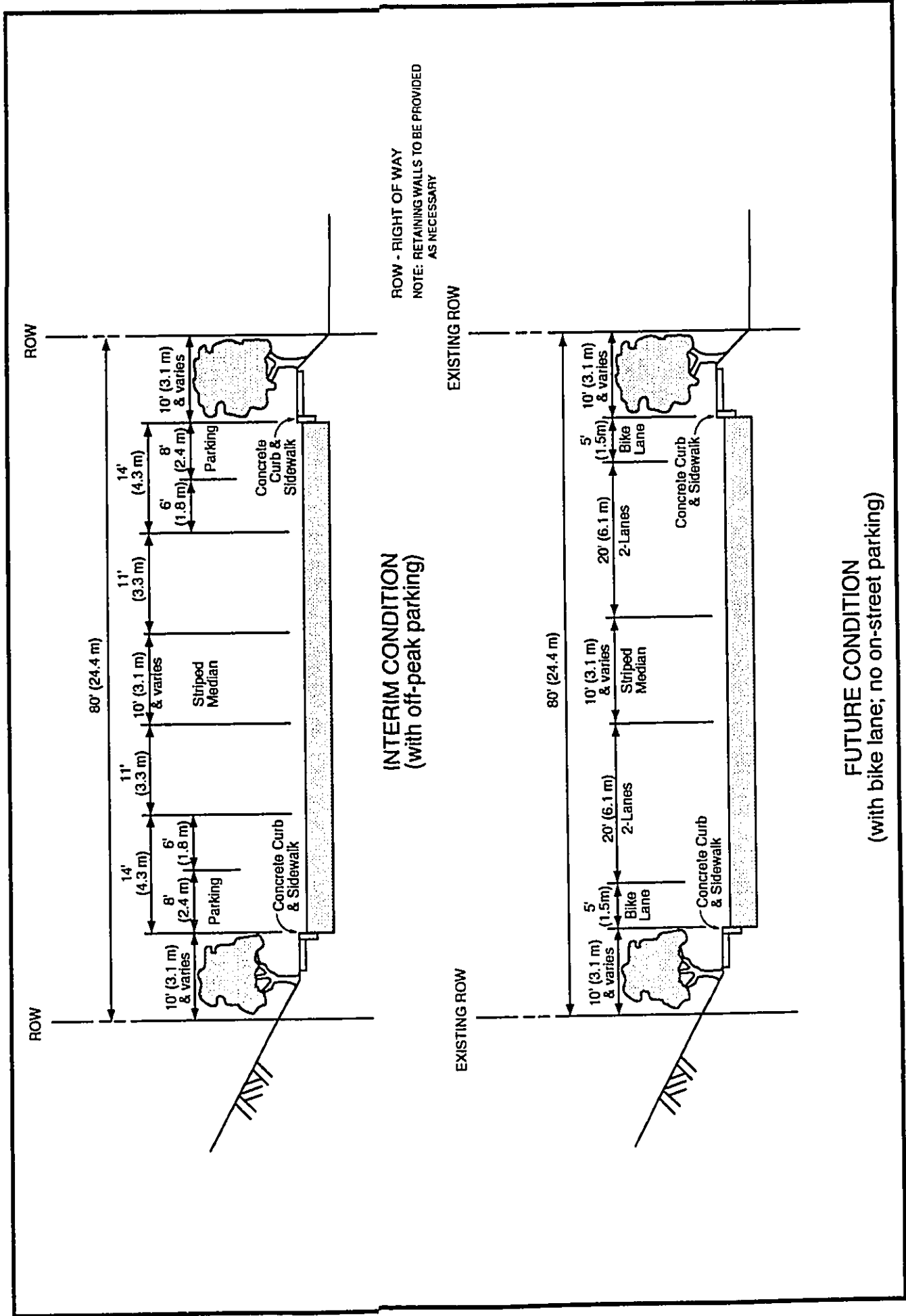


Location Map
KUAKINI HIGHWAY IMPROVEMENTS BETWEEN PALANI AND HUALALAI ROADS
 Environmental Assessment
 FIGURE 1-1



EXISTING CONDITION
TYPICAL ROADWAY SECTION

Existing Condition
KUAKINI HIGHWAY IMPROVEMENTS BETWEEN PALANI AND HUALALAI ROADS
Environmental Assessment
FIGURE 1-2



project will take place within the County right-of-way so no property acquisition will be required. The width of the paved improvement will be 18 m (60 ft) from face of curb to face of curb, and will include the following features:

- widening of Kuakini Highway to 18 m (60 ft);
- four 3-m (10-ft) wide traffic lanes and a 3-m (10-ft) wide median;
- continuous curbs, gutters and raised sidewalks on both the east (mauka) and west (makai) sides of the roadway (At certain sections on the west (makai) side where the roadway crosses existing floodways, a paved walk area with asphalt berms to separate vehicular traffic from pedestrians may be used instead of raised sidewalks.);
- two 1.5-m (5-ft) wide bicycle lanes within the paved roadway section;
- reconfiguration of the westbound lanes on Palani Road from one shared through/right-turn lane and one left-turn lane to one exclusive right-turn lane, one shared through/left-turn lane and one exclusive left-turn lane;
- improved turning lane configurations at the Hualalai Road intersection;
- a connection between Ololi Road and Kopiko Street;
- additional left-turn lane at westbound Henry Street;
- additional channelization of the eastbound left-turn movement at Sarona Street;
- resurfacing of the existing roadway;
- reconstruction of part of Ololi Road;
- traffic signal synchronization between Palani Road and Hualalai Road;
- dry wells to improve roadway drainage;
- retaining walls, as required;
- 24 street lamps placed at 40 m (140 ft) intervals along the roadside;
- a parking bay for two stalls in front of A'ama Surf and Sport; and
- landscaping at appropriate areas.

The posted speed limit will remain 40 km/hr (25 mph).

The proposed project will comply with all requirements of the Americans with Disabilities Act (ADA). Where there are fire hydrants, signs, or other obstructions, a minimum clear width of 1 m (3 ft) will be maintained on sidewalks. The requirements for horizontal clearance from obstructions, as stated in American Association of Highway and Transportation Officials (AASHTO), will be met.

Placing the existing overhead utility lines underground will not be part of the proposed project primarily due to the lack of available funds. This work would also lengthen the construction duration; require that property owners along the highway pay for the cost of undergrounding on private property; and require the possible acquisition of utility easements on private property for electrical equipment, such as transformers and circuit switches.

The increased roadway capacity to be provided by the project will only be needed during peak hours. Therefore, the roadway typical section will temporarily consist of a 3.0 m (10-foot) wide median lane, two 3.3 m (11-foot) wide travel lanes and two 4.2 m (14-foot) wide curb side lanes (see Figure 1-3). The curb side lanes will be used for parallel parking during off-peak hours (morning and evening). Parallel parking will not be allowed from midday to late

afternoon (see Section 2.4.2). Kuakini Highway will be dedicated as a bike route, but no striped bicycle lanes will be provided.

Subsequent to the interim condition when the additional roadway capacity is needed over a greater portion of the day, the road will be re-striped to the second configuration shown in Figure 1-3. Bike lanes will be delineated, and parking along the road will be discontinued.

Construction of the proposed action will involve a number of activities. Although the sequence of activities may vary, the widening will probably begin on the mauka side of the highway and then shift to the makai side. The following describes general construction activities likely to be undertaken:

- temporary lane restriping;
- remove brush from right-of-way areas as required;
- relocate utilities;
- construct curbs, drainage structures and pedestrian facilities;
- add street lights;
- construct roadway widening;
- synchronize traffic signals; and
- provide landscaping.

1.2 Purpose and Need

Proposals to widen Kuakini Highway have been incorporated into all of the recent transportation and community plans developed for Kailua-Kona because, as this community has grown, traffic congestion has worsened. The proposed project implements the specific recommendations for improvements to Kuakini Highway contained in the Master Plan for Kailua-Kona (April 1994, approved by the County Council on September 6, 1996) (Master Plan), and the Island of Hawaii Long Range Highway Plan (May 1991) (Long-Range Plan). The Master Plan incorporated substantial public involvement that included a task force and community workshops, and had goals and objectives seeking to preserve "The Kona Way of Life."

Both planning documents discussed project limits of Palani Road to Hualalai Road because this portion of Kuakini Highway passes through the commercial part of town and is the most congested. Traffic volumes on Kuakini Highway south of the Hualalai Road intersection are substantially lower than the section proposed for widening because many motorists turn onto Hualalai Road to reach residential areas east (mauka) of Kuakini Highway. Traffic volumes on Kuakini Highway north of the Palani Road intersection are also substantially lower than the section proposed for widening since many motorists turn onto Palani Road to reach Queen Kaahumanu Highway and beyond. Traffic congestion currently exists during the midday and afternoon peak periods.

Based on projections produced by the computerized travel demand model developed for the Long-Range Plan, daily traffic volume on Kuakini Highway will grow from 21,400 vehicles per day (vpd) in 1994 to 32,800 vpd by year 2020. Assuming linear growth through the year 2020, the two-lane capacity (25,000 vpd) of the existing Kuakini Highway is estimated to be

exceeded in the year 2003. Figure 1-4 illustrates the growth in daily traffic volume and its relation to the capacity of the existing two-lane Kuakini Highway. Without capacity improvements to Kuakini Highway, future traffic demand on this roadway is expected exceed capacity in the year 2003.

Sidewalks do not exist in many areas along Kuakini Highway. In some areas, pedestrians must walk within a traffic lane to avoid parked vehicles.

Kuakini Highway is also used by bicyclists. Bike Plan Hawaii (April 1994) recommended that Kuakini Highway be designated a bicycle route, and that bicycle facilities be constructed within the next ten years. Currently, the widths of the curb-side traffic lanes are narrower than guidelines provided in the Guide for the Development of Bicycle Facilities (August 1991) prepared by AASHTO.

Based on the purposes and needs described above, the proposed Kuakini Highway Improvements should:

- implement recommendations for Kuakini Highway as described in the Master Plan and the Long-Range Plan;
- increase capacity of the roadway so that over-capacity conditions will not occur as projected around the year 2003 beyond; and
- improve safety for pedestrians and bicyclists by constructing appropriate facilities.

1.3 Alternatives

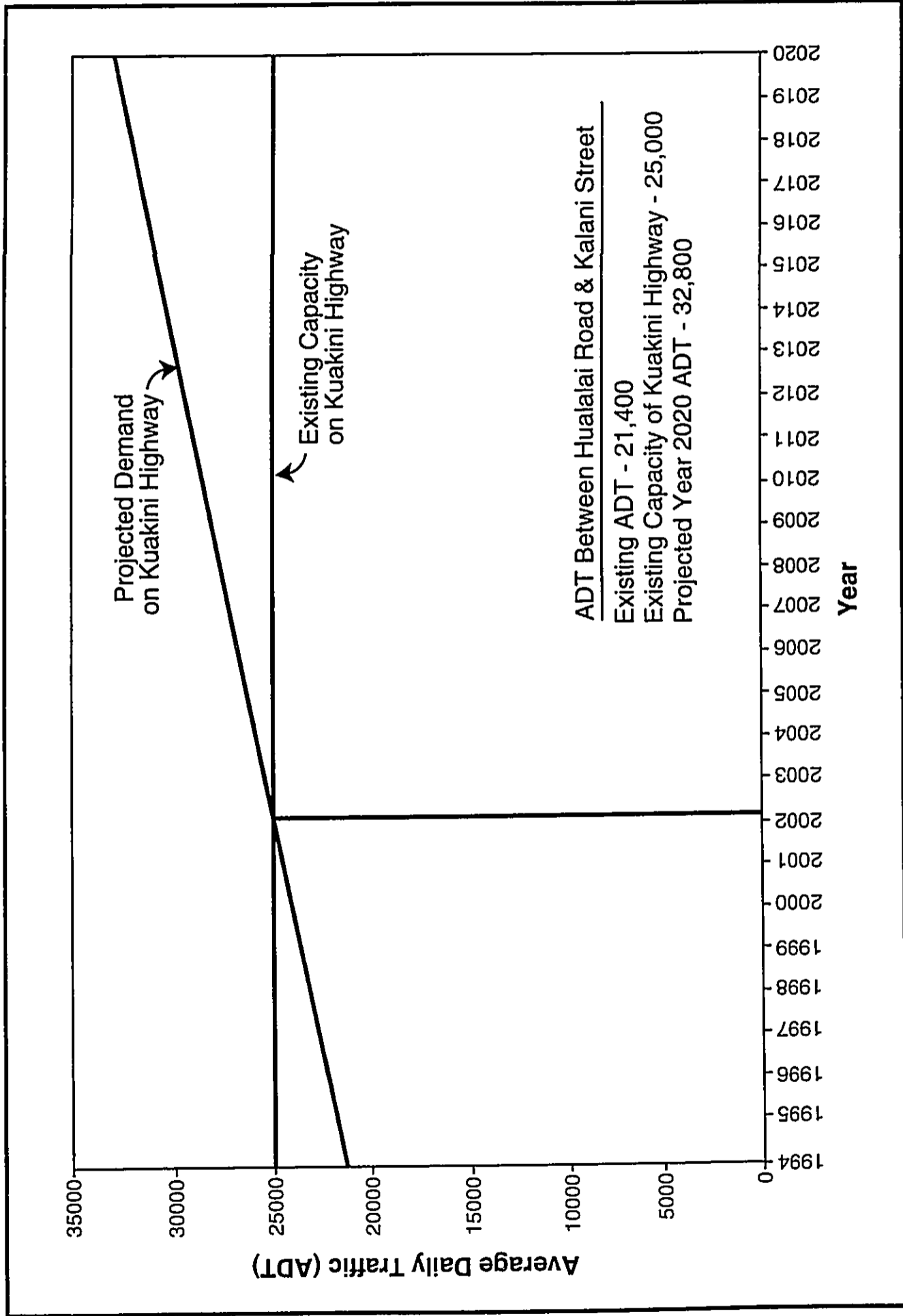
Alternatives to the proposed project include the No-Build and Transportation System Management (TSM) Alternatives, and two design alternatives within the project corridor.

1.3.1 No-Build Alternative

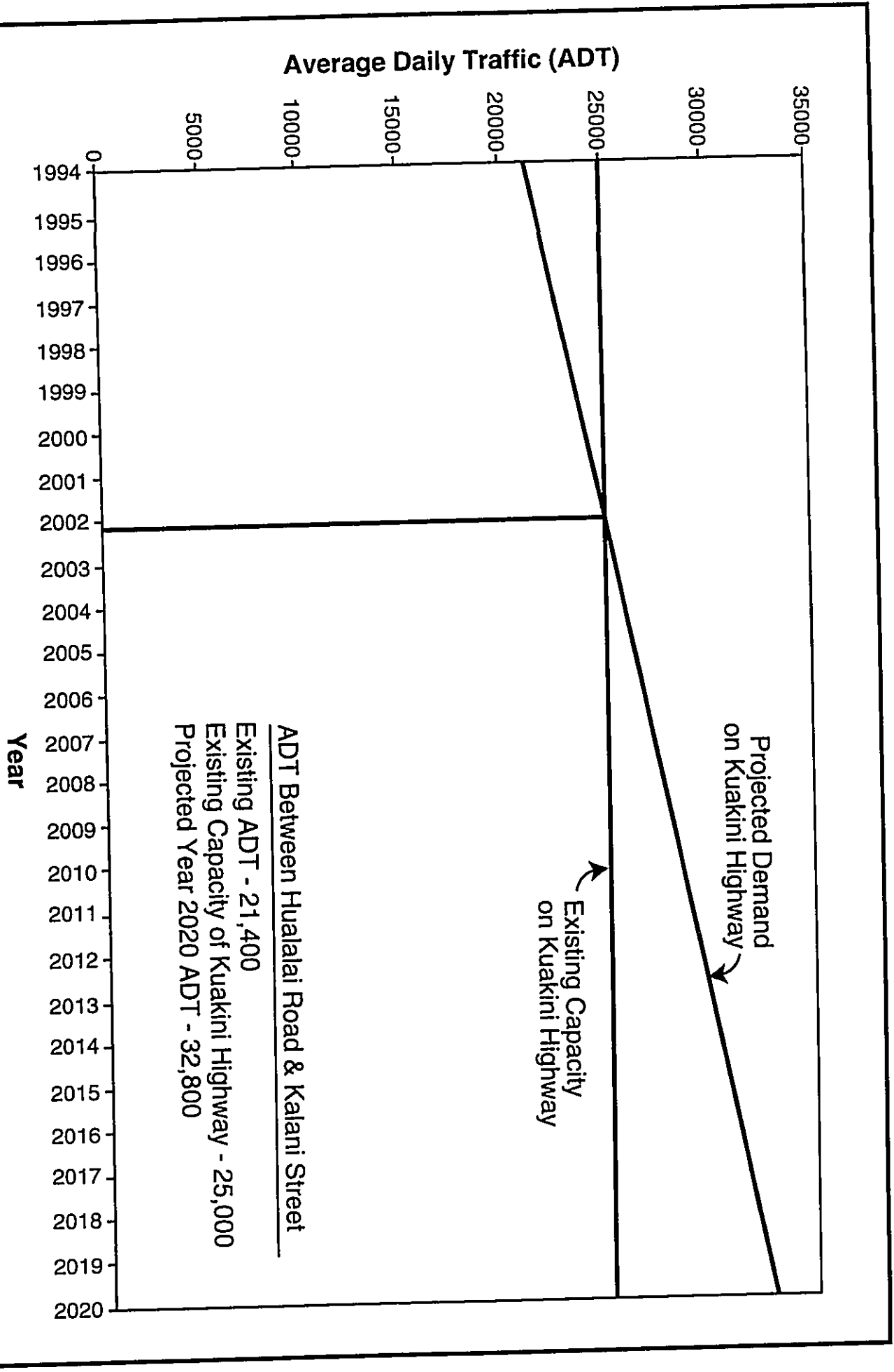
Under the No-Build Alternative there would be no modifications or actions to improve traffic flow, nor would safety or maintenance improvements be made to Kuakini Highway. This alternative does include a future connection between Henry Street and Lanihau Shopping Center. In this EA, environmental impacts of the proposed project are compared to the conditions under the future No-Build alternative.

1.3.2 Transportation System Management (TSM) Alternative

TSM encompasses activities that do not require substantial new construction but would maximize the efficiency of the present roadway system. TSM includes such options as alternative modes of transportation, such as buses, and traffic signal synchronization. Alternate modes of transportation were considered, but were judged to have minimal potential at this time given the extent of tourist-oriented travel by rental car and low density of the Kailua-Kona area. Mass transit is not widely used in Kailua-Kona, and given the short project limits, mass transit would not satisfy the purpose and need of the project.



KUAKINI HIGHWAY IMPROVEMENTS BETWEEN PALANI AND HUALALAI ROADS
 Projected Year Demand Exceeds Existing Capacity
 Environmental Assessment
 FIGURE 1-4



Projected Year Demand Exceeds Existing Capacity
KUAKINI HIGHWAY IMPROVEMENTS BETWEEN PALANI AND HUALALAI ROADS
Environmental Assessment
FIGURE 1-4

Traffic signal synchronization could yield a five to ten percent increase in Kuakini Highway's vehicle capacity. However, synchronization alone was eliminated from consideration because it would be insufficient to accommodate projected future traffic volumes. Traffic signal synchronization was incorporated into the proposed project (see Section 1.1).

1.3.3 Design Alternatives Within the Existing Corridor

Two design concepts within the existing corridor were explored (see Figure 1-5): a full-width widening that would span the entire right-of-way and a partial width widening that would use only a portion of the right-of-way, including a paved, flush median.

1.3.3.1 Full-Width Widening Alternative

The full-width widening of Kuakini Highway would span the entire 24 m (80 ft) right-of-way and provide space for a raised, landscaped median. Retaining walls would be constructed where appropriate along both sides of the highway, and some driveways to businesses along the highway would be steepened. Mature trees towards the edges of the right-of-way would be removed, but would be replaced by new trees planted in the median.

This alternative was eliminated from consideration mainly because it would steepen grades on certain driveways, hindering vehicle, bicycle and pedestrian access to affected properties. In addition, the removal of mature trees along the edge of the right-of-way was considered a major impact.

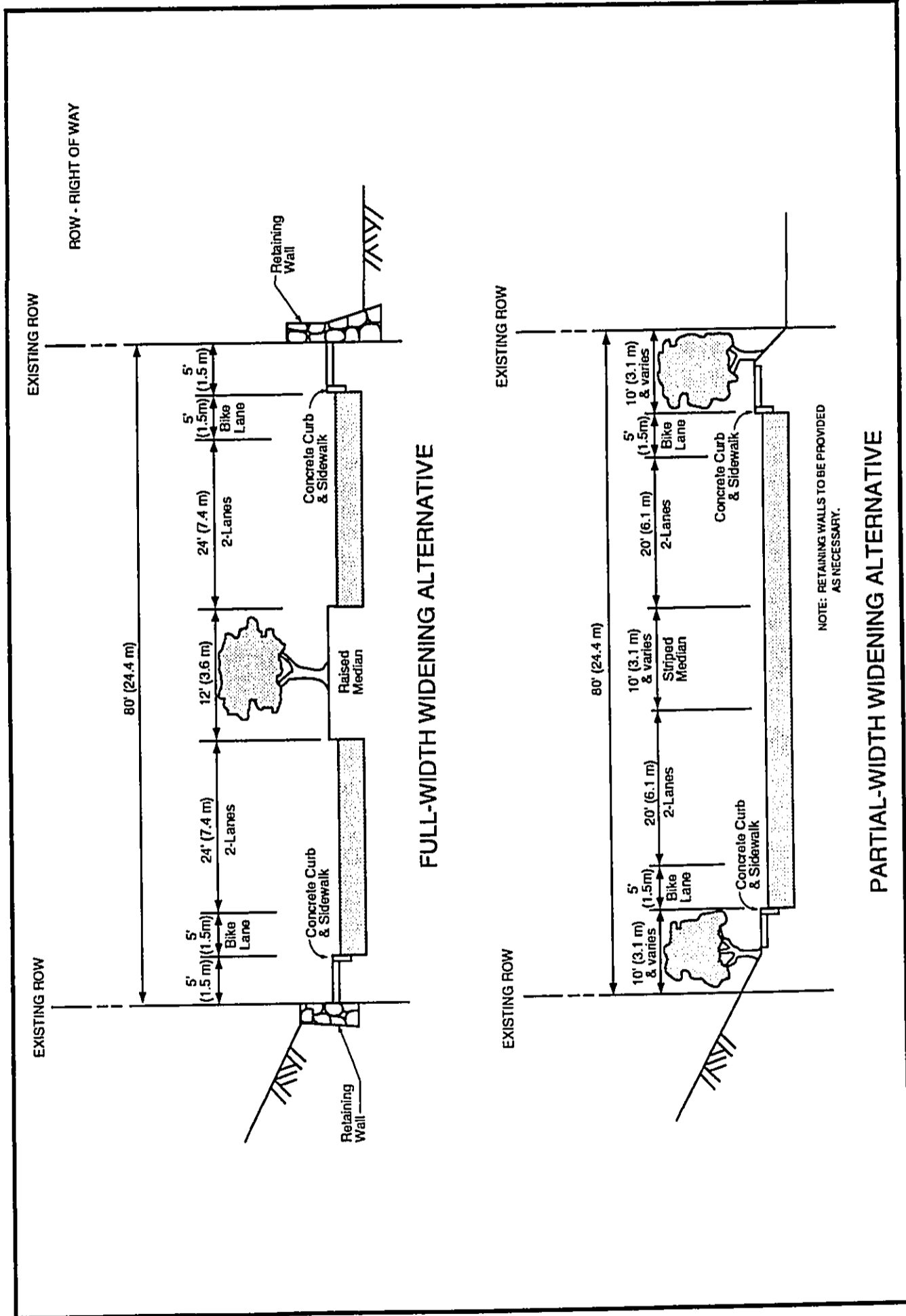
1.3.3.2 Partial Width Widening Alternative

The partial width widening alternative was identified as the preferred alternative because it will address the project's purposes and needs while having fewer adverse impacts than the full-width widening alternative. It will have less of an effect on adjacent properties and retain most of the mature trees along Kuakini Highway. A lane width of 3 m (10 ft), the minimum width recommended by AASHTO, was established because of the limited available right-of-way (24 m). In contrast to 3.4 or 3.6 m (11 or 12 ft) lanes, the narrow lane widths may help preserve a small town ambiance, a major concern to many Kailua-Kona residents.

1.4 Project Schedule and Costs

The \$6.5 million estimated construction cost will be 80 percent federally funded. Hawaii County will fund the remaining 20 percent of the cost. The project is listed in the 1997 State Transportation Improvement Program (STIP) although funds have not yet been allocated. Design funds will be requested for fiscal year (FY) 1998 and construction funds for FY 1999.

If necessary approvals are obtained in a timely manner, construction would begin in early 1999 and the project would be completed in approximately 12 months, opening for service in early 2000.



**Typical Sections of Widening Alternatives
 KUAKINI HIGHWAY IMPROVEMENTS BETWEEN PALANI AND HUALALAI ROADS
 Environmental Assessment**

FIGURE 1-5

SECTION 2

**Environmental Setting, Impacts and
Proposed Mitigation**

SECTION 2

Environmental Setting, Impacts and Proposed Mitigation

2 ENVIRONMENTAL SETTING, IMPACTS AND PROPOSED MITIGATION

2.1 Geographic Setting and Weather

The proposed project is located in Kailua Village, the town center of Kailua-Kona, the major urban area of the North Kona District of Hawaii County.

Kailua-Kona is on the slope of the Hualalai volcano on the shore of Kailua Bay. The site is less than 12 m (40 ft) above sea level.

The weather in Kailua-Kona is generally warm and sunny with average daily minimum and maximum temperatures of 19° C and 28° C (67° F and 83° F), respectively.

The Hawaiian Islands lie within a region of prevailing northeasterly trade winds. Being on the leeward side of the island of Hawaii, Kailua-Kona is protected from these moisture-laden tradewinds by the Mauna Kea, Mauna Loa and Hualalai mountains. Land-water temperature differentials along the coast are sufficiently large on warm days to foster the development of sea breeze circulation, causing showers during the summer months. During the daytime, winds typically move onshore. At night, winds generally move downslope and out to sea. Occasional winter storms from November through February are caused by the passage of frontal systems referred to as "Kona storms." The mean annual rainfall ranges from approximately 500 mm (20 inches) along the coast near the project site to 2500 mm (100 inches) at an elevation of 1000 m (3,000 ft).

2.2 Physical Environment

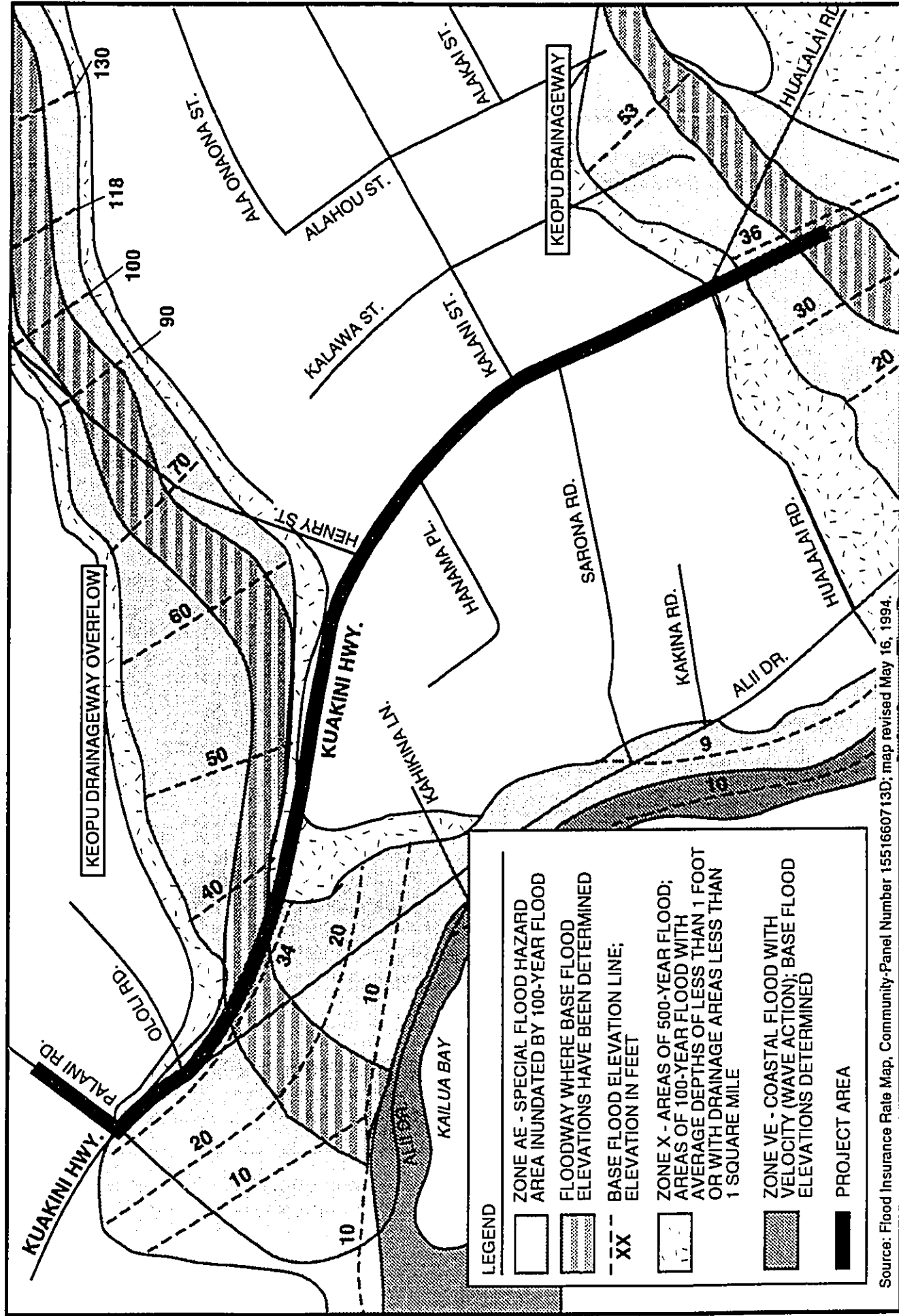
2.2.1 Water Resources and Drainage

Environmental Setting

North Kona is characterized by underdeveloped, shallow and poorly defined drainageways subject to occasional flooding. Flood problems are due to the steep topography, the youthful geology and the intensity of the storms. Consequently, drainage systems cannot carry sufficient volumes of floodwater during intense rainstorms. Overbank flow occurs, carrying rocks, debris and sediment downslope, and damaging residential and commercial properties and public roads. Accumulated debris and rocks have clogged drainageways, diverting surface drainage to previously unaffected areas.

Consequently, major flood damage has occurred in North Kona. In February 1982, a severe storm caused in excess of \$3 million of damage (North Kona Flood Plain Management Study, 1984), and portions of Kuakini Highway were closed due to flood waters. Residences in the Keopu Heights Subdivision and commercial buildings in Kailua-Kona suffered extensive damage.

The Flood Insurance Rate Map (FIRM) (Community-Panel 1551660713D, revised May 16, 1994) shows portions of the project area in special flood hazard areas (see Figure 2-1). The



Flood Zones
KUAKINI HIGHWAY IMPROVEMENTS BETWEEN PALANI AND HUALALAI ROADS
 Environmental Assessment
 FIGURE 2-1



Keopu Drainageway is 8.7 km (5.4 miles) long and inundates around 45 hectares (112 acres) during a 100 year storm and around 63 hectares (155 acres) during a 500 year storm (North Kona Flood Plain Management Study, 1984). The Keopu Drainageway divides into the Keopu Drainageway Overflow and Keopu Drainageway prior to reaching Kuakini Highway. The Keopu Drainageway Overflow crosses Kuakini Highway slightly south of Ololi Street. The Keopu Drainageway is at the southern terminus of the project area just south of Hualalai Road. The Keopu Drainageway is shown as an intermittent stream on the U.S. Geographic Survey (USGS) topographic map.

According to the Federal Emergency Management Agency (see March 12, 1996 letter in Appendix A), the FIRM will soon be revised based on a Conditional Letter of Map Revision (CLOMR). The Keopu Drainageway Overflow's Special Flood Hazard Area will shift south by approximately 60 m (200 ft) between approximately 300 m (1,000 ft) to approximately 730 m (2,400 ft) downstream of Queen Kaahumanu Highway. The floodway boundary delineation and base flood elevations (BFE) will also change along this reach. The maximum increase in BFE (300 mm (1 ft)) will occur at Kuakini Highway, and the maximum decrease in BFE (2 m (8 ft)) will occur just downstream of Queen Kaahumanu Highway.

To handle these floodwaters, the County is presently developing a regional flood control plan, including three systems to collect and convey Keopu drainage to the Pacific Ocean.

There is currently little provision for storm water collection along Kuakini Highway. In general, storm water either sheet flows across Kuakini Highway or flows along the curb and gutters. Several drywells to collect storm water were installed when Henry Street was constructed.

Kailua-Kona's groundwater resources come from rainfall on the upper slopes of Kona above the 800 m (2,500 ft) elevation. This rainfall, which averages 1000-2000 mm (40-75 inches) a year, percolates into the ground to become groundwater. There is little runoff to the sea except during heavy rainfall. Consequently, there are no perennial streams in Kona.

The project area is located within the Keauhou aquifer system, which encompasses the southern half of the Hualalai volcano. Groundwater in the coastal area is referred to as the "basal" lens and occurs as a thin, buoyant, unconfined lens of brackish water floating on saltwater. The brackish basal lens thins appreciably towards the coast, becoming more saline. The basal lens is dynamic, and can be affected by drought, ocean tides, and groundwater withdrawal from wells. The Keauhou aquifer is not a designated Sole Source aquifer under the Safe Drinking Water Act.

There are no wetlands, as defined by 40 CFR 230.41(a)(1), in the project area. There are also no waters or rivers designated as Wild/Scenic by the U.S. Government in the project area.

Impacts

By adding paved traffic lanes, approximately 0.6 hectares (1.5 acres) of new impermeable surface will be created. Storm water runoff will increase by approximately 0.2 m³/s (7 cubic feet per second) during 50- and 100-year storms. In a regional context this increase is small. Continuous curbs, gutters and raised sidewalks will be constructed on both the east (mauka) and west (makai) sides of the roadway. However, this will not change the existing regional

drainage conditions because floodwaters within the 500-year flood zone will not be diverted. Flooding problems in the area will persist after Kuakini Highway is widened until a regional flood control plan is implemented. The proposed project will not aggravate flood conditions because, through the installation of additional drywells, it will alleviate some localized flooding on the road surface.

The portion of Kuakini Highway that crosses the Keopu Drainageway culvert will be repaved. However, no changes will be made to the Drainageway as part of this project.

The proposed project will not support incompatible floodplain development because land uses surrounding the highway, including the area within Keopu Drainageway, are already urban and largely developed (see Section 2.3.2).

Based on the information above, the proposed project will not have a "significant encroachment" on the Keopu Drainageway floodplain in per 23 CFR 650.

In urban areas, storm water becomes contaminated with vehicle-related pollutants (e.g., gasoline, oil, rubber, etc.). If discharged into a surface or ground water resource, the water body could also become contaminated. However, since the proposed project will not affect regional vehicle-miles-traveled (VMT), the pollutant loading on Kailua Bay and groundwater resources will be the same under the proposed project and the No-Build Alternative.

No change in existing drainage conditions would occur under the No-Build Alternative.

2.2.2 Soils

Environmental Setting

The soils at the project site are part of the Punaluu Series which consists of well-drained, thin, organic soils over pahoehoe bedrock. The soil is of poor quality and is generally less than 250 mm (10 inches) thick. Rock outcrops occupy 40 to 50 percent of the surface. These soils have severe limitations making them unsuited for cultivation, and are largely used for pasture, range, woodland or wildlife. These soils are not prime, unique or otherwise critical for farming and are unclassified under ALISH (Agricultural Lands of Importance to the State of Hawaii). The U.S. Department of Agriculture, Natural Resources Conservation Service concurred that the soil in the project areas is neither prime nor unique for farming (see Appendix A).

Impacts

The project will cover approximately 0.6 hectares (1.5 acres) of soil with impervious surfaces (e.g., asphalt and concrete). However, these soils are not suited for agricultural purposes. The No-Build Alternative would not affect soils in the project area.

2.2.3 Hazardous Materials

Environmental Setting

Hazardous materials encountered during highway construction could jeopardize worker safety, delay the project, cause cost overruns and have other undesirable effects. Therefore, federal and State databases were searched to identify potentially contaminated sites in the project area.

The database search (see Appendix C) was conducted in conformance with the American Society for Testing and Materials (ASTM) standards for environmental site assessments (E1527-93). Databases searched included:

1. Federal National Priorities List (NPL)/Superfund Sites;
2. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) database, known as CERCLIS;
3. Emergency Response Notification System (ERNS) sites;
4. Resource Conservation and Recovery Act (RCRA) treatment, storage, or disposal (TSD) facilities;
5. RCRA generator facilities, including conditionally exempt small quantity generators (CESQG), small quantity generators (SQG) and large quantity generators (LQG);
6. State of Hawaii Landfills
7. Registered Underground Storage Tank (RUST) sites; and
8. Leaking Underground Storage Tank (LUST) sites.

Information about these databases can be found in Appendix C.

The database search revealed that the project area may have petroleum contamination. At least 32 petroleum product tanks existed at one time within an 800 m (one-half mile) distance of the project site, and at least ten tanks released petroleum product. Currently, there are at least 24 RUSTs containing petroleum products within 180 m (600 ft) of Kuakini Highway.

State of Hawaii Department of Health (SDOH) files on the RUST and LUST sites were reviewed to determine if any of the releases could potentially affect the project. According to SDOH files, the releases have either been successfully remediated, or were of such a quantity and limited extent that they did not require remedial action.

Besides petroleum products, two businesses were found which were registered generators of small quantities of RCRA waste. One is a CESQG. In addition, a dry cleaning operation, a business which commonly uses hazardous materials, was noted during a site visit. However, no evidence of any spills, releases or contamination at the dry cleaner or the RCRA sites was documented during this assessment.

Impacts and Mitigation

Hazardous materials impacts on the project are not expected. However, the construction contractor should be aware that petroleum products are stored in underground tanks in the area and undocumented releases could have occurred. Personnel should be alert for signs

of potential petroleum contamination when soil is excavated. If any contaminants are encountered during construction, they will be handled in accordance with applicable SDOH requirements.

2.2.4 Natural Hazards

Environmental Setting

The study corridor is on the western slope of the Hualalai, one of the older volcanoes on the island of Hawaii. Eruptions occurring at Hualalai are much less frequent than the more active Kilauea and Mauna Loa. Hualalai last erupted in 1800-1801 from several vents in its northwest rift zone. Lava emerged at about the 490 m elevation (1,600 ft), north of the project site, and created a flow that extended to the ocean north of Keahole Point (see Figure 2-2).

The intervals between the latest volcanic eruptions, including the almost 200 years since the last one, have led geologists to conclude that a Hualalai eruption is highly probable within the next two centuries, and could occur within the next few decades.

Four types of direct hazards are associated with eruptions: lava flows, tephra falls, pyroclastic surges and volcanic gases. Lava flows are the most common of the direct hazards, and pose the greatest threat to property. The Hualalai area, which includes the project area, is designated Hazard Zone 4 for lava flows (with Zone 9 having the lowest risk and Zone 1 having the highest). However, hazard zone boundaries are imprecise, as evidenced by the fact that only about five percent of Zone 4 is covered by fresh lava from Hualalai since 1800 and only about 15 percent of Zone 4 is covered by fresh lava from Hualalai since 1240 (Volcanic and Seismic Hazards on the Island of Hawaii (1990)).

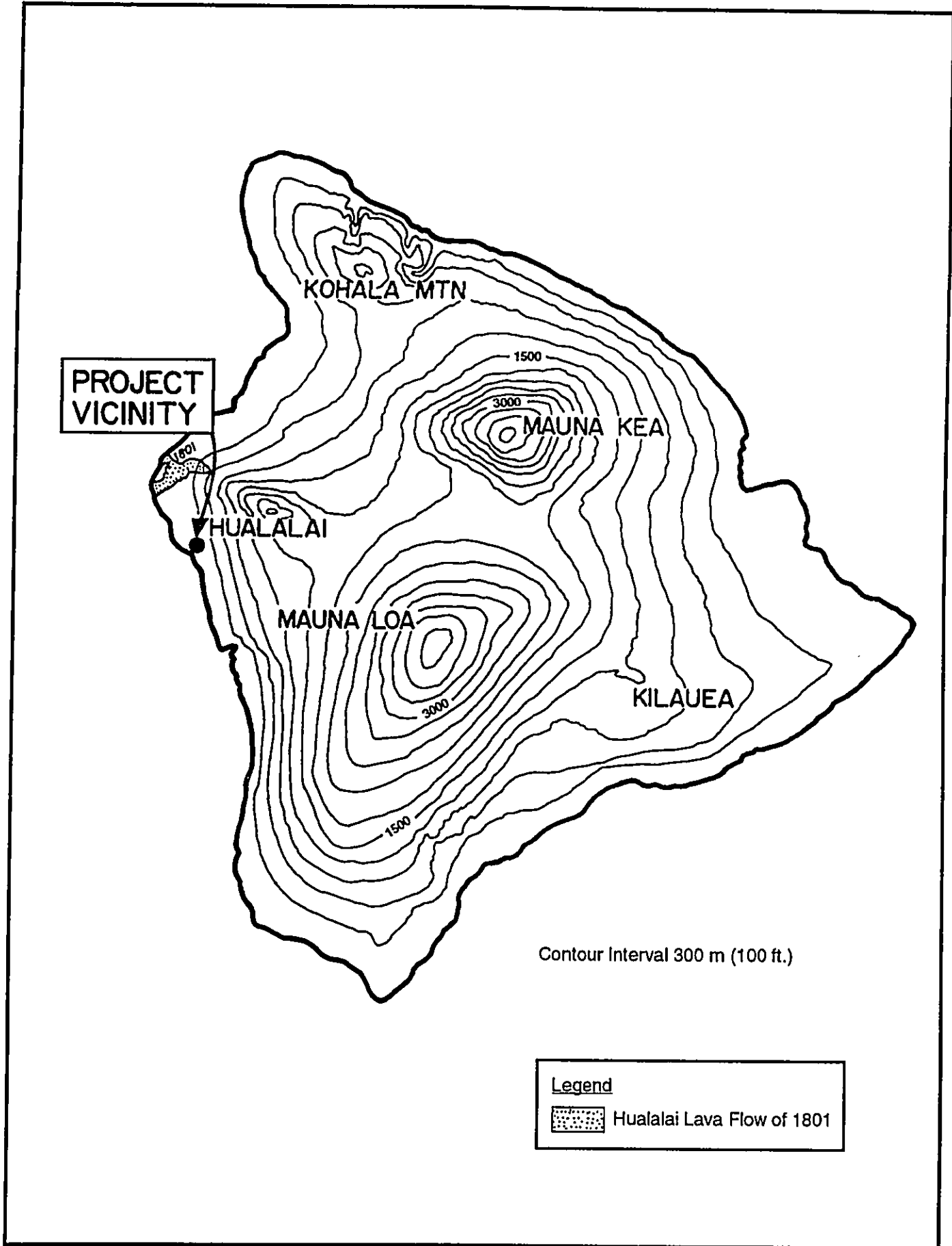
The second type of volcanic hazard is tephra, which consists of volcanic ash and coarser fragments produced by fountaining lava and explosive eruptions. With a Hazard Zone of 2 (on a scale of 1 to 3, with 1 representing the greatest risk), tephra is not considered a serious hazard in the Hualalai area.

The third volcanic hazard, pyroclastic surges, is not associated with Hualalai. Pyroclastic surges are clouds of ash, rock fragments and gas which move at high speeds outward from source vents.

Volcanic gas is the fourth type of volcanic hazard. Volcanic gas has the same hazard zone rating as tephra, so all of Hualalai is located in Volcanic Gas Hazard Zone 2. Volcanic gas hazards are greatest immediately downwind of active vents, because as air mixes with the gas, its concentration diminishes.

Indirect hazards, such as earthquakes, are associated with volcanic eruptions and fault movements. As Hawaii volcanoes typically swells before an eruption and shrink during an eruption, earthquakes are often produced.

Earthquakes caused by the movement of magma under Hualalai have occurred relatively infrequently compared to Mauna Loa and Kilauea. A large earthquake (measuring 6+ on the Richter Scale) would be more likely on the other side of the island near Mauna Loa and



Five Major Volcanoes of Hawaii
KUAKINI HIGHWAY IMPROVEMENTS BETWEEN PALANI AND HUALALAI ROADS
 Environmental Assessment
 FIGURE 2-2

Kilauea. The most recent activity at Hualalai occurred in 1929, when a series of earthquakes shook the area for more than a month. These quakes were attributed to a localized intrusion of lava and the subsequent readjustment of the surrounding rock.

Another earthquake occurred in 1951 and was related to a suboceanic tectonic displacement of the Kealakekua Fault. The 6.9 magnitude earthquake caused damage throughout the Kailua-Kona area. Like the rest of the Big Island, Kailua-Kona is designated Zone 3 (next to the highest risk) for earthquake design in the Uniform Building Code.

Tsunami can be generated when the ocean floor is deformed abruptly during an earthquake. Tsunami reaching Hawaii are generated by earthquakes occurring in the Pacific in places such as Chile, Japan, the Aleutian Islands, Alaska and Hawaii. Based on historical records, the areas most vulnerable to tsunamis are Hilo and the north shores of all the islands. The greatest tsunami wave run-up heights along the Kona coast [1.5-4.9 m (5-16 ft)] were observed during the 1960 tsunami which caused extensive damage throughout the Hawaiian Islands. Kuakini Highway is on the eastern (mauka) edge of the tsunami evacuation area (see Figure 2-3).

Impacts

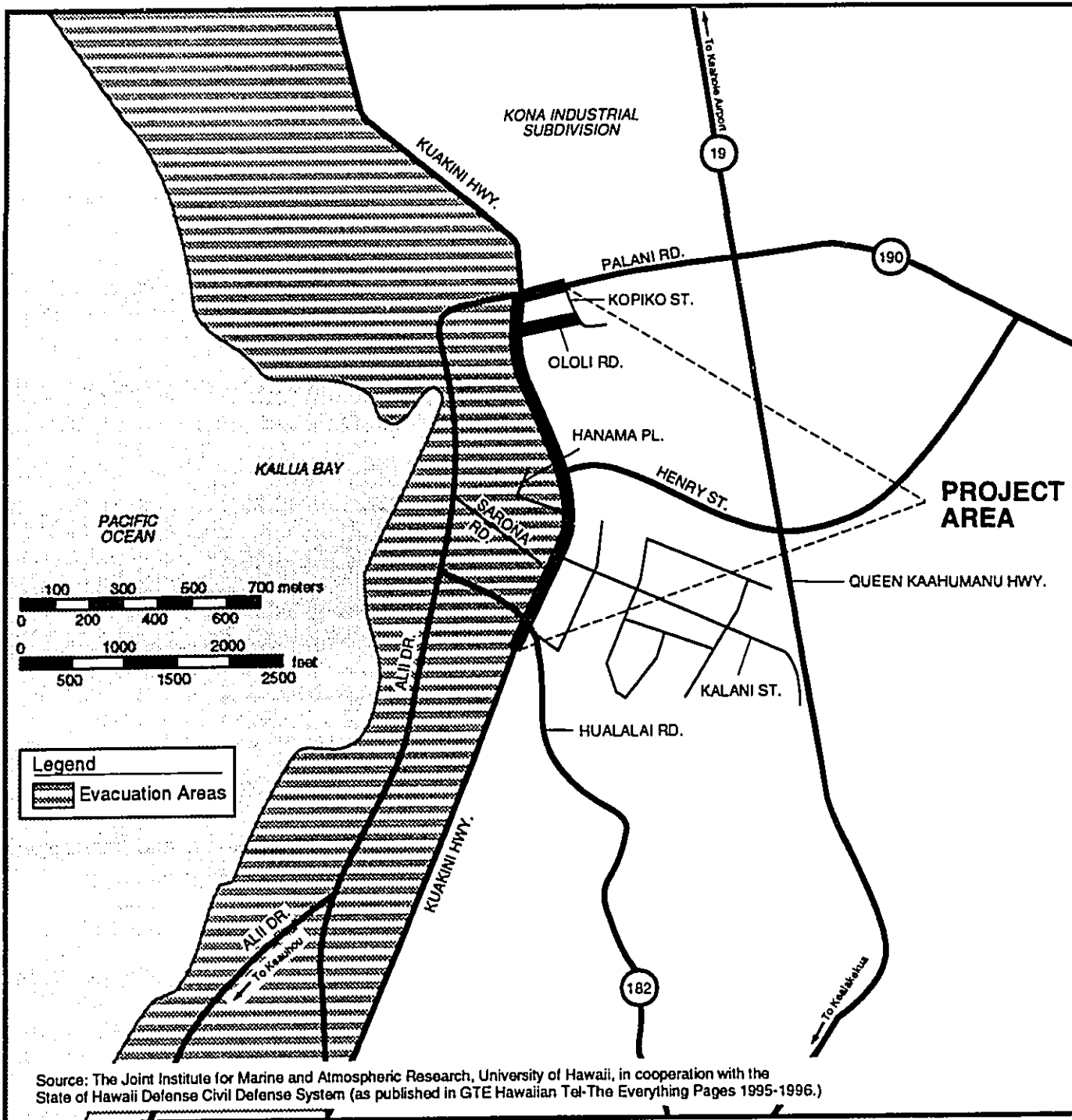
The proposed project and the No-Build Alternative will not result in additional exposure to geologic hazards. Unlike the No-Build Alternative, the proposed project will facilitate emergency egress from Kailua-Kona because it will provide additional roadway capacity in the event of an evacuation.

2.2.5 Flora, Fauna and Ecosystems

Environmental Setting

There are approximately 23 large Poinciana, African Tulip, and Plumeria trees and 20 Manila palm trees along the right-of-way. Also, Mahogany trees (*Swietenia mahagoni*) are on a section of the Palani Road median that will be affected by this project. Although these trees strongly contribute to the aesthetic value of the corridor, especially because of their flowers, none of them have been designated 'exceptional' in accordance with the Hawaii County Exceptional Tree Ordinance (Norm Olesen, personal communication).

The State of Hawaii Department of Land and Natural Resources (DLNR), Division of Forestry and Wildlife (refer to Appendix A) reported that two potentially rare and endangered plant species may occur in the area: *Capparis sandwichiana* and *Pritchardia affinis*. *Capparis sandwichiana* (commonly called pua pilo, also known as maipilo) is a candidate taxon for which there is some evidence of vulnerability, but for which there is a lack of data to support its listing as an endangered or threatened species. *Pritchardia affinis* (Loulou Palm) is an endemic endangered species, listed by the U.S. Fish and Wildlife Service (Service) in 1994. These small to medium palms have historically been found on the island of Hawaii in the Kohala Mountains, and along the western and southwestern coasts. The species was cultivated by Hawaiians, and are associated with human habitation or development. Neither of these plant species were found in the project area (J. Reichelderfer, personal observation).



Tsunami Evacuation Map
KUAKINI HIGHWAY IMPROVEMENTS BETWEEN PALANI AND HUALALAI ROADS
 Environmental Assessment
 FIGURE 2-3

The faunal community in the project area is typical of urban areas in Hawaii. Common animals include mice, mongoose, rats, a variety of birds, and feral cats. The area has been extensively modified from its original state and has little value as native bird habitat.

The Service (refer to Appendix A) indicated that the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) may occur near the project site or traverse the area.

There are no wildlife or waterfowl refuges within the project area.

Impacts

The proposed project will cause minimal disturbance to existing habitat, and no serious impacts to plants and animals in the project area are anticipated. Most of the flora and fauna in the project area are widespread and easily adapt to the urban environment. The proposed project may require removal of a few of the existing mature trees along Kuakini Highway because of Americans With Disabilities Act width requirements for sidewalks. However, most of the mature trees will be unaffected. The Manila palm trees fronting Bougainvillea Plaza, the McDonalds restaurant and the Chamber of Commerce, and six Mahogany trees in the median of Palani Street may need to be removed.

Although the Service indicated that the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) may occur within the vicinity or traverse the area, they nevertheless stated that it is unlikely that the bat will be affected by the proposed project (see Appendix A).

Although the number of road kills may increase, the animals present in the area, such as cats, mongoose and mice, will adapt to the widened roadway. The widened roadway will occupy only a narrow additional band of land and habitat for these animals will remain. Because these animals occupy habitat near urban development, construction activities should not have a negative effect on their daily habits.

The No-Build Alternative would have no effect on flora and fauna in the project area.

Mitigation

Selected trees requiring removal will be transplanted to other areas along the highway. Detailed transplanting and landscape replacement plans will be developed during the design phase, and implemented during construction.

2.2.6 Scenic Resources

Environmental Setting

The viewsheds (i.e., areas visible from certain viewpoints) in the project area are views east (mauka) and west (makai) of the highway, and views of the highway itself. The east (mauka) viewshed is upslope. Beyond the street scene, views of Hualalai Volcano provide a dramatic backdrop to all of Kailua-Kona. The west (makai) viewshed is downslope. However, buildings, trees and other obstructions makai of the highway effectively block expansive views of the coastline and the Pacific Ocean.

The visual element that most enhances the aesthetic value of the highway is the mature flowering trees that line the roadway and the palm trees that help provide a tropical surrounding (see Section 2.2.5). The abundant vegetation, as well as the relatively narrow width of the road, create a country road environment. However, overhead utility lines (see Section 2.4.1) and buildings along the highway (see Section 2.3.2) detract from these aesthetic qualities.

Impacts and Mitigation

The proposed project will not affect existing eastern (mauka) and western (makai) views from the highway.

The proposed project will increase the width of pavement, and may remove palm trees fronting certain establishments and Mahogany trees in the Palani Road median (see Section 2.2.6). The widened roadway will change the "country road ambiance" of the existing highway. However, maintenance of this "country road ambiance" was a major factor leading to the identification of the partial-width widening alternative as the preferred alternative. The 3 m (10 ft) lane widths are the narrowest allowed by AASHTO for an urban collector road. Furthermore, the partial-width widening alternative retains most of the mature trees.

A landscaping plan that specifies transplanting of affected trees will be prepared during design and implemented during construction.

The No-Build Alternative would not affect existing viewsheds or the aesthetic qualities of the highway.

2.2.7 Air Quality

Detailed descriptions of the existing air quality conditions and future air quality impacts of the proposed project are contained in Appendix D. The following is a summary of these descriptions.

Environmental Setting

With the exception of periods of vog from volcanic emissions and occasional localized impacts from traffic congestion, the air quality in Kailua-Kona is good. The small amount of air quality data available from a SDOH monitoring station in Kealahou indicates that air quality is well within State and National Ambient Air Quality Standards (SAAQS and NAAQS).

Emission and dispersion models were used to estimate the current worst-case ambient concentrations of carbon monoxide (CO), one of the primary pollutants of automobiles, based on current traffic conditions at four intersections during peak traffic hours (see Table 2-1). The results indicate that all four intersections are within the NAAQS, but three of the four intersections exceed the more stringent SAAQS. It is likely that, because the SAAQS are very stringent, they are exceeded at many locations in the State that have moderate traffic volumes.

**Table 2-1
ESTIMATED WORST CASE 1-HOUR CARBON MONOXIDE CONCENTRATIONS
NEAR INTERSECTIONS INCLUDED WITHIN
KUAKINI HIGHWAY WIDENING PROJECT
(milligrams per cubic meter)**

Roadway Intersection	Year/Scenario					
	1996/Present		2020/Without Project		2020/With Project	
	AM	PM	AM	PM	AM	PM
Kuakini Highway at Palani Road	13.0	18.9	12.7	15.8	14.1	14.8
Kuakini Highway at Henry Street	9.9	8.5	10.2	9.0	9.8	10.9
Kuakini Highway at Kalani Street	9.2	10.1	10.0	10.8	8.3	11.0
Kuakini Highway at Hualalai Road	10.8	14.4	15.4	12.9	13.2	14.3

Notes: SAAQS: 10
NAAQS: 40

Source: B.D. Neal and Associates, Air Quality Study for the Proposed Kuakini Highway Widening Project, November 1996 (see Appendix D).

Impacts

Both mesoscale and microscale analyses were performed to assess the potential long-term impact of emissions from vehicles operating in the project corridor. The mesoscale analysis was designed to provide estimates of air pollution emissions from traffic for the entire highway corridor, while the microscale analysis assessed ambient air quality impacts near selected intersections along the highway. Both analyses used year 2020 traffic projections (see Section 4.4.2) with and without the proposed project.

The mesoscale analysis indicates that under the No-Build Alternative, CO emissions would increase by about 118 percent, hydrocarbon emissions by about 80 percent, and oxides of nitrogen emissions by about 36 percent above the existing levels. With the proposed project, CO emissions will increase by about 57 percent, hydrocarbon emissions by about 27 percent, and oxides of nitrogen emissions by about 22 percent above the existing levels. The differences in mesoscale conditions between the "project" and "no project" scenarios are attributed to reduced traffic congestion on Kuakini Highway after construction of the proposed improvements. Congestion is one of the major causes of air pollution because vehicles idling in traffic become stationary sources of emission and expend more fuel per mile.

The microscale analysis used emission and dispersal models to estimate future year 2020 worst-case ambient CO concentrations during peak travel hours at four intersections along

Kuakini Highway. For both "project" and "no project" scenarios, the models indicate that CO concentrations will be similar to the existing conditions (see Table 2-1). CO concentrations will be within NAAQS, but will exceed the more stringent SAAQS.

In summary, the mesoscale analysis indicates that the proposed project will provide substantial air quality improvement over the No-Build Alternative. The microscale analysis indicates that CO concentrations at areas along Kuakini Highway will remain relatively unchanged, although exceeding the stringent SAAQS.

2.2.8 Noise

Detailed descriptions of the existing traffic noise conditions and future traffic noise impacts are contained in Appendix E. The following is a summary of these descriptions.

Environmental Setting

Existing traffic and background ambient noise levels were measured at four noise sensitive sites along the project corridor at different times of the day (see Table 2-2). The monitoring indicated that existing traffic noise levels do not approach or exceed the FHWA Noise Abatement Criteria (NAC). Approach means 1 dBA less than the NAC. The SDOT has adopted the NAC.

**Table 2-2
EXISTING AND PREDICTED NOISE LEVELS AT
NOISE SENSITIVE AREAS**

Location	Setback Distance from Meter (Ft)	Existing (1996) Leq(h) (dBA) Peak Hour	Future (2020) With Project Leq(h) (dBA) Peak Hour
Kona Seaside Hotel	32 (105)	62.0	63.2
Kona West Condominiums	17 (56)	64.8	66.0
Kailua Bay Resort	74 (243)	58.4	59.3
Kalanikai Condominium	50 (164)	60.1	61.0

Notes: Leq(h): Equivalent (or average) sound level over a period of one hour
dBA: decibel, a logarithmic unit measure of sound

Source: Ebisu, Y. and Associates, Acoustic Study for the Kuakini Highway Improvements between Palani and Hualalai Roads, Kona, Hawaii, November 1996.

Impacts

Based on future traffic conditions (see Section 2.4.2), substantial increases in traffic noise levels are not predicted at any of the four noise sensitive sites, per the SDOT Noise Analysis

and Abatement Policy (October 1996, approved by FHWA on June 26, 1997) (see Table 2-2). The Kona West Condominiums site is predicted to have exterior noise levels that will approach the NAC (see Table 2-2). However, because the condominium's residential units do not have 180 degree fields of view of the highway, the units are not predicted to approach or exceed the NAC. Consideration of noise abatement at the condominium is not necessary. The other three sites will not approach or exceed the NAC.

Under the No-Build Alternative, the same number of vehicles is expected to use Kuakini Highway in the year 2020. Since no improvements would be made to the highway, average vehicle speeds due to congestion are expected to be lower, resulting in noise levels about 2 to 4 Leq(h) (dBA) lower than indicated in Table 2-2.

2.3 Social, Cultural and Economic Setting

2.3.1 Social-Economic Activity

Social Setting

West Hawaii's economy is based on the visitor industry, construction, diversified agriculture, ranching, and high technology initiatives in ocean science and astronomy. The visitor industry is the largest in terms of size and potential growth. Recent resort and hotel developments on the island have been concentrated in the North Kona and South Kohala regions, and, since most proposed hotel developments within the County are located in this region, it is expected that this concentration will continue.

West Hawaii has been one of the fastest growing areas in the State. Its population nearly tripled from 1970 to 1990 (from 14,472 to 43,373) (see Table 2-3). North Kona, in particular, had a growth rate of 62 percent from 1980 to 1990. The population islandwide has also been growing rapidly, increasing by approximately 45 percent between 1970 and 1980, and by nearly 31 percent between 1980 and 1990.

Table 2-4 displays population projections for the island prepared by the State Department of Business, Economic Development and Tourism (DBEDT). The projections indicate that Hawaii County's population will increase at a faster rate than the growth in statewide population.

The ethnic breakdown of West Hawaii is shown on Table 2-5. Overall, the population contains a substantially higher percentage of whites and a considerably lower proportion of Japanese than Hawaii County as a whole. The other racial groups' proportion of West Hawaii's population is roughly the same as the entire island.

Median household income in West Hawaii is generally higher than the median household income for Hawaii County, which was \$29,712 in 1989. In Kona, median income in 1989 (by census tract) ranged from \$29,617 to \$40,489. All the census tracts in North Kona had median household incomes greater than the Countywide median in 1989.

**Table 2-3
POPULATION TRENDS**

Geographical Area	Year 1970	Year 1980	% Change 1970-1980	Year 1990	% Change 1980-1990
North Kona District	4,832	13,748	185%	22,284	62%
South Kona District	4,004	5,914	48%	7,658	30%
South Kohala District	2,310	4,607	99%	9,140	98%
North Kohala District	3,326	3,249	-2%	4,291	32%
Total West Hawaii Area	14,472	27,518	90%	43,373	58%
Hawaii County	63,468	92,053	45%	120,317	31%
State of Hawaii	769,913	964,691	25%	1,108,229	15%

Source: U.S. Department of Commerce, Bureau of the Census, Census of Population, Number of Inhabitants, Hawaii, 1970, 1980, and 1990.

**Table 2-4
POPULATION ESTIMATES AND PROJECTIONS, RESIDENT
AND DE FACTO: 1980 TO 2020
(IN UNITS OF 1000 PERSONS)**

Type of Population and Year	State Total	Hawaii County
<i>Resident Population</i>		
1980	968.5	92.9
1990	1112.9	121.5
2000	1238.5	149.6
2010	1366.8	173.9
2020	1494.1	205.4
<i>Defacto Population</i>		
1980	1055.4	99.3
1990	1257.0	136.5
2000	1372.8	172.1
2010	1548.7	207.6
2020	1720.3	251.8

Note: De facto population includes visitors (average daily visitor population) in addition to the resident population.

Source: State of Hawaii, DBEDT, Research and Economic Analysis Division, Hawaii's Economy: A Quarterly Report from the Department of Business, Economic Development and Tourism, Third Quarter 1996.

**Table 2-5
ETHNIC BREAKDOWN IN WEST HAWAII**

Race	South Kona		North Kona		South Kohala		North Kohala		Hawaii County	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
White	2,956	39%	13,124	59%	4,778	52%	1,457	34%	47,736	40%
Chinese	128	2%	409	2%	152	2%	92	2%	2,518	2%
Filipino	799	10%	1,686	8%	667	7%	801	19%	15,540	13%
Japanese	1,677	22%	2,328	10%	950	11%	581	13%	25,044	21%
Hawaiian	1,800	23%	3,655	16%	2,215	24%	1,028	24%	23,120	19%
Other Races	298	4%	1,082	5%	378	4%	332	8%	6,359	5%
Total Persons	7,658		22,284		9,140		4,291		120,317	

Source: U.S. Census Bureau, 1990 Census of Population and Housing, Hawaii.

Impacts

Upon completion, the proposed project will enhance socio-economic conditions in Kailua-Kona because it will improve accessibility, mobility, regional circulation, and overall transportation service. Since no additional right-of-way is required, there will be no residential or business displacements, no neighborhood will be affected, and property tax revenues to Hawaii County will be unaffected. The project will help to improve public services, such as *police and emergency response, through additional transportation infrastructure*. The expenditure of federal and County funds for this project will benefit the local economy.

During construction, businesses abutting the project may experience some temporary loss in revenue because of construction-related delays to patrons of Kuakini Highway.

The No-Build Alternative may adversely affect economic activities in the region because it would not address existing or future traffic congestion, a disincentive to patronize businesses abutting the project.

Since federal funds will be used for the project, conformance with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, must be demonstrated. Based on the information on population and income above, the Executive Order appears not to apply. However, regardless of whether there are minority or low income populations at or near the project area, the proposed project will be in compliance with the Executive Order because all improvements will occur within the existing right-of-way and the project will not adversely affect nor create health risks to nearby residences.

Mitigation

A maintenance of traffic plan, including pedestrian control plan, will be developed during the project's design phase and implemented during construction. These plans will maintain access to all businesses abutting the project throughout construction.

2.3.2 Land Use

Environmental Setting

Kailua-Kona is the major urban area of West Hawaii, and Kailua Village is its town center, supporting a mix of resort, commercial, light industrial, and residential uses. The historic section of Kailua Village, the area surrounding Alii Drive directly west (makai) of the project area, is the town's primary visitor attraction.

The highway corridor is predominantly lined with commercial facilities and a few undeveloped parcels. Land uses along Kuakini Highway within the project area include four gas stations, three banks, several restaurants, one hotel, condominiums, numerous stores and a few vacant lots. This area has County zoning designations of "village commercial," "general commercial" and "resort hotel." The State Land Use Commission designation for this area is Urban.

Impacts

Since the proposed project will not require additional right-of-way, there will be no residential or business relocations.

The proposed project will facilitate land use plans prepared for the area (see Section 2.7), and will not encourage changes in land use designations or controls. Land uses out of character with the existing environment are not anticipated as a result of the proposed project.

2.3.3 Archaeology and Historic Sites

Environmental Setting

Since Kuakini Highway was constructed in the early 1950s, there are no buildings along the highway that are older than fifty years, the minimum requirement for historical significance. Even the stone walls found along the highway corridor are not considered archaeological or historically significant because they were built in the 1950s as a component of the highway.

If there were surface archaeological sites within the right-of-way, construction of the existing highway and adjacent development has obliterated them.

An archaeological and historical reconnaissance survey and assessment report and an addendum report (see Appendix F) identified three possible archaeological sites in the project area: one site containing two traditional mounds; one site possibly containing two *heiau*; and Laniakea Cave. These reports were sent to the Office of Hawaiian Affairs (OHA) and the Kona Civic Club for review. The traditional Hawaiian mounds may contain burials and are located outside the highway right-of-way on an undeveloped parcel at the corner of Sarona Road and Kuakini Highway. Off Ololi Road, an undeveloped parcel may contain two *heiau*. Their possible presence could not be confirmed, however. Information was obtained about Laniakea Cave during the "Draft" EA public comment period. Based on mapping of the cave, and information in the addendum report (see Appendix F), it appears that the cave traverses Kuakini Highway just south of the Hualalai intersection, and is within the project limits. The depth of the cave beneath the right-of-way is not known. However, the cave is deep enough to not have been encountered during prior surface activities (i.e., construction of roadways and buildings), including construction of the existing Kuakini Highway and the underground utilities within the right-of-way.

Impacts

The proposed project will not encroach upon the two traditional Hawaiian mounds and the undeveloped parcel on Ololi Road that may contain two *heiau*. All work will occur within the project right-of-way except minor adjustments to driveways. There will also be no impacts to Laniakea Cave. Staff from the DLNR, State Historic Preservation Division (SHPD) explored the cave on January 28, 1998, and concluded that the cave would not be affected by the proposed project, including the relocation of an existing sewer line, because of its depth below the surface.

The No-Build Alternative would also not affect any of these sites.

Based on the information above, the FHWA determined that the proposed project will have "no effect" on existing or potential archaeological sites in accordance with Section 106 of the National Historic Preservation Act. This finding was submitted to the State Historic Preservation Officer (SHPO) with a request for concurrence (see Appendix A). The SHPO is anticipated to concur with the FHWA finding of "no effect," satisfying the requirements of the National Historic Preservation Act.

Mitigation

If the sewer relocation work penetrates the cave all work will cease in the area, and the SHPD will be notified and consulted regarding appropriate treatment measures. Project construction will proceed only after all agreed upon treatment measures have been implemented and appropriate steps taken. However, impacts to the cave are not expected.

Standard construction specifications, (Hawaii Standard Specifications for Road, Bridge, and Public Works Construction, 1994) and SHPO requirements will be incorporated into construction contracts to address unexpected historical or archeological discoveries.

2.4 Public Facilities and Services

2.4.1 Utilities

Existing Service

Aerial communication cables are located predominantly on the west (makai) side of the highway. Aerial electrical cables include 69 kV and 12.46 kV lines, and are located on both sides of the highway. Water, sewer, and gas lines are buried within the right-of-way. Most of Kuakini Highway's street lamps are located near intersections and commercial developments.

Impacts

The proposed project will provide approximately 24 street lamps, placed at 40 m (140 ft) intervals along the roadside, which will increase motorist, cyclist and pedestrian safety. As required by the Hawaii County Code, low pressure sodium lights will be used, and the lights will be placed on existing utility poles where possible.

Impacts to electrical, telephone, water, sewer and gas utility services will occur during construction, and are therefore short-term. A discussion of construction-phase impacts is in Section 2.5.5.

2.4.2 Roads, Parking and Traffic

Environmental Setting

Traffic conditions are summarized by a qualitative index known as level-of-service (LOS) which uses letter designations from A through F, representing best to worst conditions, respectively.

An analysis of the existing traffic conditions on Kuakini Highway from Palani Road to Hualalai Road indicates that traffic operates well (LOS B) during the morning peak hour and acceptably (LOS D or better) during the midday and afternoon peak hours. However, there are lane groups, at the intersections of Hualalai Road, Kalani Street, and Palani Road, that experience congestion (LOS D and LOS E) during the midday and afternoon peak periods. This congestion is due to the high traffic demand for the through lane, which causes traffic queues that intermittently obstruct the operation of adjacent intersections. In addition, traffic turning out of Sarona Road experiences lengthy delays during the peak hours due to the lack of traffic gaps on Kuakini Highway.

Traffic signals on Kuakini Highway within the study corridor are not synchronized.

Parking on the Kuakini Highway right-of-way occurs primarily north of Henry Street along the west (makai) shoulder. This parking appears to be utilized by residents of the Kona West condominiums located west (makai) of Kuakini Highway. The County of Hawaii operates one public parking lot with 120 stalls between Likana Lane and Kuakini Highway.

Currently, there are no bike facilities on Kuakini Highway. Cyclists were observed to ride on sidewalks where they exist, or in the roadway.

Access to businesses and residences along Kuakini Highway within the project area is provided by 28 driveways and county roadways.

Impacts

The No-Build Alternative would, in the mid-term future, result in congested traffic operations producing substantial delay throughout the project limits during both the midday and afternoon peak hours. This congestion is expected to cause traffic queues that would, in turn, cause interference between the closely spaced intersections. Resident and visitor tolerance of traffic delays is generally low in resort-oriented communities.

The proposed project will accommodate the projected Year 2020 traffic demand and will result in LOS C or better at all the intersections along Kuakini Highway during peak periods, except at the Kuakini Highway/Palani Road intersection which will operate at LOS D during midday and afternoon peak hours. However, this level-of-service is normally acceptable during peak hours. In comparison, this intersection would operate at LOS F under the No-Build Alternative.

The proposed project will eliminate approximately 40 parking spaces. Most of these spaces are unmarked informal parallel spaces along the makai side of the highway from Palani Road

to Henry Street. Six striped perpendicular spaces, within the right-of-way fronting A'ama Surf and Sport on the east (mauka) side of the highway near Hualalai Road, will also be affected. However, two parking stalls fronting this business will be provided (see below). Therefore, approximately 38 spaces will be lost.

County roadways and driveways fronting Kuakini Highway will become steeper, although access will be maintained.

Mitigation

The project will provide approximately 50 interim parallel parking spaces during off-peak hours in the outside traffic lanes. Parking will not be allowed from midday to late afternoon. When traffic volumes increase in the future, necessitating the full-time use of all four traffic lanes, off-peak parking will be discontinued. A parking bay with space for two stalls will be provided in front of A'ama Surf and Sport.

The County will work with adjacent property owners to facilitate private driveway adjustments. Curb return type driveways or driveway aprons will be constructed according to County of Hawaii standards.

2.4.3 Police, Fire and Emergency Services

Existing Conditions

The Fire Department and ambulance service are located on Palani Road a few blocks east (mauka) of the intersection with Kuakini Highway. The police station is approximately three km (two miles) north of Kuakini Highway on Queen Kaahumanu Highway.

Impacts

The proposed project will increase the capacity of Kuakini Highway, facilitating improved response time for police and other emergency vehicles.

2.5 Construction Period Impacts and Mitigation Measures

2.5.1 Maintenance of Traffic and Access

Construction will cause motorists, bicyclists and pedestrians traveling on Kuakini Highway to experience delay and inconvenience for approximately 12 months, the estimated duration of construction. However, every attempt will be made to maintain through traffic and turning and cross-street movements at intersections where they are currently allowed.

To minimize traffic and access problems on Kuakini Highway and adjacent side streets, construction phasing, pedestrian control plans, and traffic control plans will be designed and implemented. It is anticipated that traffic will be shifted to the west (makai) side, then later to the east (mauka) side of Kuakini Highway. Local access to residences and businesses will be maintained during all phases of the construction work. Pedestrian movements will be maintained, but may be temporarily relocated to provide safe passage through work areas.

Construction activities that would close moving lanes will be restricted to off-peak hours whenever feasible. Lane closures during non-peak periods may occur during clearing and grubbing, cold-planing, pavement overlaying, restriping, and when traffic control devices, such as portable traffic barriers, are being secured. It is anticipated that overlay pavement, instead of full-depth reconstruction, will be adequate in most areas, shortening the periods of lane closures. Where full-depth reconstruction is required, lane closures will last longer.

2.5.2 Air Quality

Construction will cause emissions of fugitive dust, airborne particulate matter of relatively large size. In order to minimize these emissions, the following preventative and mitigative measures will be followed as required:

- minimize land disturbance;
- stabilize the surface of dirt piles if not removed immediately;
- use watering trucks;
- minimize unnecessary vehicular and machinery activities;
- vegetate any disturbed land not used;
- remove unused material and dirt piles when they are no longer needed; and
- revegetate areas where existing landscaping was removed for construction.

2.5.3 Noise

Residences and businesses will experience short-term noise impacts during construction. Table 2-6 presents maximum noise levels (Lmax) of heavy mobile construction equipment and compressors measured at a distance of 15 m (50 ft). Noise sensitive sites along Kuakini Highway will not experience the noise levels presented in Table 2-6 because they are located further than 15 m (50 ft) from the highway.

**Table 2-6
CONSTRUCTION EQUIPMENT NOISE LEVELS**

Source	Lmax(dBA) at 15 meters (50 feet)	Model Tested
Backhoe	85	John Deere 609A
Front Loader	84	Caterpillar 980
Dozer	84	Caterpillar D7e
Grader	91	Caterpillar 16
Scraper	92	Caterpillar 660
Compressor	80-89	Various Tested

Note: The maximum noise levels are preliminary estimates based on minimal site-specific data.

Source: Federal Highway Administration, Highway Construction Noise: Measurement, Prediction, and Mitigation, 1976.

Specifications for allowable noise levels will be formulated and implemented to minimize adverse impacts to the surrounding community. Since the SDOH maintains community noise control standards (HAR Section 11-46) that apply to construction noise, these specifications will be submitted to SDOH for their review. The project will not exceed the stipulated noise limits unless a permit is granted by SDOH.

To minimize noise impacts from construction, the following mitigation measures will be followed:

- Design Considerations: during the early stages of construction plan development, considerations will be made to minimize construction noise;
- Sequence of Operations: noisy operations will be scheduled concurrently;
- Source Control: noise emissions can be controlled at the source. For example, noise reducing muffler systems lower exhaust noise by at least 10 dBA; and
- Time and Activity Constraints: noisy activity involving large machinery will be limited to daytime hours.

These mitigation measures will be incorporated into the construction plan, and noise criteria will be adhered to during construction.

2.5.4 Solid and Hazardous Waste

Widening the highway will require clearing land. Resultant spoil, consisting of asphalt, concrete, building materials, soil, vegetation, and other materials, will be transported to approved disposal sites or recycled. A grubbing, grading, and stockpiling permit will be obtained from the County of Hawaii Department of Public Works (DPW).

As described in Section 2.2.3, it is unlikely that contaminated soil will be encountered during construction. In the event that contaminated soil is encountered, the material will require special handling procedures per SDOH requirements. Treatment of contaminated materials is dependent on the character of the contamination, the volume of contaminated material, the character of the native materials, and project scheduling.

2.5.5 Utilities

Construction of the proposed project will require relocation of certain electrical, communications, water, gas, and sewer lines. The major utilities requiring relocation are a 20-inch water line on Ololi Road; a 30-inch sewer line between Keopu Drainageway and Hualalai Road; and high voltage (69 kV and 12.47 kV) electrical lines at certain locations along the highway.

Substantial planning will be needed so that interruptions in utility service to customers do not occur or are minimized. During the design and construction phases, coordination will occur with utility providers. Disruptions to utility service, if necessary, will be restricted to short-term localized events. Careful scheduling of these disruptions and prior notification of adjacent properties that will be affected by temporary service cut-offs will mitigate some of the utility relocation impacts.

2.5.6 Site Runoff

Accelerated erosion and sedimentation resulting from exposure, stockpiling and transportation of excavated material have the potential to impact water quality during construction. Sediment loading of storm water could occur when unstabilized, exposed soil at excavations and stockpiles of excavated material experience heavy rains. Sediment-laden storm water has the potential to create unacceptable levels of turbidity and high sedimentation rates in Kailua Bay.

Sedimentation and turbidity caused by sediment suspended in storm water runoff will be mitigated by Best Management Practices (BMPs) for erosion and sediment control. Agency reviews included in the NPDES permit process will assure the installation of proper sedimentation control techniques. Potential BMPs include planting of vegetation and/or mulching on highly erodible or critically eroding areas, silt fences, and construction of dikes or diversions to send runoff around erodible areas.

2.5.7 Construction Equipment Use and Maintenance

The construction staging area will be located adjacent to Kuakini Highway. Office space for the contractor and a storage area for equipment and materials will be located at the staging area.

The use and maintenance of construction equipment can pose a threat to surface and ground water. Potential spills associated with vehicle maintenance, such as changing oil and refueling equipment, can introduce new contaminants into the environment at the construction staging area. The contractor will be required to clean any spills in accordance with SDOH requirements.

2.6 Required Permits and Approvals

This project will require the following permits. Other permits may be identified as design proceeds.

County

- Grading Permit (Hawaii County Department of Public Works)
- Dig Up Street Permit (Hawaii County Department of Public Works)

State

- National Pollutant Discharge Elimination System (NPDES) Permit for the Discharge of Storm Water Associated with Construction Activity (State Department of Health)
- Underground Injection Well Permit Class V, Subclass C for the drywells, which will inject storm water runoff into the surface formation (State Department of Health)
- Noise Permit if construction noise is expected to exceed allowable levels (State Department of Health)
- Coastal Zone Management Consistency Determination (Department of Business, Economic Development and Tourism)

Economic Development and Tourism)

2.7 Consistency With Government Plans and Policies

This section includes discussion of the proposed project's consistency and compliance with relevant government plans, policies and controls for the project area.

2.7.1 Hawaii State Plans And Controls

2.7.1.1 Hawaii State Plan and Functional Plans

Plan Description

The Hawaii State Plan (June 1991) establishes broad goals, objectives, and policies. It mandates the preparation of 12 functional plans that translate the goals of the State Plan into more detailed proposals in such areas as agriculture, conservation, recreation, transportation, and water resources.

Consistency

The proposed project supports the goals and objectives of the Hawaii State Plan pertaining to the economy, the physical and natural environment, and transportation. In accordance with the Plan's economic objectives and policies, Kuakini Highway will facilitate commerce through improved transportation service, and will contribute to the quality of life by enhancing mobility. It will also contribute to the economy by providing largely federally funded construction jobs, and will therefore be consistent with the guideline encouraging federal investment in the neighbor islands.

Of the twelve Functional Plans, the Transportation Functional Plan is the most relevant. It listed improvements to Kuakini Highway as one of the implementing actions for the road infrastructure system in West Hawaii.

2.7.1.2 Coastal Zone Management Act (Chapter 205A, HRS)

Description

The objectives and policies of the Hawaii Coastal Zone Management (CZM) Program seek to protect and manage Hawaii's coastal resources. Federally assisted activities affecting Hawaii's coastal zone, such as Kuakini Highway, must be consistent with the CZM Program.

Special Management Areas (SMAs) have been designated in the coastal zone to assure that development impacts do not negatively affect environmentally important areas. The SMA zone near the project area extends from the makai edge of the right-of-way of Kuakini Highway to the shoreline. The counties administers the SMA Program.

Consistency

The project will not be within the SMA, and therefore, an SMA permit from Hawaii County is not required.

The proposed project will be within the State CZM area. Under the CZM Program, federal projects must conform with guidelines addressing seven areas: recreation resources, historic resources, scenic and open space resources, coastal ecosystems, economic uses, coastal hazards, and managing development. The following is a brief assessment of the project's consistency with these resource areas:

Potential Impacts on Historic Resources -- The proposed project will not encroach on mounds that may contain burials located adjacent to Sarona Road, or on an undeveloped parcel adjacent to Ololi Road which may contain two *heiau*. Although Laniakea Cave crosses the Kuakini Highway right-of-way, archaeological sites that might be located in the cave will not be affected.

Potential Impacts on Recreational Resources -- The proposed project will facilitate access to the shoreline and other nearby recreational sites and facilities.

Potential Impacts on Scenic and Open Space Resources -- The proposed project will not require additional right-of-way and will preserve or relocate the trees along the road. Existing mauka-makai viewsheds will not be affected.

Potential Impacts on Coastal Ecosystems -- The proposed project will not affect coastal habitats, wetlands or ecosystems because during construction, BMPs will be implemented. The project will not change total regional VMT. Therefore, total pollutant loading of Kailua Bay will be the same with or without the proposed project.

Potential Impacts on Economic Uses -- The proposed project will facilitate commerce in the area because it will improve transportation service.

Potential Impacts on Coastal Hazards -- Kuakini Highway is not located in a coastal hazard area. The proposed project will facilitate evacuation in the event of a tsunami or other emergency.

Potential Impacts on Managing Development -- The proposed project is consistent with land use plans for Kailua-Kona, as discussed in other sections below.

2.7.1.3 West Hawaii Regional Plan

Plan Description

The West Hawaii Regional Plan (November 1989) includes goals and objectives for West Hawaii development, and designated "Subregional Planning Areas," such as the Keahole to Kailua Development Plan (April 1994) (K to K Plan). The K to K Plan recommended the implementation of an efficient, safe and pleasing road network that would connect various land uses and would accommodate various modes of travel.

Consistency

Although the proposed project is slightly south of the "K to K Plan" study area, it is consistent in its emphasis on improving roadway infrastructure.

2.7.1.4 Island of Hawaii Long Range Highway Plan

Plan Description

The Island of Hawaii Long Range Highway Plan (May 1991) (hereinafter referred to as the Long-Range Plan), established a primary circulation system for the island based on existing and projected land uses and population distribution. The Long-Range Plan identified major roadway corridors that would require improvements if they are to provide sufficient capacity to accommodate traffic demands.

A Final Draft of the Hawaii Long Range Land Transportation Plan (December 1997), the update to the 1991 Long-Range Plan, has been completed, but not yet accepted. Therefore, the 1991 Long-Range Plan remains the current county transportation plan.

Consistency

The Long-Range Plan specifically states that Kuakini Highway between Palani Road and Hualalai Road should be widened to four lanes, with dedicated turn lanes provided at major intersections. The Final Draft of the 1997 Land Transportation Plan also recommended the same project to improve Kuakini Highway.

2.7.1.5 Bike Plan Hawaii

Plan Description

Bike Plan Hawaii, A State of Hawaii Master Plan (April 1994) (hereinafter referred to as the Bike Plan) is the State's guide for implementation of bikeways in the State. The Bike Plan strives to promote safe and effective integration of the bicycle into the State transportation system. The Bike Plan includes specific route and timetable recommendations for improving the State's bikeways.

Consistency

The Bike Plan recommends providing a bike route on Kuakini Highway within the next ten years. This proposed project will provide a bike route during the interim condition. Bike lanes will be delineated when the on-street parking is eliminated during the final condition. Therefore, during both the interim and final conditions, this project will provide a bicycle facility.

2.7.2 County Plans

2.7.2.1 Hawaii County General Plan

Plan Description

The Hawaii County General Plan (County Plan) (November 1989) established goals and objectives and applied them to geographic areas, including North Kona. It was adopted by ordinance and provides direction for future growth in the County.

The County Plan contains Land Use Pattern Allocation Guide (LUPAG) Maps that were prepared to suggest future land uses in the County.

Consistency

The LUPAG map shows the project area as medium density urban and resort development. The only specific recommendation for Kuakini Highway in the County Plan is to convert portions of the highway to a limited access roadway.

2.7.2.2 Kona Regional Plan

Plan Description

The Kona Regional Plan (1982) is used to implement the County Plan and serves as a guide to shape the nature of future land use actions by both public and private sectors.

Consistency

Along with a variety of other roadway projects, the Kona Regional Plan recommended improving Kuakini Highway to accommodate anticipated traffic growth from increases in population and tourism.

2.7.2.3 Master Plan for Kailua-Kona

Plan Description

The Master Plan for Kailua-Kona (April 1994) is a comprehensive plan expressing the opportunities and constraints concerning land development controls, land use options, special design treatment areas, physical design treatment and design criteria guidelines, pedestrian and vehicular circulation patterns, other infrastructure assessments, public and private community facilities, historical and cultural sites, notable natural land form and water features, views and vistas, and basic concepts of environmental character including architectural and design goals. The Master Plan for Kailua-Kona also provides evaluation mechanisms and an implementation timetable. It was adopted by the County Council on September 6, 1996.

As part of the master plan development process, a two day community workshop was conducted to generate public interest and planning ideas for Kailua-Kona. Utilizing the information from the workshop and ongoing comments from various agencies and groups,

alternative approaches to land use patterns and public infrastructure were prepared. These plans were presented at a public informational meeting, and were revised based on further input and additional technical studies.

Consistency

The Master Plan for Kailua-Kona recommended widening Kuakini Highway to a four-lane facility with bike lanes. Increasing right-of-way width was deemed undesirable due to the impact on adjacent properties.

2.7.3 Conclusion

In summary, the proposed project is consistent with or complies with appropriate State and County land use policies, plans, goals, objectives, and controls. In particular, it will facilitate implementation of the Transportation Functional Plan, the Island of Hawaii Long Range Highway Plan, the Kona Regional Plan, and the Master Plan for Kailua-Kona.

The No-Build Alternative would do little to facilitate implementation of these plans and policies.

SECTION 3

Comments and Coordination

SECTION 3

Comments and Coordination

3 COMMENTS AND COORDINATION

This section summarizes scoping activities that occurred during the preparation of the Draft Environmental Assessment (EA); the oral comments received at the public informational meeting held on July 30, 1997; the written comments that were received on the Draft EA that was announced and distributed in July, 1997; and the written comments that were received in response to a National Environmental Policy Act (NEPA) EA that was announced on March 8, 1998. Responses to the oral and written comments are also included. In addition, other sections of this EA were revised as appropriate in response to comments received.

3.1 Scoping Activities

During the preparation of the project's Draft EA, the following individuals and organizations were solicited for input and were invited to small group meetings held on August 15, 1996 at the Department of Public Work's (DPW) Kona office:

Government Agencies

- Office of Hawaiian Affairs
- Hawaii County Planning Department

Elected Officials

- Steven Yamashiro (Mayor)
- Jim Rath (County Council)
- Keola Childs (County Council)
- Virginia Isbell (House of Representatives)
- David Tarnas (House of Representatives)
- Malama Solomon (Senate)
- Andrew Levin (Senate)

Community Groups

- Hawaii Leeward Planning Conference
- Hawaiian Civic Club
- Kailua Village Design Commission
- Kailua Village Improvement Association
- Kailua-Kona Board of Realtors
- Kailua-Kona Chamber of Commerce
- Kona Outdoor Circle
- Kona Traffic Safety Committee
- National Society of Professional Engineers (Kailua-Kona Chapter)
- People's Advocacy for Trails Hawaii (PATH)
- West Hawaii Committee

Also, landowners along the project right-of-way were solicited for input and invited to a meeting held on September 13, 1996.

Attendance lists and meeting minutes are included in Appendix A.

Major concerns expressed by these individuals, organizations and agencies included the need to widen the highway, the lack of parking, the desire to maintain Kailua Village's "ambiance," undergrounding utility lines, inadequate street lighting, high vehicular speeds, synchronization of traffic signals, and landscaping. These concerns were taken into consideration during preliminary design and preparation of the Draft EA.

In addition, the following agencies were solicited for consultation because of their federal or State jurisdiction (see Appendix A):

- United States Department of the Interior, U.S. Fish and Wildlife Service;
- State Department of Land and Natural Resources, Division of Forestry and Wildlife;
- United States Department of Agriculture, Natural Resources Conservation Service;
- State Civil Defense; and
- Department of Land and Natural Resources, State Historic Preservation Division.

3.2 Availability of the Draft EA

In accordance with State law, availability of the project's Draft EA was announced in the State Environmental Notice on July 8, 1997, initiating a 30-day public comment period that formally concluded on August 7, 1997 (see Appendix A). Over a hundred copies of the Draft EA were sent to federal, State and Hawaii County agencies; business, community, civic and environmental organizations; elected officials; land and business owners along the project limits; and the public library for the project area (see Appendix A).

3.3 Availability of the NEPA EA

In accordance with the rules and regulations of NEPA and 23 CFR 771, availability of the project's NEPA EA was announced in the State Environmental Notice on March 8, 1998, initiating a 30-day public comment period that formally concluded on April 7, 1998 (see Appendix A). Oral and written comments received on the Draft EA and associated responses were included in the NEPA EA.

3.4 Public and Agency Comments

3.4.1 Public Informational Meeting

A public informational meeting was held on July 30, 1997 at Hale Halawai Park in Kailua-Kona for the purposes of briefing the public about the project and soliciting comments. Notification of the public meeting appeared in the July 25, 1997 issue of the West Hawaii Today (see Appendix A). A record of attendees was maintained and a handout providing project information was available (see Appendix A). The meeting began with a presentation on the project and was followed by an opportunity for the public to ask questions or provide comments. Over 40 people attended the meeting. The minutes of the meeting are provided in Appendix A.

Most people who spoke at the public meeting expressed opposition to the project. They were generally concerned that the proposed improvements would encourage motorists to speed and would be inconsistent with the "village" setting of Kailua-Kona. The people who spoke in favor of the project reminded the audience about recent community planning efforts, Master Plan for Kailua-Kona, that recommended widening Kuakini Highway.

Comments and questions from the meeting are paraphrased below, followed by responses.

Comment: Were traffic system management techniques studied as alternatives?

Response: Yes, transportation systems management (TSM) alternatives, such as synchronization of traffic signals and mass transit, were considered (see Section 1.3.2). Although, signal synchronization alone would not accommodate projected future traffic volumes, the proposed project includes synchronized signals. Mass transit is not widely used in Kailua-Kona, and given the short project limits and travel markets served by this section of highway, mass transit would not satisfy the purposes and needs of the project.

Comment: Kailua-Kona needs an overall plan.

Response: The Master Plan for Kailua-Kona (April 1994) is Kailua-Kona's overall plan.

Comment: Higher speeds on a four-lane road would cause reckless driving.

Response: The posted speed limit will remain the same as present. In addition, there are five traffic signals and numerous driveways. Therefore, conditions of the roadway make it unlikely that vehicles will much exceed the posted 40 km/h (25 mph) speed limit. Roadway safety will be improved by the installation of additional street lamps and the provision of bicycle and pedestrian facilities.

Comment: The project would cause congestion at both ends of the project limits.

Response: As described in Section 2.4.2, intersections along Kuakini Highway will operate at acceptable conditions, including the north and south ends. Bottlenecks at the project termini are not expected.

Comment: An environmental impact statement, not an EA, should be prepared.

Response: The County of Hawaii, Department of Public Works and the Federal Highway Administration disagree, as evidenced by the issuance of Findings of No Significant Impact (FONSI) (see Section 4 for the basis of these determinations).

Comment: The proposed project will encourage more cars to use Kuakini Highway.

Response: Since Kuakini Highway is an urban collector road, the same number of vehicles will use the highway with or without the proposed project.

Comment: The concept of "skinny streets" is more appropriate for Kuakini Highway.

Response: As a federally-funded highway facility, Kuakini Highway must conform to national standards, such as those published by the American Association of State Highway Transportation Officials (AASHTO). The lanes for the proposed project (3 m (10 ft) wide) are the narrowest recommended by AASHTO for urban collector streets. Although these narrow lanes are primarily due to the limited right-of-way available and the desire to minimize impacts to the surrounding community, these lane widths are consistent with the "skinny streets" concept.

Comment: The proposed project would strip Kailua-Kona's identity.

Response: The proposed project is consistent with the design recommended for Kuakini Highway specified in the Master Plan for Kailua-Kona. This master plan has goals and objectives to maintain the "village lifestyle and way of life." The rationale for identifying the partial width widening over the full-width widening as the preferred alternative was largely based on minimizing impacts to the community.

Comment: A network of streets and alternative routes should be considered instead of the proposed project.

Response: The Master Plan for Kailua-Kona recommended development of a network of streets to minimize the need for travel between neighborhoods using the main arterial and collector roads. The traffic analysis for this project included the network of streets within the project limits, as recommend in the Master Plan. Even with the future networking of streets, projected traffic demand on Kuakini Highway would exceed the existing capacity in about the year 2003.

Comment: There is nothing wrong with congestion on Kuakini Highway because it will encourage people to switch to public transportation.

Response: The section of Kuakini Highway proposed for improvement is an urban collector road. Its influence on modal shifts is negligible. Therefore, the same number of vehicles will use Kuakini Highway with or without the proposed project.

Comment: Construction will devastate businesses.

Response: The proposed project will have traffic impacts during construction, and unfortunately abutting businesses could experience loss of revenue because of construction-related traffic delays. However, reasonable measures will be implemented to maintain access to all businesses throughout construction. After project completion, businesses are expected to benefit from an improved Kuakini Highway. The proposed project will improve access to businesses, and residents and tourists will not have to experience traffic congestion to patronize abutting businesses.

Comment: Parking will be lost.

Response: As described in Section 2.4.2, the proposed project will eliminate areas along the existing roadway within the right-of-way currently used for parking, including six marked spaces within the right-of-way fronting A'ama Surf and Sport. In the interim condition, on-

street parking will be allowed during off-peak hours. In the future condition, on-street parking will not be allowed at any time. However, a parking bay will be constructed in front of A'ama Surf and Sport for two parking spaces.

Comment: What efforts be will made to remove parked cars during peak hours?

Response: The Police Department will be responsible for enforcing parking restrictions on Kuakini Highway.

Comment: The proposed project did not take into account the effects of tides on flooding.

Response: Kuakini Highway, with ground elevations ranging between 8 m (25 ft) to 16 m (50 ft) above mean sea level, is unaffected by the sea water table during excessive rainfall.

Comment: Trees need to be planted to make the area business friendly so people will stay in town.

Response: The project's landscaping plan will explore opportunities for shade trees and other pedestrian-friendly amenities, in addition to preserving most of the mature trees along the edge of the right-of-way.

Comment: The traffic studies are invalid because Alii Drive was under construction.

Response: Traffic counts and data collection for the traffic analysis were not conducted during construction work on Alii Drive.

Comment: Why not include parking and walkways without widening to four lanes.

Response: Providing only parking and pedestrian facilities would not address all of the project's purposes and needs.

3.4.2 Written Comments

The following agencies, businesses, organizations and individuals provided written statements on the Draft EA during the public comment period.

Federal Agencies

- U.S. Department of the Army, Corps of Engineers
- U.S. Department of the Interior, U.S. Geological Survey, Water Resources Division

State Agencies

- State of Hawaii Department of Accounting and General Services
- State of Hawaii Department of Business, Economic Development and Tourism, Office of Planning
- State of Hawaii Department of Education
- State of Hawaii Department of Health
- State of Hawaii, Office of Hawaiian Affairs

County Agencies

- County of Hawaii Department of Water Supply

- County of Hawaii, Police Department
- Mayor Yamashiro's Advisory Committee on Bicycle and Pedestrian Safety

Other Organizations and Individuals

- Aloha Petroleum
- Keola Childs
- Terry Dunlap
- William Halliday, Hawaii Speleological Society
- Hawaii Leeward Planning Conference
- Irvine Pacific Mortgage
- Janice Palma-Gleenie
- Kailua Village Improvement Association
- Kona Ranch House (2)
- Maryl Development
- Teresa L. Nakama
- Peoples Advocacy for Trails Hawaii
- Riehm Owensby Planners Architects

The following individuals provided written statements in response to the NEPA EA:

- Troy T. Fujitani, A'ama Surf & Sport
- Marie Aguilar
- Philip Mosher

These letters were reviewed and considered, and are reproduced below. Those letters containing substantive comments are immediately followed by responses. Responses were not prepared for letters which did not offer comments. Each substantive comment has been numbered in the left margin, and the associated response bears the same number. Some comments required changes, corrections, or additions to other sections of the EA.

Those who provided comments on the Draft and NEPA EAs are being provided copies of this Final EA (see Appendix A).



DEPARTMENT OF THE ARMY
PACIFIC OCEAN DIVISION, CORPS OF ENGINEERS
FORT SHAFTER, HAWAII 96858-6440



REPLY TO
ATTENTION OF

July 15, 1997

Planning and Operations Division

Ms. Donna Fay K. Kiyosaki, Chief Engineer
County of Hawaii
Department of Public Works
25 Aupuni Street, Room 202
Hilo, Hawaii 96720-4252

Dear Ms. Kiyosaki:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (DEA) for the Kuakini Highway Improvements Project (Palani and Hualalai Roads) for Kailua-Kona, Hawaii. The following comments are provided in accordance with Corps of Engineers authorities to provide flood hazard information and to issue Department of the Army (DA) permits.

a. Based on the information provided, a DA permit will not be required for the project. Please contact our Regulatory Section at 438-9258 for further information and refer to file number 970000243.

b. The flood hazard information provided in Appendix A of the DEA is correct (FEMA letter dated March 12, 1996).

Sincerely,

Paul Mizue, P.E.
Acting Chief, Planning
and Operations Division

Response to U.S. Department of the Army, Corps of Engineers

1. Thank you for the clarification of U.S. Army Corps of Engineers jurisdiction.



United States Department of the Interior

U.S. GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
677 Ala Moana Boulevard, Suite 415
Honolulu, Hawaii 96813

July 9, 1997

Jul . . . 99

Mr. Thomas Pack
Engineer
County of Hawaii, Kona Office
Department of Public Works
75-5706 Kuakini Highway
Kailua-Kona, Hawaii 96740

Dear Mr. Pack:

Subject: Draft Environmental Assessment (DEA)
Kuakini Highway Improvements Between Palani and Hualalai Roads
Kailua-Kona, Hawaii County, Hawaii

The staff of the U.S. Geological Survey, Water Resources Division, Hawaii District, has reviewed the Draft Environment Assessment, and we have no comments to offer at this time.

Thank you for allowing us to review the DEA. We are returning it for your future use.

Sincerely,

William Meyer
District Chief

Enc.

cc: Honorable Benjamin Cayetano, Governor, State of Hawaii
Mr. Clyde Shimizu, Parsons Brinckerhoff

✓
AUG 7 1980

(P)1520.7

MIC 5 007

Mr. Thomas Pack, Engineer
Department of Public Works
Hawaii County Kona Office
75-5706 Kuakini Highway
Kailua-Kona, Hawaii 96740

Dear Mr. Pack:

Subject: Kuakini Highway Improvements
Between Palani and Hualalai Roads
Kailua-Kona, Hawaii County, Hawaii

Thank you for the opportunity to review the subject document.
We have no comments to offer.

If there are any questions, please have your staff contact
Mr. Ronald Ching of the Planning Branch at 586-0490.



GORDON MATSUOKA
State Public Works Engineer

RC:jy
c: Mr. Clyde Shimizu
OEQC



**DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM**

OFFICE OF PLANNING

235 South Beretania Street, 6th Flr., Honolulu, Hawaii 96813
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BENJAMIN J. CAYETANG
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DIRECTOR, OFFICE OF PLANNING

Tel.: (808) 587-2846
Fax: (808) 587-2824

Ref. No. P-6868

August 8, 1997

AUG 19 1997

Ms. Donna Fay Kiyosaki, P.E.
Chief Engineer
Department of Public Works
County of Hawaii
25 Aupuni Street, Room 202
Hilo, Hawaii 96720

Dear Ms. Kiyosaki:

Subject: Draft Environmental Assessment (EA) for Kuakini Highway Improvements
between Palani and Hualalai Roads, Kailua-Kona, Hawaii

We have reviewed the draft EA for the proposed project and have the following comments.

We note the statement on p. 2-2 that the flood problem would not be improved until implementation of a regional flood control plan. Given the potential polluted runoff and resulting degradation of the receiving coastal waters, the EA should discuss in detail the planned flood control improvements and their effects on reducing the runoff from the widened portion of Kuakini Highway. In addition, the potential runoff should be addressed on p. 2-29 in the coastal ecosystems section.

If there are any questions, please contact Charles Carole of our Coastal Zone Management Program at 587-2804.

Sincerely,

Rick Egged
Director
Office of Planning

cc: Thomas Pack, Kona DPW
Clyde Shimizu, Parsons Brinckerhoff
Office of Environmental Quality Control

**Response to State of Hawaii Department of Business, Economic
Development and Tourism, Office of Planning**

1. As stated in Section 2.2.1, the proposed project will slightly alleviate localized flooding, but will not change the existing regional drainage conditions. The regional solution to the flooding problem is still being developed, but not as part of this project. Sections 2.2.1 and 2.7.1.2 now include discussions of potential runoff impacts to coastal ecosystems.

BENJAMIN J. CAYETANO
GOVERNOR



HERMAN M. AIZAWA, Ph.D.
SUPERINTENDENT

RECEIVED
OFFICE OF THE DIRECTOR
DEPT OF HEALTH
STATE OF HAWAII
DEPARTMENT OF EDUCATION
P O BOX 2360 97 JUL 32 A9:24
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

July 22, 1997

Mr. Thomas Pack, Engineer
Department of Public Works, Kona Office
County of Hawaii
75-5706 Kuakini Highway
Kailua-Kona, Hawaii 96740

Dear Mr. Pack:

Subject: Draft EA -- Kuakini Highway Improvements
Between Palani and Hualalai Roads

The Department of Education has no comment on the proposed improvements to Kuakini Highway.

Thank you for the opportunity to respond.

Sincerely,

A handwritten signature in dark ink, appearing to read "Herman M. Aizawa".

Herman M. Aizawa, Ph.D.
Superintendent

HMA:hy/197

cc: Governor ✓
C. Shimizu, Parsons Brinckerhoff

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



JUL 3 1 1997

LAWRENCE MIKE
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P O BOX 3378
HONOLULU, HAWAII 96801

In reply, please refer to

July 25, 1997

97-147/epo

Mr. Thomas Pack, Engineer
Department of Public Works, Kona Office
County of Hawaii
75-5706 Kuakini Highway
Kailua-Kona, Hawaii 96740

Dear Mr. Pack:

Subject: DRAFT ENVIRONMENTAL ASSESSMENT (DEA)
Kuakini Highway Improvements Between Palani
and Hualalai Roads
Kailua-Kona, Hawaii County, Hawaii

Thank you for allowing us to review and comment on the subject project. We have the following comments to offer:

Noise Concerns

1. Construction activities must comply with the provisions of Hawaii Administrative Rules, Chapter 11-46, "Community Noise Control."
 - a. The contractor must obtain a noise permit if the noise levels from the construction activities are expected to exceed the allowable levels of the regulations as stated in Section 11-46-6(a).
 - b. The contractor must comply with the conditional use of the permit as specified in the regulations and the conditions issued with the permit as stated in Section 11-46-7(d)(4).
 - c. For activities resulting in adverse noise impacts, notification of the surrounding affected areas may be required. In addition, the Department of Health may request that the contractor conduct a public information meeting in order to provide the surrounding community with information pertaining to the proposed noise emitting activity.

Mr. Thomas Pack, Engineer
July 25, 1997
Page 2

97-147/epo

Should there be any questions on these comments, please contact
Mr. Jerry Haruno, Environmental Health Program Manager of the
Noise, Radiation & Indoor Air Quality Branch at 586-4701.

Sincerely,



BRUCE S. ANDERSON, Ph.D.
Deputy Director for Environmental Health

c: The Honorable Benjamin Cayetano, c/o OEQC
Mr. Clyde Shimizu, Parsons Brinckerhoff ✓
NR&IAQB

Response to State of Hawaii Department of Health

1. The contractor will be required to comply with the provisions of Hawaii Administrative Rules, Section 11-46, including obtaining a noise permit if noise levels from construction activities are expected to exceed allowable levels.



AUG 5 1997

STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813-5249
PHONE (808) 594-1888
FAX (808) 594-1865

July 30, 1997

Thomas Pack, County Engineer
Department of Public Works
Hawaii County Kona Office
75-5706 Kuakini Highway
Kailua-Kona, Hawaii 96740

Re: Draft Environmental Assessment for Kuakini Highway
Improvements between Palani and Hualalai Roads, Kailua-Kona

Dear Mr. Pack:

Thank you very much for the opportunity to review the above-referenced Draft Environmental Assessment (DEA). The Hawaii County Department of Public Works proposes to widen, a half mile segment of Kuakini Highway from two lanes to four lanes.

The Office of Hawaiian Affairs (OHA) has some concerns with the proposed project based on the information contained in the DEA. Specific areas of concern are possible contamination by hazardous wastes, the presence of endangered and/or threatened plant species, and the presence of archaeological resources.

Section 2.2.3 of the DEA indicates that currently there are at least twenty four registered underground storage tanks (UST) containing petroleum products within 600 feet of the project area and that approximately ten UST's have "had a release of a petroleum product associated with them". (Pg. 2-6).

The Hazardous Materials Assessment (Appendix C), reveals the existence of two hazardous waste generating facilities and three registered UST's located directly along Kuakini Highway which are within the project area. Additionally, one of these three UST's (Texaco Gas Station) was documented as "leaking" in January 1993.

Based upon this information, OHA is concerned about the possibility of undocumented UST releases in the vicinity of the project area. The Hazardous Materials Assessment (Appendix C),

Letter to Thomas Pack
Page two

adequately provides relevant information with regard to UST's and hazardous waste generators. However, it is limited in that it is essentially a "records review" rather than an "assessment".

1 OHA suggests a Phase I hazardous waste study (and Phase II if necessary) be performed prior to construction activities to assess site specific impacts. Remediation measures would then be ready at the time the site is disturbed and/or contaminated media encountered.

2 Furthermore, the DEA should state that any contaminated media encountered will be remediated prior to disposal and/or reuse, and that a contaminant management plan will be prepared to address health and safety concerns.

Appendix A includes a letter from the State Department of Land and Natural Resources - Division of Forestry and Wildlife indicating that there may be potential rare or endangered plant species in the project area including *Capparis sandwichiana* and *Pritchardia affinis*.

3 The DEA addresses the possible presence of these two plant species in a rather superficial manner. The preparers of the DEA simply acknowledge *Pritchardia affinis* as being an endemic and endangered species, and provide a brief history and description of the plant. With regard to *Capparis sandwichiana*, the DEA merely states that there is "some evidence of vulnerability, but...not enough data to support listing (*Capparis sandwichiana*) as an endangered or threatened species". The DEA further concludes that "neither of these plants were identified in the project area" (Pg. 2-10). However, no additional information is provided which supports this determination.

A detailed botanical reconnaissance survey should be conducted for the entire project area to conclusively determine whether any endangered/threatened species are present. This survey should also be included as an appendix to the environmental assessment.

The Archaeological and Historical Assessment and Reconnaissance Survey indicates that there was "no evidence of any archaeological surface sites observed within the right-of-way" (Appendix F, pg. 26). However, the assessment also notes that a "grave site" and "two traditional Hawaiian mounds probably containing burials" (Appendix F, pg. 33) exist in undeveloped parcels adjacent to the Kuakini right-of-way. Additionally, previous archaeological surveys "suggest that two heiau may be present within the (adjacent) undeveloped parcel (TMK: 7-5-04:24)". (Appendix F, pg. 37)

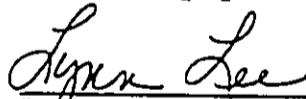
Letter to Thomas Pack
Page three

4 Based on the proximity of these archaeological sites to the Kuakini right-of-way there is a strong possibility that subsurface archaeological resources and/or human burials may exist within the project area. OHA suggests that the DEA include specific language to the effect that the State Historic Preservation Division and the Hawaii Island Burial Council will be immediately consulted in the event any subsurface features and/or cultural deposits are encountered during future development activities.

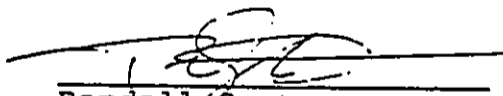
In summary, OHA requests that the preparers of the DEA address in greater detail the potential adverse impacts to and mitigative measures for (i) endangered/threatened flora which may exist in the project area, (ii) human burials and/or archaeological resources which may be encountered, and (iii) media which may have been contaminated by hazardous wastes.

OHA would appreciate the applicant's cooperation by providing our office with a written response to the above concerns. If you have any questions regarding this matter, please contact Lynn Lee, Acting Land and Natural Resources Division Officer or Richard Stook, EIS Planner at (594-1888).

Sincerely yours,



Lynn Lee
Acting Officer, Land &
Natural Resources Division



Randall Ogata
Administrator

RS:rs

cc: Clyde Shimizu, Parsons-Brinckerhoff
Office of Environmental Quality Control
Trustee Clayton Hee, Board Chair
Trustee Rowena Akana, Land & Sovereignty Chair
Trustee Abraham Aiona, Board Vice-Chair
Trustee Haunani Apoliona
Trustee Billie Beamer
Trustee Frenchy DeSoto
Trustee Moses Keale
Trustee Collette Machado
Trustee Hannah Springer
Ruby McDonald, Kona Office

Response to State of Hawaii, Office of Hawaiian Affairs

1. As described in Section 2.2.3, the reported releases of petroleum product were either remediated or were of such small quantities that they did not require remediation. There may have been undocumented releases. However, the evidence suggests that the most likely contamination, should any exist, would be petroleum hydrocarbons. Construction documents will disclose the possibility of encountering petroleum hydrocarbon contamination and address appropriate response procedures to be taken, in accordance with applicable requirements. Additional studies are not necessary at this time.
2. The statement in Section 2.2.3, ". . . handled in accordance with applicable SDOH requirements" means that any contaminated media encountered during construction will be remediated prior to on- or off-site disposal in accordance with State law and regulations. A contaminant management plan will be prepared if necessary under State Department of Health procedures. These procedures do not require the preparation of such a plan at this time.
3. The preparers of the environmental assessment conducted a site visit to determine the presence of *Capparis sandichiana* and *Pritchardia affinis*. As reported in Section 2.2.5, neither plant species was found in the project area. The results are not surprising because of the project's location within an urban area and roadway right-of-way.
4. As described in Section 2.3.3, the notification and consultation process specified in your letter if unexpected burials are discovered will be included in the construction specifications.



DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII

25 AUPUNI STREET • HILO, HAWAII 96720
TELEPHONE (808) 935-3660 • FAX (808) 935-3657
951-3660 951-3657

July 18, 1997

JUL 21 1997


TO: Ms. Donna Fay K. Kiyosaki, Chief Engineer
ATTENTION: MR. THOMAS PACK
Department of Public Works

FROM: Milton D. Pavao, Manager

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA) - KUAKINI HIGHWAY
IMPROVEMENTS BETWEEN PALANI AND HUALALAI ROADS
KAILUA-KONA, COUNTY OF HAWAII, HAWAII

Thank you for the opportunity to review the Draft EA.

We have no comments to offer at this time.


Milton D. Pavao, P.E.
Manager

KKO:gms

copy - The Honorable Benjamin J. Cayetano, Governor of the State of Hawaii
(c/o Office of Environmental Quality Control)
Mr. Clyde Shimizu, Parsons Brinckerhoff Quade and Douglas, Inc.

Stephen K. Yamashiro
Mayor



JUL 14 1997

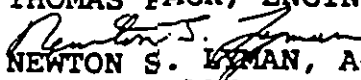
Wayne G. Carvalho
Police Chief

James S. Correa
Deputy Police Chief

County of Hawaii
POLICE DEPARTMENT

349 Kapiolani Street • Hilo, Hawaii 96720-3998
(808) 935-3311 • Fax (808) 961-2702

July 10, 1997

TO : DONNA FAY K. KIYOSAKI, CHIEF ENGINEER
ATTN : THOMAS PACK, ENGINEER, KONA OFFICE
FROM :  NEWTON S. LYMAN, ACTING ASSISTANT CHIEF,
ACTING POLICE CHIEF
SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA) - KUAKINI
HIGHWAY IMPROVEMENTS BETWEEN PALANI AND HUALALAI
ROADS, KAILUA-KONA, HAWAII COUNTY, HAWAII

We have reviewed the Draft Environmental Assessment for the above project and believe this proposal will enhance traffic safety and flow in the area.

Section 2.5.1, Maintenance of Traffic Access, adequately addresses our concerns for the safe and smooth flow of traffic during the construction phase.

Thank you for the opportunity to comment.

DAF:lk

cc: Governor Benjamin Cayetano
Mr. Clyde Shimizu

MAYOR YAMSHIRO'S ADVISORY COMMITTEE ON BICYCLE AND PEDESTRIAN SAFETY

August 4th, 1997

Mr. Thomas Pack, Engineer
Department of Public Works, Kona Office
75-5706 Kuakini Highway
Kailua-Kona, Hawaii 96740

Subject: Kuakini Highway improvements between Palani and Hualalai Roads, Kailua-Kona, Hawaii County, Hawaii

Our committee was formed by Mayor Yamashiro to advise government in the "facilitation and encouragement of bicycling and walking" throughout Hawaii County. Our comments on this project address design elements of the "partial widening" alternative (preferred by the PWD), and then suggest alternatives not considered in the Draft Environmental Assessment.

Partial Widening - Interim Condition, design elements

1. We recommend that the outside curb-lanes be 4.6 m (15-ft).
2. We recommend that other through-lanes and the median be 3 m (10-ft).

During peak traffic hours this will better accommodate shared use of the outside curb-lane by bicycles and motor-vehicles. This conforms to AASHTO guidelines for curb-lane widths that accommodate bicycles. This also conforms exactly to the proposed "Future Condition" which suggests that all five lanes be 3 m (10-ft).

During off-peak hours 2.1 m (7-ft) adequately accommodates bicycle traffic between parked cars and the adjacent traffic lane. Bicyclists routinely ride with at least 1 m (3-ft) of lateral clearance from parked cars to avoid the well known hazard of careless car-door opening.

3. We support the provision of continuous sidewalks on the mauka side.

- 2 4. We recommend that drainage improvements be addressed with this project and that continuous makai-side sidewalks be included in the project.

5. If makai sidewalks cannot be included now, we recommend that the proposed raised A/C berms be eliminated from this project (and discouraged in all future county projects).

- 3 These berms are hazardous to bicyclists, pedestrians and motor vehicles. Their main purpose seems to be discouragement of illegal car-parking. In our opinion, car-parking would be better controlled by signage and police enforcement.

Mr Thomas Pack, August 4, 1997 - page 2

Partial Widening - Future Condition, design elements

1. We support the consideration given to bicyclists through the inclusion of 1.5 m (5-ft) bicycle lanes.
2. We support the selection of 3 m (10-ft) width traffic lanes.

Bicyclists who are confident in traffic may take the center of these relatively narrow, low-speed lanes to make turning and over-taking movements. Less confident bicyclists will use the bicycle lanes and can make "pedestrian-style" left turns at any of the five signalized intersections.

Other Alternatives

Although our committee is supportive of the specific design features listed above, we could enthusiastically support alternatives that are not present in the Draft Environmental Assessment. We wonder why alternatives that would cap or reduce traffic volume within this corridor have not been considered? Alternatives that would encourage people to park their cars, and walk or ride a bicycle to their destination are widely available and well known. Why have they been omitted from consideration in the Draft Environmental Assessment?

A realistic, alternative plan might include some, or all, of the following:

- 4
- a) increasing the space available to pedestrians to 18.4 m (60-ft),
 - b) maintaining good bicycle access,
 - c) providing for extensive additional parking areas,
 - d) confining motor vehicle traffic to within two 3 m (10-ft) lanes,
 - e) opening other connecting streets to provide alternative routes,
 - f) landscaping including shade trees, gardens, murals, and attractive pedestrian areas for recreation,
 - g) covered areas for local entertainment and sidewalk cafes.

These would help reclaim the former pedestrian quality of Kailua-Kona and enhance its small town ambiance and human scale. The enclosed photographs from Tauranga, New Zealand, show an example of "main street" from a rapidly growing town of similar size to Kailua-Kona.

5

While our committee does not claim expertise in town planning or transportation planning, we are well aware of the circular reasoning evident throughout this Draft Environmental Assessment. Existing congestion problems are linked to; projected traffic increases, to exacerbated congestion, to the "need" for additional lanes, to increased traffic volume, and ultimately to even worse congestion problems. Los Angeles, Honolulu, and hosts of other cities have proved that you can't build your way out of congestion - except in the short term, it doesn't work!

We note that the minutes of both public meetings (8/15/96 and 9/13/96) record opposition to additional traffic lanes, among the eighteen

Mr Thomas Pack, August 4, 1997 - page 3

members of the public that attended.

Also the four letters received from community members including business owners, are all opposed to additional lanes.

Tellingly, the Air Quality Study lists "reduced traffic" as one of three ways "to further mitigate long-term, traffic related air pollution". It also lists "reduced individual vehicular emissions" and "improved roads". Presumably "improved roads" is included as a mitigation at the mesoscale and microscale level only.

6 The recent public comments by President Bill Clinton, at Lake Tahoe, address our need to take action regarding limiting carbon emissions, and mitigating increased global atmospheric concentration of carbon dioxide, global warming, and global sea level rising. By itself this project is miniscule in a global context. But, at some point, we need to recognize that even very small projects need to move in the right direction, and not continue to repeat out-moded practices that, cumulatively, cause negative global effects. This concept is completely ignored by the Draft Environmental Assessment.

7 Our committee feels that it is regrettable that the Statewide Planning Office of the State Department of Transportation has failed to complete its revision of the Long Range Transportation Plan. This revision was mandated by the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1990, and required meaningful, on-going public participation. It was our hope that this plan revision, would produce an expression of the transportation needs and wishes of Big Island communities. This has not happened.

We recommend that consideration of genuine alternatives be required as part of the scope of work for this Environmental Assessment. If this is not possible, we recommend that a community-based town planning contract be awarded to a consultant firm experienced in producing a genuine expression of community needs and desires (free from preconceived outcomes), relative to realistic government constraints.

We are sure that such an effort would consider more alternatives than those currently offered, and would result in improvements that would be a credit to this administration, and an asset and a joy for the people of Kailua-Kona.

Sincerely,



Ron Reilly, Chair

PO Box 458 Volcano, Hawaii 96785 (ph 967-8603)

c. Honorable Ben Cayatano, Governor, State of Hawaii
Mr. Gary Gill, Office of Environmental Quality Control
Mr. Clyde Shimizu, Parsons Brinkerhoff
Ms. Richelle Suzuki, FHWA

Enclosure

Tauranga, New Zealand - March 1997

page 1



SECTION OF TRADITIONAL (UNIMPROVED) STREET

wide traffic lanes

on street parking

relatively narrow sidewalks

car dominated/pedestrian unfriendly



SECTION OF IMPROVED STREET

greatly expanded pedestrian spaces

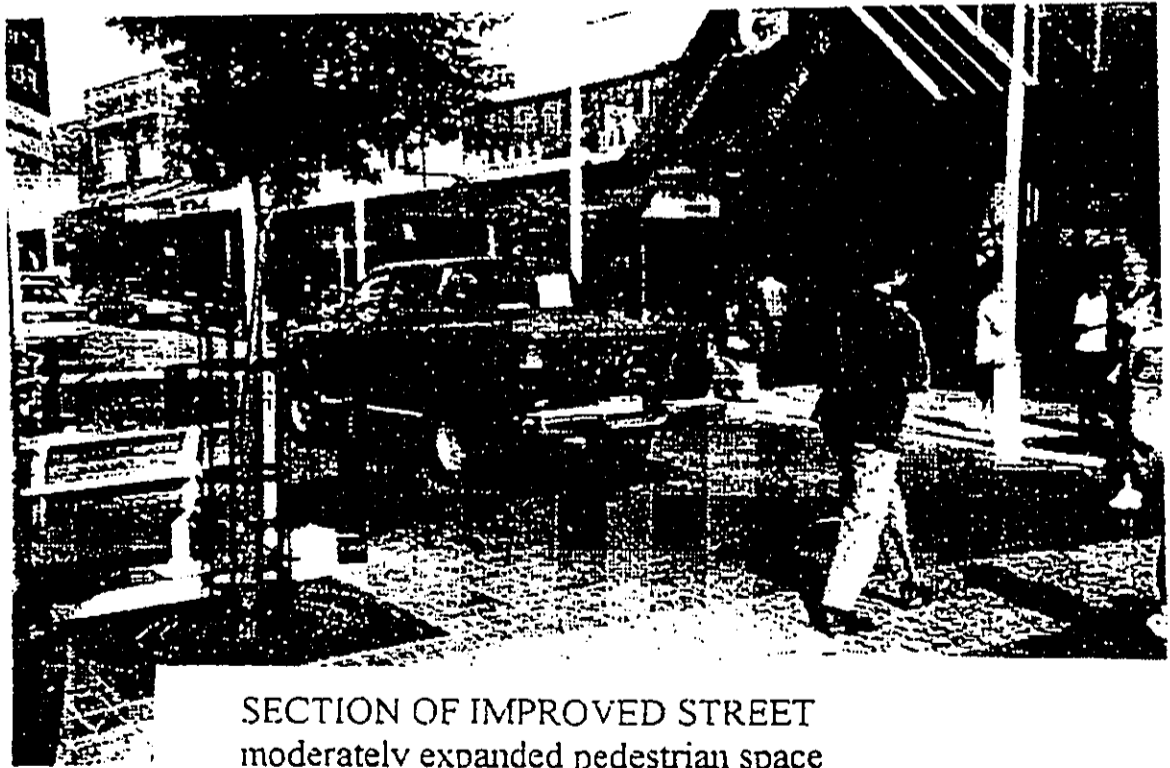
narrow two-way traffic lanes

attractive landscaping

no on-street parking



SECTION OF IMPROVED STREET
moderately expanded pedestrian space
corner "bulb-out" reduces street crossing distance
reduced width traffic lanes still allow two-way traffic
on-street parking allowed



SECTION OF IMPROVED STREET
moderately expanded pedestrian space
mid-block "bulb-out" reduces street crossing distance
reduced width traffic lanes still allow two-way traffic
on-street parking allowed



IMPROVED INTERSECTION
pedestrian friendly "traffic circle" also allows free-flowing car movement



NEW PEDESTRIAN MALL
this street formerly carried high traffic volumes and was "bumper to bumper"
congested. as a walking mall note zero traffic congestion and emissions



AMENITIES POSSIBLE WHEN CAR-DOMINATED SPACE IS RECLAIMED Note: adjacent passenger and freight railroad, off-street parking, and glimpse of Tauranga Harbor.



SIDEWALKS TRANSFORMED INTO URBAN LINEAR PARKS
The "Hotel St. Amand" offers town-centered accommodation.

Response to Mayor Yamashiro's Advisory Committee on Bicycle and Pedestrian Safety

1. The typical section of the interim condition was designed based on guidelines published by the American Association of State Highway Transportation Officials, Guide For Development of Bicycle Facilities (August 1991). This document states that "widths greater than 4.3 m (14 ft) may encourage the undesirable operation of two motor vehicles in one lane, especially in urban areas. . ."
2. The drainage problems in Kailua-Kona are regional, and their solution is beyond the scope of this project. The project will, however, improve current drainage conditions because additional dry wells will be constructed. Continuous sidewalks on both sides will be provided.
3. The project will include continuous raised sidewalks on both sides of the highway. Berms will not be used.
4. Some elements of the alternatives suggested are included in the proposed project, such as increasing space for pedestrians, maintaining good bicycle access, and landscaping. The others, such as additional parking, alternative routes, and covered areas, are projects recommended in the Master Plan for Kailua-Kona, but are beyond the scope of this project.
5. "You can't build your way out of congestion," is a valid criticism of some highway projects. This criticism may be valid for urban arterial corridors, such as freeways and arterial highways, where there is heavy congestion and high latent travel demand. Because of congestion, many travelers choose to use high-occupancy vehicles (HOV), such as municipal buses or carpools, or switch their travel times to off-peak hours. Many of these travelers might switch to a single-occupancy vehicle (SOV) mode and/or travel during peak periods if additional capacity is provided in the corridor, thereby defeating the purpose of the improvement. This criticism does not apply to the section of Kuakini Highway proposed for improvements because this roadway functions more as a collector than an arterial. Therefore, there is little, if any, latent demand. The amount of traffic using Kuakini Highway would be the same regardless of whether the project is constructed.
6. Your concern about air quality issues, and the need to reduce carbon monoxide and other pollutants globally is appreciated. However, addressing these issues at the global, national, State or even county level is beyond the scope of this project. However, the air quality analysis shows that the proposed project will improve air quality over the No Build alternative because it reduces congestion, a major source of pollution.
7. Until the revision to the Island of Hawaii Long-Range Highway Plan (May 1991) is completed and approved, the 1991 plan, which recommended implementation of the proposed project, is still in force. However, the Draft Final of the Hawaii Long Range Land Transportation Plan (January 1998), which will supercede the 1991 plan once approved, also includes the proposed project. In addition, the Master Plan for Kailua-Kona was prepared and approved recently, and this plan included a recommendation to improve Kuakini Highway as proposed in this project. This master plan process included

substantial public involvement program. With respect to alternatives, all alternatives developed during project scoping activities were addressed. Alternatives needed to address the purposes and needs of the project to move forward.



ALOHA
PETROLEUM, LTD.

P.O. Box 500 Honolulu, Hawaii 96809

AUG 21 1997

August 20, 1997

Mr. Thomas Pack, County Engineer
Department of Public Works
Hawaii County Kona Office
75-5706 Kuakini Highway
Kailua-Kona, Hawaii 96740

Re: Kuakini Highway Improvements
Between Palani and Hualalai Roads
Kailua-Kona, Hawaii County, Hawaii

Dear Mr. Pack:

Thank you for the copy of the *Draft Environmental Assessment for the Kuakini Highway Improvements*, dated July 3, 1997 and the Announcement of Public Meeting, dated July 21, 1997. Although Aloha was not able to attend this public meeting, we would like to submit our comments with respect to this project.

Based on the Draft Environmental Assessment, it appears that the proposed road widening from two lanes to four lanes of Kuakini Highway will ultimately be beneficial to the public. During the construction process however, it is important that appropriate measures be taken to minimize potential negative impacts to businesses located along the construction route. Following are issues that should be considered and/or addressed prior to construction:

- Property Access:
 - Aloha has two locations that are within the corridor of the proposed construction. They are located as follows:
 - Island Mini Mart Kailua-Kona
75-5700 Kuakini Highway
Kailua-Kona, Hawaii 96740
 - Island Mini Mart Kona
75-5675 Kuakini Highway
Kailua-Kona, Hawaii 96740

Mr. Thomas Pack
August 20, 1997
Page 2

- 1 As indicated above, both locations are located on Kuakini Highway and access into each property is extremely critical. The County should provide continual access into Aloha's retail facilities during the construction period so that drivers/customers would not be concerned about entering Aloha's property or exiting onto Kuakini Highway.
- 2 Utilities:
 - In the event of a planned utility service disruption, Aloha requests a minimum of 48-hours prior notice and then a 1-hour notice before the actual utility shut-down. Because Aloha is a retailer of food products and petroleum, any unanticipated utility disruption could cause significant harm to Aloha.

We are requesting that a copy of the *Final Environmental Assessment* be forwarded to us. If you have any questions or concerns regarding the above, please don't hesitate to contact either myself or David Jarvis at (808) 521-3872.

Thank you.

Very truly yours,



Sam Olson
Senior Vice President - Fuel Operations

cc: The Honorable Ben Cayetano
Clyde Shimizu, Parsons Brinckerhoff

so-bhs27.97

Response to Aloha Petroleum

1. During design, detailed pedestrian and traffic control plans will be prepared, in consultation with the businesses along the project limits, including Aloha Petroleum, Ltd. All reasonable measures will be implemented to ensure that the two locations you have identified will have vehicular access during the entire construction period.
2. As described in Section 2.5.5, utility customers will be notified prior to any service disruptions. The details of this notification process have not yet been determined. However, information on your notification requirements is appreciated, and will be taken under consideration during preparation of construction documents, which will specify these details.

Keola Childs
75-5648 C Mamalahoa Hwy.
Holualoa, HI 96725

Ph (808) 896-1145 / Fax (808) 322-6118
e-mail: childsk@gte.net

July 30, 1997

Mr. Clyde Shimizu, Project Manager
Parsons Brinkerhoff
1001 Bishop Street, Suite 3000
Honolulu, HI 96813

Ms. Donna Fay Kiyosaki, Chief Engineer
County of Hawaii
25 Aupuni Street
Hilo, HI 96720

RE: Proposed Kuakini Hwy. Improvements - Palani to Hualalai Rds.

I am generally in support of this project, for the following reasons:

- Lands in and around Kailua Village served by this section of road are only half developed and/or occupied today (a high vacancy level exists) per granted or planned zoning, yet the existing two lanes are clearly at capacity during morning, mid-day and afternoon peak hours on a daily workday basis;
- We have extremely poor pedestrian and bicycle facilities existing today along this road section;
- 1 • The project provides us with our best, most cost-effective opportunity to underground our overhead utility transmission lines simultaneously with construction of the road improvements, and thereby will greatly increase opportunities for tree-shaded, pedestrian friendly beautification along this corridor. Pedestrian shade is an extremely valuable asset in hot Kailua-Kona, for visitors and local residents alike, and we will not have it without placing our utility transmission lines underground.

However, the proposed plan is seriously deficient in ignoring two low-cost opportunities to improve the function and carrying capacity of this section of Kuakini Highway: the design and right-of-way acquisition for two future intersections along this section of Kuakini Hwy. for badly needed road linkages in and out of the Village core area. I strongly urge the improvement plan be amended to provide for these additions:

1. Consolidation/realignment of Sarona Road and Kalani Street T intersections.
- 2 First in priority, the two almost adjacent but opposing "T" intersections of Kalani Street (McDonald's Restaurant) and Sarona Road (Kuakini Tower/Bank of Hawaii) must and can easily be re-aligned into a single 4-way, signalized intersection.

Clyde Shimizu
Donna Fay Kiyosaki
July 29, 1997
Page 2

Kalani Street is already signalized; Sarona Rd. is not; the proposed realignment would result in the current signals being shifted just 20 - 50 feet south and eliminating a dangerous T-intersection by adding a fourth travel direction (Sarona Rd.) at this one, signalized intersection.

I have carefully study the location of buildings and parking lots on the Kuakini Tower and McDonald's sites, consulted with a civil engineer, and determined that by the county acquiring (purchase or condemnation) triangular corners of those two parcels, Sarona and Kalani Streets can each be curved to line up on a common axis at an angle of approximately 70 degrees (vs. standard 90 degrees), with enough room for abutting sidewalks around those corners. In comparison, Hanama Place intersects Kuakini Hwy at a more acute 60 degree angle (relative to the north side of that intersection); the county widened and improved Hanama Place 10 - 15 years ago for similar reasons, and this intersection angle has proved functional and safe.

Once the intersections are lined up, separate (future) action can be taken by either the county or the abutting landowner(s) along the south side of Sarona Road to widen Sarona Road to a functional forty or fifty foot width, and provide for two-way commercial traffic that provides badly needed ingress/egress to the core of the Village "superblock" in that area.

The recently adopted Kailua Village Master Plan (KVMP) calls for more intensive use of the Village core than is occurring today, with the viewpoint that such intensification is necessary to provide commercial vitality for this area. Providing additional parking for visitors, as well as making the center of the superblock commercially functional itself, is essential to doing this. In turn, additional parking and commercial activities absolutely require the construction of a new two-lane road into the heart of the super-block, where parking can occur (or else a comprehensive, well-funded public transit system linked to peripheral parking lots, none of which elements exist or are being considered today).

Excluding Ali'i Drive, there are only three possible routes for this needed access route: (i) from Hualalai Road, which will compound traffic congestion at the Hualalai Rd./Kuakini Hwy. intersection and keep nearly all future superblock-oriented traffic on the full length of Kuakini Hwy. in order to reach that access route, (ii) from Henry Street, by way of Hanama Place extension and condemnation of the 20+ public parking spaces provided on private land per S.M.A. permit condition on the "old Foodland/Club" site, or (iii) by re-aligning and widening Sarona Road as suggested here.

It would be a serious oversight to plan and widen Kuakini Highway now, especially with the thought of making traffic more functional through the Village core area, without addressing the Sarona/Kalani re-alignment and superblock access problem.

This minor improvement (acquisition of additional intersection right of way and reconstruction of the intersections) will become a *major* improvement project if left until later, due to the high inertial costs of planning/environmental requirements and joint funding processes, and also because the signals and electronics at the Kalani St. intersection have to be largely relocated anyway, as part of the already-planned widening.

Clyde Shimizu
Donna Fay Kiyosaki
July 29, 1997
Page 3

From a cost standpoint, the cost of acquiring the triangular areas at these almost-opposing T intersections could largely be recouped by sale of excess land on the north side of the new combined intersection, i.e., to the owners of the former Bank of America property. While a speculative consideration, it is highly likely to provide at least some offset to the cost of this alignment measure.

2. Acquisition of right-of-way for Henry Street extension to Hanama Place.

3 In consonance with the concept for extending Henry Street into the Village superblock, as described and depicted in the Kailua Village Master Plan, the short length of right of way needed, across vacant land in the center of the Village core, is too good an opportunity to ignore in planning and designing the layout and capacities of Kuakini Hwy.

Acquisition of this key, sub-200 foot long roadway section does not require the County to either improve this section now, as part of the Kuakini Hwy. improvement plan, nor to buy into extending an urban-standard road all the way through the superblock core over to Hualalai Road, as the KVMP might seem to indicate. It merely provides for a future linkage into the center of the superblock that takes full advantage of a high capacity mauka-makai "feed" in and out of the Village without adding cars directly on Kuakini Hwy. It allows for the separately necessary Saronia Road system to be looped into a Henry Street link whenever future economics provides private/public funding for such a linkage. Meanwhile, the capacity of the Hualalai Road intersection and the throughput capacity of the entire Kuakini Hwy. corridor are preserved via these two (Saronia and Henry) road linkage plans which can be implemented when time and economics dictate.

This Henry Street/Hanama Place linkage is important now; turn movements in and out of the property where the linkage road would be built should be planned out and designed now, so that major cuts, relocations of the intersection signals and turn lanes won't have to take place later for either private or public development of this makai parcel abutting the needed road link.

The County should amend the Kuakini Hwy. improvement plan to lay out and limit the future intersection location of a makai extension of Henry Street into the subject parcel, keeping in mind the linkage design constraints. This future (and separate) project to acquire and construct the entire linkage should then be formalized by having the Council adopt an ordinance simply establishing a Henry Street/Hanama Place road linkage plan, in keeping with the KVMP concept. Acquisition or bargaining for acquisition can follow later; meanwhile, the Kuakini Hwy. improvements in this sector can be made based on the ultimate likelihood of a fourth side to the Henry Street intersection, and the landowner can be formally notified of the county's future needs and intent. The City and County of Honolulu does this routinely (adoption of council ordinances amending the pertinent regional Development Plan) to inform the public and affected landowners of future plans and provide a capital budgeting basis.

Clyde Shimizu
Donna Fay Kiyosaki
July 29, 1997
Page 4

Other Highway Improvement Plan amendments.

4 The length of daytime peak hours along this section of highway makes it impractical to allow on-street parking during any daytime hours. The only possible daytime on-street parking hours would be between 9 - 11 a.m. and 2 - 3 p.m., Monday - Friday. Weekend volumes are unpredictable, due to the variety of Village-based events. Relying on draconian tow-away zone practices at the ends of these short week-day windows would be impractical and aggravating for everyone.

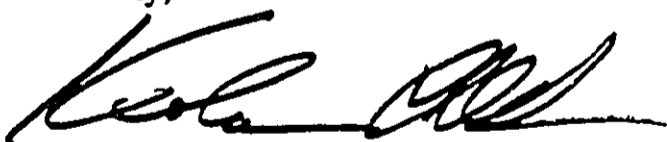
4 There is also going to be a significant business and public sacrifice made during the time these improvements are being constructed; opening the completed project up as only a two lane road with enforcement problems to clean the other two lanes would be a real public aggravation. With traffic counts steadily growing again, it seems most sensible to just keep all four expensive lanes flowing during at least daytime hours as soon as the project is complete.

5 Finally, because the project road section runs through a valuable visitor destination area as well as an established commercial center, it is extremely important that some extra expense of time and money be taken to assure that (i) the necessary retaining walls and transitions are attractive, not purely utilitarian, (ii) functional driveway ingress/egress be provided the several problem sites along this section, even if it means expensive right in/right out only ramps, and (iii) scheduling of construction be compressed, at least along the intensively used frontage between Hualalai Rd., and Hanama Pl. and at the Palani Road intersection. A 6+ day workweek should be seriously considered for these sections.

Conclusion

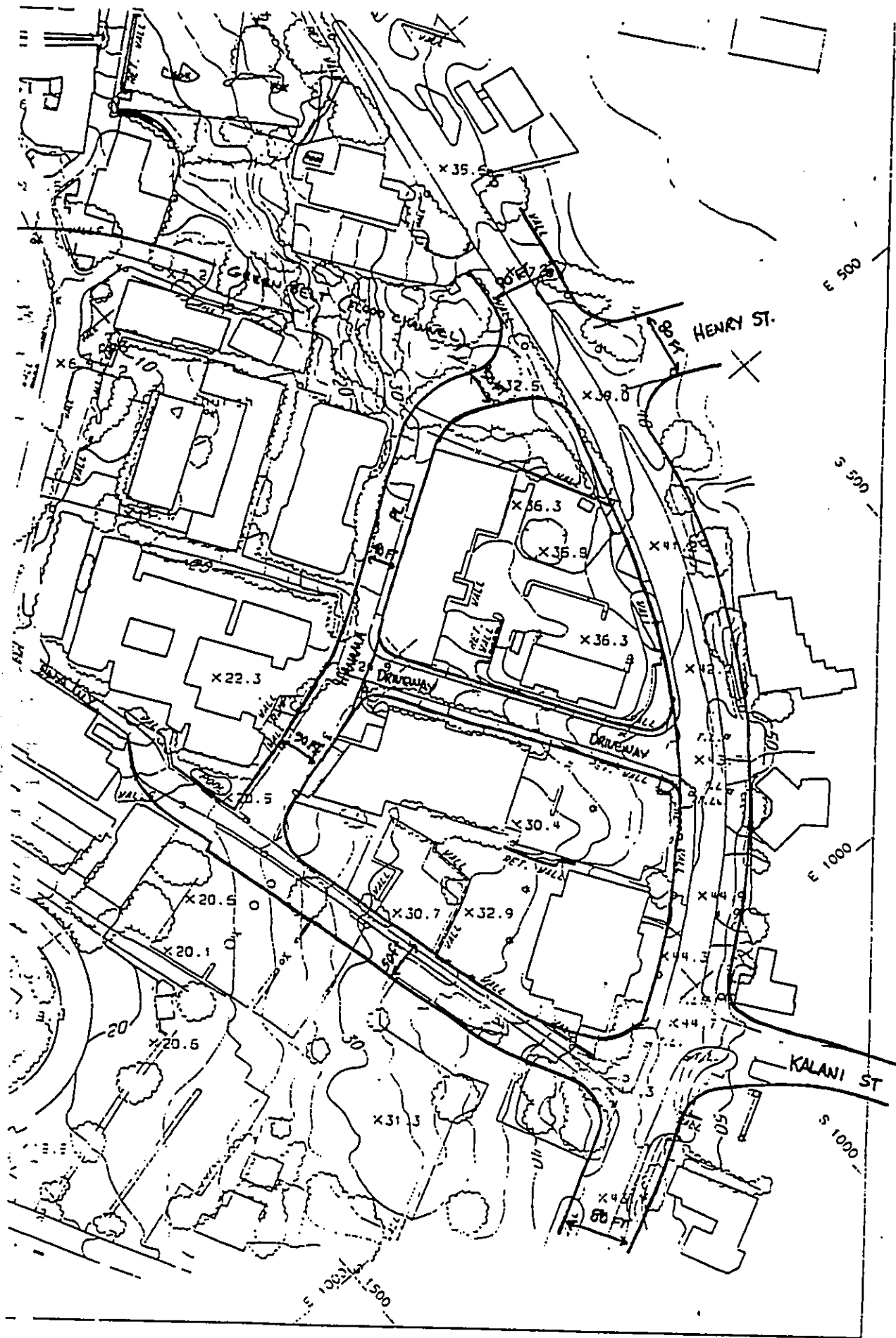
The Sarona Rd./Kalani Street is the highest priority of items presented above, because it has the greatest immediate consequence on design and functional improvement for the Village core. Please amend the Plan to include the design of the necessary improvements, and acquisition of requisite right-of-way additions. A 70 degree angle intersection is very safe, and will greatly improvement safety and functionality in this area from what exists or is proposed so far in the draft Plan.

Sincerely,

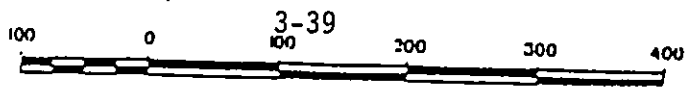


Keola Childs

DOCUMENT CAPTURED AS RECEIVED



MAP OF
HAWAII



Response to Keola Childs

1. The County of Hawaii decided against undergrounding overhead utility lines as part of the project because of its high cost, including the costs that would be paid by private property owners along the highway. The landscaping plan will explore opportunities for shade trees and other pedestrian-friendly amenities, in addition to preserving most of the mature trees along the edge of the right-of-way.
2. The consolidation/realignment of Sarona Road and Kalani Street T intersections would require right-of-way acquisition and would primarily service the internal traffic circulation of the "superblock." This proposal, while perhaps deserving further study, is not necessary to satisfy the purposes and needs of the Kuakini Highway Improvements project (see Section 1.2). As such, the suggested intersection improvements are beyond the scope of the project presently proposed. The proposed project does not preclude improvements to Sarona Road and Kalani Street in the future.
3. The Henry Street extension to Hanama Place would require right-of-way acquisition and would primarily service the internal traffic circulation of the "superblock." This proposal is beyond the scope of the Kuakini Highway Improvements project. The County of Hawaii will consider extending Henry Street at a later time. The proposed project does not preclude a Henry Street extension in the future.
4. The traffic analysis indicates that during the interim condition, two lanes during the off-peak periods will be adequate to service travel demand. The interim condition is intended as a compromise between the need to provide additional capacity during the peak hours and the need for parking on Kuakini Highway expressed by many abutting businesses. Parking during the interim condition will not be allowed from midday to late afternoon.
5. Thank you for your suggestions. They will be considered during the project's design phase.

August 7, 1997

Mr. Thomas Pack, County Engineer
County of Hawaii Kona Office
Department of Public Works
75-5706 Kuakini Highway
Kailua-Kona, Hawaii 96740

AUG 7 1997

RE: Kuakini Highway Improvements

Dear Tom:

I attended the public information meeting on July 30, 1997, where I testified in opposition of the proposed four lane widening of Kuakini Highway between Palani Road and Hualalai Road. As an architect and planner, I find the concept of widening Kuakini to four lanes to be an unacceptable solution for our traffic problems.

We need to network our street system so that alternate routes of travel are available to all motorists. Without the network of streets in place, Kuakini becomes congested and very frustrating to use.

My recommendations are:

- 1
- Network the street system
 - Provide on-street parking
 - Improve bike and pedestrian travel
 - Landscape the streets
 - Place utilities underground

I believe that if we intend to maintain the charm of Kailua-Kona, a four lane highway in the center of town will completely destroy that concept.

This engineering solution will:

- 2
- Kill the businesses along Kuakini
 - Remove the charm of Kailua-Kona Village
 - Spend taxpayers money for an improvement that is not compatible with Kailua's future
 - Divert money away from networking of existing streets

Sincerely yours,


Terry K. Dunlap

TK/cb

cc: Honorable Ben Cayetano, Governor, State of Hawaii
Mr. Clyde Shimizu, Parsons Brincklerhoff

Response to Terry Dunlap

1. The proposed project includes some of your recommendations. Specifically, it will provide on-street parking at off-peak hours during the interim phase, bicycle and pedestrian facilities, and landscaping. However, the overhead electrical and telephone utilities will not be placed underground. The County of Hawaii decided against including undergrounding in the proposed project because of its high cost, including the costs that would be paid by private property owners along the highway. While this project includes connecting Ololi Road and Kopiko Street, the Master Plan for Kailua-Kona recommended development of a network of streets to minimize the need for travel between neighborhoods using the main arterial and collector roads. The traffic analysis for this project included the network of streets within the project limits, as recommend in the Master Plan. Even with the future networking of streets, projected traffic demand on Kuakini Highway would exceed the existing capacity in about the year 2003.

2. This "engineering solution" was recommended in the Master Plan for Kailua-Kona, which took into account goals and objectives that seek to maintain the "charm" of Kailua-Kona.

Address until 28 July 1997:
101 Aupuni Street #911
Hilo, HI 96720

Address 1 August-1 January 1998:
6530 Cornwall Court
Nashville, TN 37205

15 July 1997

Mr. Clyde Shimizu
Parsons Brinkerhoff
1001 Bishop Street #3000
HONOLULU HI 96813

Dear Mr. Shimizu:

re: protection of Laniakea Cave

I recently retired as chairman of the Hawaii Speleological Survey but continue to be very active in Hawaiian speleology. Mr. Tom Pack of Hawaii County Public Works Department has kindly informed me that you are his department's consultant in the Kuakini Highway upgrade between Palani Street and Hualalai Road. Therefore I am writing you about Laniakea Cave. It appears that this exceptionally historic cave -- in 1823 the first cave in Hawaii to be termed "celebrated" -- runs beneath Kuakini Highway between Kalani Street and Hualalai Boulevard. Thus it may or may not be at risk from highway upgrading operations.

Enclosed is a copy of a map made by Prof. Dr. Stephan Kempe and myself in 1995, using Sisteco compasses and cloth tape, together with photocopies of relevant excerpts from The Journal of William Ellis, documenting the historic and cultural significance of this notable cave. To the best of my knowledge, no archaeological, biological, or geological studies have ever been made in it. Although the main entrance area is commonly used by what used to be called "hobos", formal permission to enter the main entrance is rarely granted. (Ours was kindly arranged by Miss Judy Thurston, whose forebears formerly lived at the site.) I do not know who owns the pit entrance, shown on the map as a skylight.

I have an appointment to meet with Mr. Pack and possibly others in his office, next week, and I hope to work with him in protecting this notable cave. I am enclosing also a relevant paper by a British professor of civil engineering bearing on the subject (although he has an erroneous idea about the thickness of the roofs of lava tube caves!), and also a recent paper of mine on environmental assessment of areas of this type in Hawaii. Copies of these also will be sent to Mr. Pack.

I will be in Honolulu at the end of the month, en route to the Mainland. I cannot firm up a schedule for some time yet, but I would like to meet with you on July 30 or 31 if our schedules mesh. Is it likely that you would have perhaps 30 minutes free on either of these days?

Sincerely yours, *WR Halliday*

William R. Halliday cc: T. Pack, HSS, NSS, KHS, POC

JUL 21 1997

Response to William Halliday, Hawaii Speleological Society

1. Information about Laniakea Cave has been included in an addendum archaeological and historical reconnaissance report (see Appendix F) and Section 2.3.3, which also includes the impact analysis.

M I OF HAWAII
 D ION INTERNATIONAL
 J A Y CORPORATION
 TRO I HAWAIIAN BANK
 JERRY ROTT & ASSOCIATES
 U I ELECTRIC LIGHT CO.
 U I LAND COMPANY
 K ALOA MANAGEMENT CORP.
 HUALALAI DEVELOPMENT CO.
 AHUA RANCH LIMITED
 A I IALINO RANCH
 A I IAMEHA INVESTMENT CORP.
 A I IAMEHA SCHOOLS BISHOP ESTATE
 A I ILEHU DEVELOPMENTS
 SALAKEKUA DEVELOPMENT CORPORATION
 SALAKEKUA RANCH, LTD.
 SA I RANCH
 SA I A BEACH, INC.
 E I PACIFIC COMPANY
 JNA TRANSPORTATION
 NIHAU PARTNERS L.P.
 AC FARMS OF HAWAII



HAWAII LEEWARD PLANNING CONFERENCE

P.O. BOX 635 - KAILUA-KONA, HAWAII 96745-0635

August 5, 1997

MARYL DEVELOPMENT, INC.
 MALINA KEA PROPERTIES
 MALINA LANI RESORT, INC.
 MCCANDLESS RANCH
 MOODERS ENTERPRISES
 OCEANSIDE 1250
 ORCHARD MARINE, INC.
 PARKER RANCH
 PONO HOLO RANCH
 QUEEN LIUKOKALANI TRUST
 R. M. TOWILL CORPORATION
 REAL ESTATE DEV. CONSULTANTS INC.
 REALTY INVESTMENT
 REIO & ASSOCIATES, INC.
 RIEHM OWENSBY PLANNERS
 ARCHITECTS
 SUN CABLEVISION
 THE QUEEN EMMA FOUNDATION
 TRIAD ENGINEERING
 WAIKOLOA DEVELOPMENT COMPANY
 WAIWEEA WATER SERVICES, INC.
 WEST HAWAII CONCRETE
 WIMBERLY, ALLISON, TONG & GOO

Thomas Pack, Engineer
 Department of Public Works
 Hawaii County Kona Office
 75-5706 Kuakini Hwy.
 Kailua-Kona, HI 96740

Dear Mr. Pack,

We have reviewed the Draft Environmental Assessment for Kuakini Highway Improvements and wish to make the following comments:

- From a historic perspective, the proposed widening from two lanes to four lanes is long overdue. Kailua Village is in serious need of increased capacity for traffic flow.
- We concur with the partial-width widening alternative as the most practical.

This project will not solve completely the traffic problems. Once Kuakini Highway is widened to four lanes, it will be possible to develop a system of interconnecting roads which should be the long-term goal.

Thank you for the opportunity to comment.

Very truly yours,

H. Peter L'Orange
President

HPL/ba

cc: Governor Benjamin Cayetano
% Office of Environmental Quality Control

Clyde Shimizu
Parsons Brinckerhoff

Response to Hawaii Leeward Planning Conference

Thank you for your comments.

✓

IRVINE PACIFIC MORTGAGE

75-5741 Kuakini Highway, Suite 235
Kailua-Kona, Hawaii 96740
Telephone: (808) 326-1700 Facsimile: (808) 329-6500
E-Mail ipm@aloha.net

RECEIVED

August 7, 1997

'97 AUG -8 P1:36

Gary Gill, Director
Office of Environmental Quality Control
235 South Beretania St. Suite 702
Honolulu, HI 96813

OFFICE OF ENVIRONMENTAL QUALITY CONTROL

Re: Kuakini Hwy. widening to 4 lanes

Dear Gary Gill, Director,

I am totally apposed to the project for the following reasons:

- 1 | 1. Total disruption to the businesses and the merchants that have already experience over two years of little to no business.
- 2 | 2. The loss of all of our parking stalls in front of my office will become inconvenient to our customers.
- 3 | 3. The loss of business during the estimated 13 months of construction for all of the business that require Kuakini Hwy. to lead customers to their stores and shops while the .5 mile freeway is under construction.
- 4 | 4. With the length of time of this proposed project will take, excluding change orders, most of the small businesses will be out of business.

4 | Now lets talk about the safety factor. When ever a road lends itself to speed people will take advantage of it. Four lanes would provide a race way that would provide the most unsafe pedestrian situation that could be imagined. Our town is a village not the big city. You are proposing the most dangerous situation imaginable for the tourist to have to contend with.

5 | If this project is continued there should be an environmental impact study. The environmental impact study would not be needed if the project was a small village design.

6 | Public input has been totally ignored. Our concerns have been expressed and
fallen on deaf ears. Someone will have to hear us or we will be forced to stop
this through the media and general public support.

7 | The only solution to the situation is to improve the existing street with proper
lighting, underground the utilities, park benches, a bike lane, village atmosphere
and leisure sidewalks. From a drivers standpoint when you see slow you will
drive slow.

8 | In conclusion as an opponent of the proposed four lane freeway .5 mile project, I
see nothing of benefit to the Business community or the general public with the
proposed project. Revising the proposed project to a village atmosphere will
increase business and give safety to visitors and the general public in Kona.

Lets keep Kona, Kona.

Cordially



Rick Bellan, President

Response to Irvine Pacific Mortgage

1. The proposed project will have traffic impacts during construction, and unfortunately abutting businesses could experience loss of revenue because of construction-related traffic delays. However, reasonable measures will be implemented to maintain access to all businesses throughout construction. After project completion, businesses are expected to benefit from an improved Kuakini Highway. The proposed project will improve access to businesses, and residents and tourists will not have to experience traffic congestion to patronize abutting businesses.
2. As described in Section 2.4.2, the proposed project will eliminate areas along the existing roadway within the right-of-way currently used for parking, including six marked spaces within the right-of-way fronting A'ama Surf and Sport. In the interim condition, on-street parking will be allowed during off-peak hours. Parking will not be allowed from midday to late afternoon. In the future condition, on-street parking will not be allowed at any time. However, a parking bay will be constructed in front of A'ama Surf and Sport for two parking spaces. If you currently depend on parking within the Kuakini Highway right-of-way, alternative arrangements will be necessary to ensure that your customers have access to parking during peak hours.
3. See response #1 above.
4. The proposed project will not create an unsafe roadway because it will be designed using accepted national guidelines and standards for an urban collector road. There are five traffic signals and numerous driveways within the 0.8 km (half mile) project limits. These conditions make it unlikely that vehicles will much exceed the posted 40 km/h (25 mph) speed limit.
5. If you are suggesting that the project requires the preparation of an environmental impact statement (EIS), the County of Hawaii, Department of Public Works and the Federal Highway Administration disagree, as evidenced by the issuance of Findings of No Significant Impact (FONSI) (see Section 4 for the basis of these determinations). Under State law, assertions of significance need to relate to Significance Criteria specified in the Hawaii Administrative Rules. The comment does not provide the basis for the finding of a significant impact. Therefore, an EIS will not be prepared.
6. Public input has not been ignored. This project implements a recommendation in the Master Plan for Kailua-Kona. The preparation of this master plan included substantial public input, including a task force and community workshops. For this project, public input prior to and during the draft environmental assessment was solicited at several occasions (see Sections 3.1, 3.2, 3.3 and 3.4). When planning a project such as this, the challenge is to balance the purposes and needs for the project with environmental and social impacts. What often results is a compromise, and therefore certain groups may feel that the project does not address their concerns. However, their concerns have not "fallen on deaf ears."
7. The proposed project includes many of the elements that you suggest, including better lighting, bike facilities, and sidewalks. However, overhead electrical and telephone

utilities will not be placed underground. The County of Hawaii decided against including undergrounding in the proposed project because of its high cost, including the costs that would be paid by private property owners along the highway.

8. Kuakini Highway will not become a "freeway." Within the project limits, there are five traffic signals and numerous driveways. Therefore, conditions of the roadway make it unlikely that vehicles will much exceed the posted 40 km/h (25 mph) speed limit. Benefits of the project will include reduced congestion; enhanced safety for motorists, bicylists and pedestrians; better air quality; continuous sidewalks, and bicycle facilities; maintenance of most of the existing trees and provision of additional landscaping.

✓

Kailua Village Improvement Association c/o 3465 Waiālae Avenue Suite 260
Honolulu, HI 96816

July 28, 1997

Mr. Thomas Pack, Engineer fax (808)961-8630 - 1 page
County of Hawaii
Department of Public Works - Kona Office
75-5706 Kuakini Highway
Kailua-Kona, HI 96740

Re: Draft Environmental Assessment
Kuakini Highway Improvements between Palani
and Hualalai Roads

The Kailua Village Improvement Association strongly supports the proposed improvement project as outlined in the Draft EA.


The project is substantially consistent with the recommendations of the Master Plan for Kailua-Kona. While said plan did consider various traffic/roadway changes in the Kailua Village area, all other possible street improvements considered were based on the fundamental assumption that the capacity of Kuakini would first need to be increased to a four lane configuration.

We need not only the added vehicular capacity, but also the ability to synchronize traffic flow which the EA points out cannot be effectively accomplished without the proposed expansion of lane capacity.

We also need to upgrade that corridor to enhance both the safety and aesthetics for our increasing number of pedestrians and bikers so that the conditions along Kuakini between Hualalai and Palani are attractive, inviting and safe during both daylight and evening hours.

Any project of this nature which involves "retro-fitting" an improved highway into an existing pattern of frontage development will present certain understandable concerns which need to be heard and mitigated to the extent reasonably possible. We see evidence of such efforts to mitigate some anticipated concerns for businesses along this route and we encourage that process to continue through this public review of the Draft EA. We do believe, however, that on balance it is essential that the community support this badly needed upgrade of what now stands out as the weakest link in the growing network of streets and public access corridors serving the commercial core of Kailua Village.

Sincerely,
Kailua Village Improvement Association


James S. Greenwell
President

JSG:vsc
cc: Honorable Ben Cayetano, Governor - State of Hawaii
Mr. Clyde Shimizu (fax 528-2368)

stjag@hawaii.gov

Response to Kailua Village Improvement Association

Thank you for your comments. During the design phase, the Kailua Village Improvement Association, and affected landowners and businesses will be consulted to ensure that concerns about access and other impacts are reasonably addressed.



Kona Ranch House

75-3033 Ololi Street • Kailua-Kona, Hawaii 96740 • (808) 329-7061 • Fax: (808) 329-2161

July 11, 1997

Thomas Pack, Engineer
County of Hawaii
75-5706 Kuakini Hwy.
Kailua-Kona, Hi. 96740

Subject: EA - Kuakini Hwy. improvements between Palani & Hualalai Rd.

Dear Tom,

Thank you for the EA Draft dated 5/20/97 concerning the improvements(?) projected for Kuakini Hwy.. I appreciate being kept informed regarding this important matter.

Having gone through this EA, I realized that the scope of this document may not be to address the specific concerns of each individual property owner's particular situation, but I was dismayed not to find our road, Ololi Rd., on your Figure-1 Site map, when this, in fact, is the "major" road nearest the Palani-Kuakini intersection. It is "major" in respect to its steep incline access involved and the fact that the road now unofficially connects to the back of the Club/Good Year compound, which encourages more through traffic.

There is no address in the EA as to the proposed final traffic plan regarding future access and/or egress to our business road, nor reference to the handling of the grade change to Ololi Rd.. It would be desirable to have this information, as well as, computer enhanced drawings of these changes to more fully understand the scope and impact of this improvement. I hope you are able to provide them to me.

Again, thank you for your time.


Sincerely,

Bill Brye
GM

Response to Kona Ranch House

1. Ololi Road is now shown on Figures S-1 and 1-1. The proposed project now includes improvements to Ololi Road including a connection with Kopiko Street.
2. Access to the Kona Ranch House will continue to be by Ololi Road. Detailed construction plans for the improvements to Ololi Road will be prepared during the design phase of the project. The plans will include pavement improvements and a new connection with Kopiko Street. Details of the grade changes will be developed during design.



Kona Ranch House

75-5072 Hahaione Street • Kailua-Kona, Hawaii 96740 • (808) 329-7661 • Fax: (808) 329-2161

Thomas Pack, Engineer
Dept. of Public Works
Hawaii County Kona Office
75-5706 Kuakini Hwy.
Kailua-Kona, Hi. 96740

AUG 5 1997

August 3, 1997

Ref: Kuakini Hwy. Improvements & Public Meeting 7/30/97

Dear Tom,

Thank you for the open and candid meeting held at Hale Halawai on 7/30/97. Your staff and the representatives from Parsons Brinckerhoff seemed to be listening to the audience of concerned residents and business people who voiced their opinions concerning this project, and it is my contention that there is an overwhelming resistance to the widening of Kuakini Hwy. as the current project drawings now illustrate and describe.

1 Most of the businesses along Kuakini are opposed to this project for many very sound reasons, not the least of which is the enormous cost involved to each of us in lost revenues for the 13 month road work disruption that it would cause to us, especially since there has never been a road project of this type completed on time in Hawaii. Many, myself included, would not be able to survive the economic hardship caused by this project, as my customer's would simply opt to dine elsewhere and avoid the construction congestion.

2 speeding traffic through this portion of town, which is the primary purpose of this project, makes no sense at all, either, as there will still exist bottlenecks at both ends of the highway after the completion of the project. Better we utilize this money to connect the numerous dead end streets and roads in this area to other alternative streets that already exist. If nothing else, make this project portion 3 lanes instead of four, with the center a multiple turn lane, which will add benefits that presently do not exist and should allow greater movement of traffic during peak times.

3 While there was unison at the meeting for beautifying and repairing Kuakini to make it safer, the \$6.5 million cost of this project and the cost to every business owner in its path is far in excess of what makes good sense in these economic times. No one wants a "freeway" for three quarters of a mile through town. This current design is utterly incompatible to our village lifestyle and way of life, and we hope that you will reconsider eliminating the grand scale of this project for everyone's sake.

Thank you for staying in contact.

Sincerely,


Bill Brye

CC: Gov. Ben Cayetano, Mayor Yamashiro, Councilmember Curt Tyler, Clyde Shimizu, Robert Triantos, Esq.

Response to Kona Ranch House

1. The proposed project will have traffic impacts during construction, and unfortunately abutting businesses could experience loss of revenue because of construction-related traffic delays. However, reasonable measures will be implemented to maintain access to all businesses throughout construction. After project completion, businesses are expected to benefit from an improved Kuakini Highway. The proposed project will improve access to businesses, and residents and tourists will not have to experience traffic congestion to patronize the abutting businesses.
2. As described in Section 2.4.2, intersections along Kuakini Highway will operate at acceptable conditions, including the north and south ends. Bottlenecks at the project termini are not anticipated. The proposed project includes connecting Ololi Road and Kopiko Street. The purpose of the project is not to speed traffic through town, as the speed limit will remain unchanged. The purpose of the project is to decrease congestion and delays, improving access for both residents and visitors.
3. The existing highway currently consists of three lanes with the center lane being a left-turn lane.
4. Kuakini Highway will not become a "freeway." Within the project limits, there are five traffic signals and numerous driveways. Therefore, roadway conditions make it unlikely that vehicles will much exceed the posted 40 km/h (25 mph) speed limit.
5. The proposed project is consistent with the design recommended for Kuakini Highway specified in the Master Plan for Kailua-Kona. This master plan has goals and objectives to maintain the "village lifestyle and way of life." The rationale for identifying the partial width widening over the full-width widening as the preferred alternative was largely based on minimizing impacts to the community.



JUL 15 1997

July 14, 1997

Mr. Thomas Pack, County Engineer
County of Hawaii Kona Office, Department of Public Works
75-5706 Kuakini Highway
Kailua-Kona, Hawaii 96740

RE: DRAFT ENVIRONMENTAL ASSESSMENT – KUAKINI HIGHWAY
IMPROVEMENTS BETWEEN PALANI AND HUALALAI ROADS, KAILUA-
KONA, HAWAII

Dear Tom:

These vital traffic infrastructure improvements must encompass the installation of utilities below ground. If traffic improvements are completed without placing the overhead utility lines underground, chances for completing this important task will dim substantially. We feel the Kuakini corridor improvement package moving forward - an important first step toward for the Kailua Village Special District improvements - is of paramount importance.

The Maryl Group strongly recommends proceeding forthwith with the traffic and utility improvement plan.

Sincerely,

Mark S. Richards
President

MSR/jr

cc: Honorable Ben Cayetano, Governor, State of Hawaii
c/o Office of Environmental Quality Control, 235 King Street, 4th Floor
Honolulu, Hawaii 96813
Mr. Clyde Shimizu, Parsons Brincklerhoff
1001 Bishop Street, Suite 3000
Honolulu, Hawaii 96813
Terry Dunlap, Development Manager

Response to Maryl Development

1. As described in Section 1.1, the proposed project will not include the undergrounding of overhead electric and communication lines. The County of Hawaii decided against including this in the proposed project because of its high cost, including the costs that would be paid by private property owners along the highway.

August 1, 1997

Gary Gill, Director
Office of Environmental Quality Control
235 South Beretania St. Suite 702
Honolulu, HI 96813

RECEIVED
97 AUG -5 P2:36

Re: Proposed 4 lane freeway on .5 mile stretch Kuakini, Kailua-Kona, HI
(6.5 million dollar cost)

Dear Gary Gill, Director:

I've personally attended several public information hearings with the consultants and public works representative, landowners businesses, and residence, mauka and makai of the proposed 4 lane freeway in a .5 mile stretch and we all voiced our concerns against the project, made our suggestions, and it all has fallen on deaf ears. Those who want the project do not own property, are not the majority of business owners or the work force in the proposed area. I've even taken the time to talk to the public in the Liliokulani Subdivision, Harborview, and residence in the Kealakehe area and they all said what a ridiculous and absurd plan, and they too are against the proposal.

1 We all have said that we wanted a village type atmosphere with sidewalks, shade areas and on street parking and most of all, we want the traffic to slow down, so that we will have the walk in traffic to our businesses. We (small businesses) will become an endangered species if the 4 lane freeway is allowed to proceed. The consultants plan is to widen the roads for faster traffic flow, they are wrong. The proposal of the widening of Kuakini is utterly ridiculous and insensitive to businesses and the residences mauka and makai of Kuakini Highway. Narrow roads slow traffic and on side parking during business hours and non-business hours makes a town a lot more friendly to residence and tourist alike to take their time through Kailua area. The draft did not address the detrimental affect of the construction to business, residence, tourist, and what negatives it will further have when possible project delays of the project happens on a daily basis. Today's West Hawaii article headline stated, "Skinny streets said to be cheaper, safer." The county Public Works department seems to have a double standard, keep Hilo safe and cheap, but the proposed 4 lane freeway will be dangerous for Kona pedestrians and tourist by widening Kuakini Highway, with an expensive budget of 6.5 million dollars or more, through the ever frequent job change orders.

4 | The article also stated, "Wider roads also are treated like freeways," by speeding motorists" That article as stated is so true, for even Henry street access, the motorists speed in that short a distance going up or down. Remember, "Speed Kills".

5 | The paper also stated that Wider roads increase water runoff, the draft specifically did not address the sea water table during excessive rainfall and what the affect it will have on Alii Drive. What and where will Kuakini Highway water drain to during an excessive rainfall throughout year. It only address North Kona's sloping terrain etc. Your study done by Pearson is misleading and a waste of taxpayers money. The report reads like a template of another study. It did not address the specific affects plus or minus on we the tourist, business, residence and we the entire public.

6 | We do not understand the logic of the study stating that it will rush people through this .5 mile stretch, when it should be attracting and stopping the tourist and pedestrians to walk to and from business, restaurants, small shops and view Kailua town as a small and friendly area to stop, look and enjoy. Instead all the environmental draft reads, heavy traffic, congestions and a 4 lane freeway will solve the problems. We are a tourist town and very depended on the economy of tourist stopping in our friendly town to walk, browse, and do their travel business, restaurant eatery and shop at the small businesses. We are a tourist town and depended on it's economy.

Hawaii has said to lose its ALOHA!, through bigger and thought to better 4 lane freeways. We need to really evaluate what a small village town atmosphere really is. It is certainly not 4 lane freeways on .5 mile stretch. The draft study does not look into narrow roads, and it certainly did not address water run off and the detrimental affects during a heavy down pour and how the runoff would have when it flooding affects down towards Alii Drive and all the businesses and small tourist shop that thrive there.

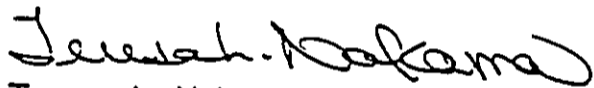
Hilo's 17 million dollar drainage canal did not ease the flooding that occur there recently. I guest no one thought, "Where is the excess water to go?" Where will the excess runoff drain to when a storm hits and the sea level tide is high and a down pour occurs and even if a drainage is said to accommodate flooding, where is the excess water to go. No were, it will settle right on the shoreline and flood over to the shops and Alii Drive and more will be added on if a 4 lane freeway is built.

7 | What ever happen to the idea of incorporating nature into the planning process, lots, of plants, greenery, trees and natural drainage side areas of grass, and shrubbery that could be incorporated into the improvements of .5 mile stretch that is left the way it is, with more of mauka and makai access to alleviate the traffic congestion that the draft states is happening.

The 6.5 million dollars being proposed is a lot of dough, the county match funds of \$1.3 million added to the Federal Dollars of 5.2 million for just a .5 mile stretch, I as taxpayer feel like this more like a highway robbery then a highway improvement. You could make the proposed section into a village type atmosphere for a lot less money then 6.5 million dollars. I'm totally against the proposed 4 lane freeway.

We have Queen Kaahumanu Highway, we need more mauka and makai exits and the overall plans needs to be overhauled drastically, to accommodate the residence, businesses, and the tourist and make Kailua what it was and should be, a village type atmosphere not a freeway on .5 mile stretch.

Sincerely,



Teresa L. Nakama
Resident of Kona

cc: Public Works
Governor Cayatano
Honorable US Daniel Inouye
Councilperson Tyler
Henry Cho
West Hawaii Today

Response to Teresa L. Nakama

1. The proposed project is not the "consultant's plan." This project was recommended in the Master Plan for Kailua-Kona. The proposed project will not transform Kuakini Highway into a "freeway." The signalized intersections and numerous driveways will remain. Moreover, the proposed lane widths are intentionally narrow to preserve the "village" feel. The project will provide the specific amenities requested by the commentor: continuous sidewalks to facilitate pedestrian access, shade areas (through preservation of most of the mature trees along the edge of the right-of-way and additional landscaping to be provided), and on-street parking (during off-peak hours so long as the interim configuration is retained).
2. Section 2.5.1 reports that motorists, bicyclists and pedestrians will experience delay while traveling through Kuakini Highway during construction. Reasonable measures will be implemented to maintain access to all businesses during construction. However, it is possible that businesses in general could experience some loss of revenue because of construction-related traffic delays. Once completed, the proposed project will improve access to businesses, including pedestrian access, and residents and tourists will not have to experience traffic congestion to patronize the abutting businesses.
3. As a federally-funded highway facility, Kuakini Highway must conform to national standards, such as those published by the American Association of State Highway Transportation Officials (AASHTO). The lanes for the proposed project (3 m (10 ft) wide) are the narrowest recommended by AASHTO for urban collector streets. Although these narrow lanes are primarily due to the limited right-of-way available and the desire to minimize impacts to the surrounding community, these lane widths are consistent with the "skinny streets" concept. The proposed project will not create a "freeway."
4. Within the project limits, which are 0.8 km (half mile) long, there are five traffic signals and numerous driveways. Therefore, roadway conditions make it unlikely that vehicles will much exceed the posted 40 km/h (25 mph) speed limit.
5. As stated in Section 2.2.1, the proposed project will not change the existing regional drainage conditions which include periodic flooding. The project will, however, improve drainage on Kuakini Highway because dry wells will be constructed. The increase in storm water flow due to the increase in impervious surface is quantified in Section 2.2.1, and the discharge of storm water flow from the road is also discussed. The increase in runoff due to the roadway improvements will be minimal, viewed in a regional context. Moreover, Kuakini Highway, with ground elevations ranging between 8 m (25 ft) to 16 m (50 ft) above mean sea level, is unaffected by the sea water table during excessive rainfall.
6. The Master Plan for Kailua-Kona, which includes the proposed project, specifies similar goals (e.g., tourist and pedestrian orientation, village environment, etc.) to those identified by the commentor. Increasing the capacity of Kuakini Highway and providing bicycle and pedestrian facilities are not viewed as inconsistent with achieving these goals.

7. Most of the existing mature trees will be preserved. Most of the trees that will be removed will be transplanted, and additional landscaping will be provided.

DOCUMENT CAPTURED AS RECEIVED



Janice palma-glennie
p.o. box 4849
kailua-kona, hawaii 96745
telephone# 808-325-3416 fax# 808-325-6322



Please enter the following into the county record. Mahalo.

July 25, 1997

RE: Kuakini Highway "Improvements" as designated in Draft Environmental Assessments

During the last meeting of the Kailua Village Design Commission regarding the above proposal, public input was given by an anxious, polite group of residents who unequivocally said they wanted to slow down and beautify Kailua "Village". They said that they want to maintain a pedestrian-friendly small-town atmosphere that encourages use of the heart of the Kailua area. They agreed that the county's focus should be to slow the flow of traffic so that small businesses in the area could flourish.

No one at the well-attended hearing, to my knowledge (except Greg Ogin whose development interests differ from those of the public attending) spoke in favor of the county's plan to develop four fast lanes through this area. The public's response to Thomas Pack, who said that three people testified in favor of the plan at an earlier hearing, was suspicion that those people (some from the county) probably would profit from bottlenecking traffic at superstores and large end-of-the-line developments.

Curtis Tyler, as the council representative of this district, challenged the "preferred" plan as not being in sync with his constituents' wishes (see his August 29, 1996 letter regarding public input), nor with the rest of those present (many of whom, along with me, were not on the roster published in the report, nor were our verbal comments against the county's preferred plan mentioned). Unfortunately I hold in my hand the latest "Kuakini Highway Improvements" Draft EA which leaves the county's unpopular plan intact with only the speed limit changed from 45 to 25 to appease those whose overall input was otherwise ignored.

1 | The plan is poor in its use of Kuakini as a short "freeway" with only one side usable by pedestrians and cyclists and these only temporary. By the time the county implements this plan, how many times will it be "varied"? Will the sidewalks be "varied" out of existence with the park benches, trees, and small businesses?

2 | Will Kuakini Highway become a California-style corridor between shopping malls owned by giant corporations as was the general fear of those attending the September meeting? Will our residents be expected to whiz from King Kamehameha (KKRC)'s Keauhou Shopping Center to the "super-stores" skirting the murdered Kailua Village?

The money that drains off to mega-stores at the end of L.A.-style malls rather than locally-owned shops like A'ama Surf and Sport is tremendous and destructive to communities

planning that leaves the car "King".

Even if your interest is strictly economic, spending a couple of hours on Kailua's downtown streets can be a lesson to what is needed here rather than spending taxes on a mini-freeway. Runners, cyclists, shoppers, and rubber-neckers get out to enjoy the climate and beauty which Kona is still famous for. Between the pier and old Hilton hotel is a steady pedestrian flow made up of locals and tourists who crowd our lacking sidewalks which regularly dead-end in the line of traffic. It takes only a brief look at these people to see that they are happily spending money in the shops and restaurants which they can reach easily by foot and whose ambiance says "Hawai'i."

3 | Kailua Village is endangered by the Kuakini plan as proposed by the County.

4 | Taxpayers want our administrators to HEAR, RESPECT, AND IMPLEMENT their suggestions and decisions. Add to Kuakini the proposed Alii Highway, and there is a strong chance that such development will eventually suck the life out of our neighborhoods and local businesses rather than protect their integrity. The consultants hired to create this plan did not hear the wishes of our community when they chose their four-lane plan which is strictly a vehicle to move vehicles.

5 | Wheels do not need to be reinvented by our county (nor ruts deepened). Communities all over the world are using modern methods melded with old-fashioned planning concepts to get communities back on track. Combined with this is the potential of planning West Hawai'i with the *ahupua'a* model used for generations to economically, environmentally and culturally balance the distribution and use of island resources. These ideas are, unfortunately, often implemented after-the-fact in many areas rather than when a community is still relatively free of the automobile-appeasing approaches of the 60's to 80's. Here is a perfect chance for Hawai'i planners to learn from the past mistakes of others, enhance a viable downtown area, and avoid future taxpayer losses which will result from poor planning of this area.

Futuristic planning information is easy to access (i.e., the most recent "Skinny Streets" workshop; information from local architectural planner Michael Riehm; Councilmen Tyler's growing library of planning information; or Ann Peterson of PATH who has access to contacts of experts at the "Kona Visions" conference). Most important to avoiding Mainland pitfalls is the creation of small town centers with everyday amenities no further from residents than a ten minute walk on safe sidewalks. Making these public areas not only pedestrian-friendly, but energy-efficient by shading them with large trees limits costs, waste of fossil fuels and time spent in a car. Where pockets of sound planning exist (like downtown Hilo) the community gathers and new small businesses pop up. When highways dissect towns and mega-stores sign, small businesses suffer and communities buckle under.

Kailua-Kona's residents have clearly stated that they do not support the plan proposed by the county for widening Kuakini Highway. Please use your integrity to rethink the county's proposed plan and help keep Kona out of the "fast lane." Mahalo for your attention.

Response to Janice Palma-Gleenie

1. Kuakini Highway will not become a "freeway." Within the project limits, there are five traffic signals and numerous driveways. Therefore, conditions of the roadway make it unlikely that vehicles will much exceed the posted 40 km/h (25 mph) speed limit. Contrary to the comment, both the interim and final roadway configurations will have space for bicyclists and pedestrians on both sides of the roadway, greatly enhancing safety from the current situation. The sidewalks will not be "varied" out of existence.
2. Kuakini Highway will remain a relatively low speed collector road (40 km/h (25 mph) speed limit) with acceptable traffic conditions (level of service C during peak hours at most places). Strip shopping malls were discouraged in the Master Plan for Kailua-Kona, and the proposed project will not cause strip mall development.
3. Upon completion, the proposed project will not adversely affect commercial or other tourism-oriented businesses in historic Kailua Village, or other commercial areas along Kuakini Highway.
4. The "four-lane plan" was recommended in the Master Plan for Kailua-Kona. The Master Plan also recommended improvements to both pedestrian and bicycle facilities, as part of the four-lane plan, and did not recommend strictly a "vehicle to move vehicles."
5. The planning principles and concepts suggested are worthy topics of future planning discussions and plan-making processes. Perhaps these issues could be addressed during the next revision of the community master plan. However, they are beyond the scope of this EA, which addresses proposed improvements to a section of Kuakini Highway. With regards to "skinny streets," as a federally-funded highway facility, Kuakini Highway must conform to national standards, such as those published by the American Association of State Highway Transportation Officials (AASHTO). The lanes for the proposed project (3 m (10 ft) wide) are the narrowest recommended by AASHTO for urban collector streets. Although these narrow lanes are primarily due to the limited right-of-way available and the desire to minimize impacts to the surrounding community, these lane widths are consistent with the "skinny streets" concept.



PATH ~ PEOPLES ADVOCACY FOR TRAILS HAWAII

PO BOX 62 ♦ KAILUA-KONA, HAWAII 96745 ♦ (808) 326-9495 ♦ FAX (808) 327-9429

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Mission

to promote traffic safety education and safe environment on roadways and trails for recreation, fitness, and alternative modes of transportation

July 25, 1997

Thomas Pack, Engineer
 Department of Public Works
 Hawaii County Kona Office
 75-5706 Kuakini Highway
 Kailua-Kona, Hawaii 96740

JUL 28 1997

Dear Tom

I will be off island and will not be able to attend the public hearing on the proposed widening of Kuakini Highway public hearing on July 31, 1997. I am submitting the following written testimony in opposition to the "improvements".

It is my contention that the widening is unnecessary given that it is based on a projected yearly demand that is out of touch with current trends and innovations in how traffic will move in the next century. In Home from Nowhere: Remaking our everyday world for the 21st Century, author James Howard Kunstler states that anyone who thinks that traffic will still be moving in the same manner 25 years in the future as it is today is "crazy".

In a World Press article, "The Search for a Technological Fix: Reinventing everything but the wheel" (December 1996, p. 9), two areas of technology are identified that "could—should—[are] slash[ing] the volume of traffic on the roads". These are:

1. **Information Superhighway:** Fiber-optics are allowing for vast amounts of information to travel at the speed of light making many of today's journeys unnecessary ~ such as visiting the stores (shopping) and going to the office.
2. **Traffic Management:** On-board devices tell drivers where the traffic jams are spreading. In addition, technology is in development that will "wrest control" from the driver when a car enters a thruway or an urban highway, and the "vehicle will in effect become part of a train. A central computer will combine with the car's own computer to lock it to the cars immediately ahead and behind." Cars will then travel closer together creating more road space.

Moreover, there is evidence (I could site a number of sources) that when bicycle and pedestrian facilities are built, people use them to commute forgoing their cars. Simply building a bike lane and a pedestrian corridor along Kuakini will alleviate the volume of cars.

Kunstler gives a chapter long discourse on the overt and hidden costs of automobiles. It is right that we realize the immense and diverse costs of automobile use as it negatively effects our lives, our environment, our lifestyle, our pocketbook, and very importantly, our communities. We should be working toward breaking the automobile addiction, instead of adding encouragement with wider roadways.

The traditional approach to traffic problems is to build more roads so that traffic can move faster. Experience has shown that this does not work. The new highways

Web-site: www.hialeha.com/path
 E-mail: path@aloha.net



spread out cities taking people farther away from stores, work, schools, and other such destinations making cars all the more necessary.

3 | The "interim condition" does not adequately provide for bicycle and pedestrian facilities. In fact, it creates a potentially dangerous environment for cyclists, by not providing space for them during the peak hours when traffic is more congested and in a hurry. In addition, cars will take advantage of the "off-peak parking area" to pass slower cars or cars waiting to turn left.

4 | There is also the concern that if this "interim condition" is built, it will never change to the "future condition" with a bike lane. Drivers will have become accustomed to using the lane, and this can create even more hostility (see attached letter to the editor) toward cyclists once (if ever) the lane is dedicated as a bike lane. In addition, the asphalt curb on the makai side of the road can be troublesome for bicyclists.

5 | The widening will spilt apart Kailua Village. With our lovely weather, we should be building lovely pedestrian promenades and facilities for non-motorized modes of transportation. These facilities would encourage a healthier, friendlier, more beautiful Kailua. Attendees at a recent community meeting, "Our Kona - Vision for the 21st Century", were asked to cite 10 things they wanted to see, and 10 things they didn't want to see in Kona. Sixty-one percent noted minimizing transportation corridors as something they wanted to see, while 76 percent stated 4-lane highways as something they did not want to see. Further, 139 percent stated they wanted to see community planning take place (*many people made more than one comment on the need*
6 | *for planning, hence the remarkable figure*). We need to adopt an overall community plan before creating an 80 foot wide strip of asphalt dividing the Village. Once the asphalt is laid, it's too late to change.

7 | There is a potential for creating a bottleneck at Palani and Hualalai Road where the pavement will narrow back down to 2 lanes. Bottlenecks are prime locations for traffic accidents.

I would also like to note that I have made these comments to the representatives from Parsons Brinckerhoff in two meetings with them. My comments are not reflected in the draft environmental assessment. I hope that this letter will meet with some attention toward the concerns expressed. In addition, PATH - Peoples Advocacy for Trail Hawai'i is defined as a "bicycle society" in the appendix which is incorrect.

Thank you for your time and thoughtful consideration before this project goes forward.

Sincerely,

Ann C. Peterson
Executive Director

cc: Honorable Ben Cayetano, Governor c/o Office of Environmental Quality Control
Clyde Shimizu, Parsons Brinckerhoff

Letters

A real challenge

Editor:

Aloha to the man driving a green mini van who yelled at me to "get off the road," as I rode my bicycle down Kuakini Highway by Hanama Place.

Believe me, I would love to do so. It is a challenge and downright scary to share the road with folks like him. However, I am an "effective cyclist" - certified to teach effective cycling the nationally recognized standard in bicycle education and I have as much right to ride my bicycle along the roadways as he does to drive his car. This is the law. Further, his comment seemed a bit ridiculous, as I could not have gotten any closer to the berm if I tried.

I wanted to catch up with him and suggest that if he is so interested in getting cyclists off the road, perhaps he would join our advocacy campaign to insure that each road has dedicated bike lanes and pedestrian walkways, or join our more expansive efforts to build a separated bike and pedestrian trail around the Big Island. In the meantime he is stuck with people like me who are trying to be part of the solution to the inherent problems of automobile addiction, i.e., air and water pollution, traffic congestion, accidents and injuries, fuel costs, insurance costs, incivility, seas of parking lots, four-lane highways instead of nature.

He's just the kind of man we need to help promote a safe environment for alternative modes of transportation - a man with passion and conviction. Or he may just be the per-

fect example of the low level of civility that comes when people commute behind tons of metal and glass - from which it's easy to yell at fellow human beings, instead of using transportation modes like walking and cycling that put people face-to-face, smiling and saying aloha. That's the kind of Kona I envision, if you do too, call PATH at 326-9495.

Ann C. Peterson
Peoples Advocacy for
Trails Hawaii

Support welcomed

Editor:

The Keahole Defense Coalition (325-1489) wishes to thank the Kona community for its quick and generous response to its recent request for financial help with its lawsuit against the Board of Land and Natural Resources, the Department of Health (DOH), and HELCO.

Thanks to the help of these supporters, we will proceed with our lawsuit. The hundreds of generous responses received to date show that the community is willing to put up its money to oppose HELCO's arrogant and ill-conceived plans to expand its Keahole facility; a plant that is already in violation of its Air Quality Permit and DOH noise pollution limits.

For our other supporters who may have been overlooked in our request for help, it is not too late. We are still a little shy of our goal, and welcome your support.

Again, thank you very much.

Keichi Ikeda
KDC President
Kailua-Kona

Response to Peoples Advocacy for Trails Hawaii

1. Year 2020 traffic projections were derived from the Island of Hawaii Long Range Highway Plan (May 1991), the most up to date transportation plan for the county at the time the traffic analysis was conducted. The commentor's information on technological trends that may decrease reliance on private automobile use is acknowledged, and it is possible that the next revision to the island's transportation plan would take into account these technological changes. However, for now, it cannot be certain that travel demand will lessen in the future due to technological changes. For example, it is anticipated that the primary industry of Kailua-Kona will continue to be tourism. As a service-based industry, it requires personal interactions, which means that workers have to physically travel to their places of work. Further, visitors will continue to create a substantial portion of total travel demand. Based on Kailua-Kona's continued reliance on tourism, it cannot be assumed at this time that travel demand on Kuakini Highway will lessen.
2. Construction of bicycle and pedestrian facilities are included with the proposed project.
3. During the interim condition, Kuakini Highway will be designated a bicycle route, which implements the recommendation of Bike Plan Hawaii (April 1994). The route will be designed based on guidelines published by the American Association of State Highway Transportation Officials (AASHTO), Guide For Development of Bicycle Facilities (August 1991). During peak periods, when parking is not allowed, the distance between the curb and the inside lane will be 14 feet, which is enough room for both vehicles and bicyclists. During off-peak periods, the distance between parked cars and the inside lane will be a minimum of six feet, which is not enough room for vehicles to pass. The interim condition provides sidewalks on both sides of the highway.
4. The future condition will eventually be implemented because future traffic demand will warrant it. Your concern that drivers, once the future condition is built, will become hostile to bicyclists is appreciated. However, four lanes will be dedicated for vehicles at all times, which will represent an improvement from the interim condition. Bicyclists will have their own dedicated bike lanes.
5. The proposed project will not split Kailua Village because the existing right-of-way will not change.
6. The proposed project will implement part of the recommended transportation component of the Master Plan for Kailua-Kona.
7. Based on the information in Section 2.4.2, congested "bottleneck" conditions at Palani and Hualalai Roads are not anticipated.



AUG 5 1997

August 1, 1997

Mr. Thomas Pack, Engineer
Department of Public Works
Hawaii County Kona Office
75-5706 Kuakini Highway
Kailua-Kona, Hawaii 96740

Re: Kuakini Highway Improvements Palani to Hualalai Road

Dear Tom:

I am submitting the following testimony **"IN OPPOSITION"** to the proposed improvements to Kuakini Highway as presented in the public hearing, July 30, 1997 in Kailua-Kona.

It is my professional opinion that the proposed improvements to the Kuakini Highway between Palani to Hualalai Road will have a major negative impact on the quality of life, economic viability, and town character of the Kailua-Kona downtown village area. The village area is one of the major attractions for both visiting tourist and local citizens and its intimate town character should be preserved to maintain it being a tourist destination in the future. The proposed roadway improvements are out of scale with the existing town fabric and would represent another of the many negative actions that have occurred to destroy what little is left of this viable and historical resource.

In lieu of the proposed action, I have the following recommendations to make:

1. An overall roadway masterplan should be developed, approved and used as a planning tool to develop strategies for dealing with the increasing traffic flow projections. The Roadway 2020 plan previously developed with Reid & Associates and the County was a good start.
2. There should be an effort to create a networking of streets especially in the downtown area to disperse the traffic and provide alternative routes for traffic circulation. The downtown area should be analyzed more thoroughly to identify possible interconnecting roadways that would contribute to an overall network.
4. Finally, due to the significance of this action, I feel a full Environmental Impact Statement should be performed.

Sincerely,

Michael J. Riehm, A.I.A.

cc: Governor, State of Hawaii, O.E.Q.C.
cc: Clyde Shimizu, Parsons Brinckerhoff

Response to Riehm Owensby Planners Architects

1. The proposed project is not out of scale with the abutting developments because the roadway improvements will occur within the existing roadway right-of-way, and the lane widths will intentionally be relatively narrow to encourage a "village" feel. In addition, the partial-width alternative was selected over the full width alternative, allowing protection of most of the mature trees along the edge of the right-of-way.
2. The Master Plan for Kailua Kona included a roadway master plan. The proposed project implements a project recommended in this master plan.
3. The Master Plan for Kailua Kona included recommendations to develop alternate routes for traffic circulation.
4. The County of Hawaii, Department of Public Works and the Federal Highway Administration disagree, as evidenced by the issuance of Findings of No Significant Impact (FONSI) (see Section 4 for the basis of these determinations). Under State law, assertions of significance need to relate to Significance Criteria specified in the Hawaii Administrative Rules. The comment does not provide the basis for the finding of a significant impact. Therefore, an EIS will not be prepared.

April 5, 1998.

Abe Wong
US Dept. of Transportation
Highway Division

Re: Proposed Kuakini Highway Improvements
Between Palani and Hualalai Roads
Kailua-Kona, Hawaii County, Hawaii

The proposed project is the habitat of a rare, threatened and endangered species. The construction would cause its extinction. The species is that rare Kona citizen who is not on any State, County or Federal governmental assistance program, who is a contributing member of society and who actually pays County, State and Federal taxes to keep our government and its programs afloat.

1 | My name is Troy Fujitani and my wife, Nicole Kahananui Fujitani and I own a "mom and pop" store on Kuakini Highway in the path of the proposed "improvements". This store is the sole means of support for ourselves and our baby. We are struggling to maintain this "home grown" business in spite of the influx of the "Big Box" stores in the new commercial center of Kailua-Kona mauka on Queen Kaahumanu Highway. If the widening of Kuakini Highway in our isolated commercial area is approved, our business will be so negatively impacted during the construction phase that we will be forced to shut our doors. Even upon completion, the new road will not be conducive to retail shopping because four lanes will invite high speed traffic and we will lose 4 of our 6 parking stalls.

2 | Aside from our predicament and that of other businesses in this area, it makes no sense whatsoever to create a four lane road from Palani to Hualalai. What will happen to the traffic when it must again merge down to two lanes south of Hualalai? The proposed expenditure of \$6.5 million for a mere one half mile stretch will not contribute much of anything to Kona's lifestyle and is a total waste of tax payer's money.

More prudent and less expensive alternatives would be as follows:

- 3 | 1. Spend the money to connect Henry Street with the Lono Kona residential area so that this traffic can access Queen Kaahumanu directly without routing through Kuakini Highway.
- 4 | 2. Synchronize the existing street lights on Kuakini Highway to smooth the flow of traffic. ✓
3. Resurface Kuakini Highway and add stack and turn lanes as needed. ✓
4. Add on-street parking (the current plan calls for elimination of 43 stalls!!)
5. Improve landscaping and connect existing sidewalks along this corridor. ✓

Thank you for your consideration. I urge you to oppose this ill conceived project.

Troy T. Fujitani, Owner
'A'ama Surf & Sport

Response to Troy T. Fujitani, A'ama Surf & Sport

1. Reasonable measures will be implemented to maintain access to all businesses during construction. When completed, the proposed project will improve access to businesses, and residents and tourists will not have to experience traffic congestion to patronize abutting businesses. The proposed project will not "invite high speed traffic" because the five existing traffic signals and numerous driveways will remain. Therefore, conditions of the roadway make it unlikely that vehicles will much exceed the posted 40 km/h (25 mph) speed limit. The commentor is correct to note the net loss of four parking spaces within the right-of-way fronting A'ama Surf & Sport. However, in the interim condition, on-street parking will be allowed during off-peak hours. Parking will not be allowed from midday to late afternoon. In the future condition, on-street parking will not be allowed at any time because of anticipated travel demand.
2. As described in Section 2.4.2, intersections along Kuakini Highway will operate at acceptable conditions, including the north and south ends. Congested conditions are not expected south of the Kuakini Highway/Hualalai Road intersection.
3. Providing access from the Lono Kona residential area to Henry Street will not address the purpose and need of the proposed project. Travel demand between residential areas south of the project area and commercial areas north of the project area still warrants capacity improvements to Kuakini Highway.
4. The proposed project includes the suggested improvements. In the interim condition, on-street parking will be allowed during off-peak hours. Parking will not be allowed from midday to late afternoon.

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HAWAII DIVISION

April 6, 1998

Marie Aguilar
P.O. Box 1874
Kailua-Kona HI 96745

✓ Mr. Abe Wong
Dept. of Transportation
Federal Highways Admins.
Honolulu, HI

Mr. Clyde Shimizu
Parsons Brinkerhoff Quade &
Douglas Inc.
808 531-7094

Honolulu, HI

Dear Gentlemen,

I am writing to you with my comments regarding the Kuakini project for Kailua-Kona, Hawaii known as 41 a in the Hawaii Long Range Land Transportation Plan. I was present for the meetings at the Interantional Kona Airport in February of this year. The meeting was very informative with the Draft Final Report. Most of the projects were discussed in short programs as they were planned in for the next twenty years. I recall that Tier I was dated 1998-2005. With the project number 41a, there seems to be alot of other project numbers before this project to even begin the process, much less to close comments on April 7, 1998 to all public comments. There is no way that the public has had time to comment on this project. I am demanding that there be a public hearing for the residents and merchants of Kailua-Kona in the next thirty days.

The downtown area has been besieged with construction for the last twenty days, and businesses have suffered a great loss because Alii Drive has been closed in the height of its busy season. The reason for the expansion on Kuakini Hwy has even been an issue is because of the poor road access from the neighborhood east of Kuakini. The street Kalani has been dead-ended, and an entire neighborhood must use Kalani to exit and enter daily onto Kuakini. The traffic light holds the traffic here to long and backs up cars during rush hours. If you would access this neighborhood traffic onto Henry Street, the congestion on Kuakini would ease up. Further, it would be a safer plan with another access in cause of serious evacuations in this area.

4 | The widening of Kuakini will displace some business who have
5 | been there for a long time. One business, A'ama will lose its
6 | parking spaces. In widening this road there is very little
7 | mention of sidewalks. There must be sidewalks along with bike
8 | lanes. The utility lines are a very big problem too. The
9 | five lane road is far too wide for the area, and I recommend
10 | that you widen the Queen Kaahumanu Highway first. The five
11 | lane traffic plan is going to cause serious problems for residents
12 | with increased speeding and will cause serious problems for patrons
13 | of business exiting onto Kuakini. There is could easily be more
14 | car accidents in the area. At present there are few safety problems.

15 | My comments to your departments are just plain simple. Widen Kuakini
16 | Hwy from Palani by adding one new lane on the Makai side, Encourage
17 | driving patterns from traffic going north to take Henry Street to
18 | Queen Kaahumanu Highway. Keep our Historical Kailua-Village pleasant
19 | to visit by allowing Alii Drive to remain open. And re-open an
20 | access for the neighborhood of Kalani Street to either Henry Street
21 | or Queen Kaahumanu Highway as before. Another suggestion would
22 | be to add an access from Kuakini Hwy near Pottery Terrace complex
23 | to Queen Kaahumanu Highway to relieve the bottle neck of traffic
24 | entering to the intersections of Hualalai.

25 | Thank you for your time. and please inform me of the public hearing
26 | on this project. Mahalo.

Sincerely,



Marie Aguilar

Response to Marie Aguilar

1. The number provided to the Kuakini Highway Improvements project in the Final Draft of the Hawaii Long Range Land Transportation Plan (December 1997) is arbitrary. The numbering within a tier does not imply a project's priority.
2. The public has had two opportunities to provide comments. First, the County of Hawaii, Department of Public Works (DPW) announced the availability of a State Draft environmental assessment (EA) on July 8, 1997, initiating a 30-day public comment period on the Draft EA. The DPW distributed over a hundred copies of the Draft EA to agencies; community, business, civic and environmental organizations; elected officials; land and business owners along the project limits, the Kailua-Kona Public Library, and interested individuals. The DPW also held a public information meeting on July 30, 1997 at Hale Halawai Park in Kailua-Kona, which was advertised in the West Hawaii Today. Second, the Federal Highway Administration (FHWA) announced the availability of a National Environmental Policy Act (NEPA) EA on May 8, 1998, initiating a 30-day public comment period on the NEPA EA. A public hearing is not required when an EA is prepared. The DPW and FHWA are not planning to conduct a public hearing. For your information, the Master Plan for Kailua Kona recommended the proposed project. The Master Plan incorporated substantial public involvement that included a task force and community workshops.
3. Providing access from the Kalani Street residential area to Henry Street (or Queen Kaahumanu Highway) will not address the purpose and need of the proposed project. Travel demand between residential areas south of the project area and commercial areas north of the project area still warrants capacity improvements to Kuakini Highway. Traffic analysis (see Section 2.4.2 and Appendix B) indicates that the Kuakini Highway/Kalani Street intersection will operate at an acceptable level-of-service under proposed project.
4. The proposed project will not require any business displacements because the improvements will take place within the existing roadway right-of-way. The six perpendicular parking spaces within the right-of-way fronting A'ama Surf & Sport will be eliminated, and replaced by two parallel spaces within a parking bay.
5. The proposed project includes the construction of continuous raised sidewalks and bike lanes.
6. The lanes for the proposed project (3 m (10 ft) wide) are the narrowest recommended by the American Association of State Highway Transportation Officials. The use of these narrow lanes is primarily due to the limited right-of-way available and the desire to minimize impacts to the surrounding community. The posted speed limit will remain the same as at present. In addition, there are five traffic signals and numerous driveways. Therefore, conditions of the roadway make it unlikely that vehicles will much exceed the posted 40 km/h (25 mph) speed limit. Roadway safety will be improved by the installation of additional street lamps and the provision of bicycle and pedestrian facilities.
7. Servicing travel demand between residential areas south of the project area and commercial areas north of the project area is one of the main purposes of the proposed

project. For this demand, a path involving Henry Street and Queen Kaahumanu Highway, while possible, is unlikely to be utilized. Kuakini Highway serves as the best route for this travel demand.

8. Alii Drive will not be affected by the proposed project.

9. See response #3.

10. A connection between Alii Drive and Queen Kaahumanu Highway near Pottery Terrace was assumed in the future (or No-Build) condition. This connection is similar to the commentor's suggestion. Even with this connection, improvements to Kuakini Highway is warranted.

11. See response #2.

RECEIVED

APR - 8 1998

HAWAII DIVISION

april 6, 1998

Philip Mosher
P.O. Box 1874
Kailua-Kona, HI 96745

Mr. Abe Wong
U.S. Department of Transportation

Honolulu, HI
808 541-2700

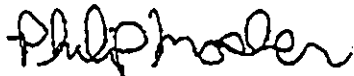
Re: Comments on Kuakini Hwy (41a) Hawaii Long RANGE Land
Transp. Plan.

Dear Mr. Wong,

I attended the Public Information Meetings February 4 & 5 of this year. Spokespersons for the County Department of Public Works and the Planning Department notified those of us in attendance that this was an informational meeting and there would be no public comments for the record. When we asked when we would be able to have public input into the proposed plans, we were told that it was a twenty-year plan and there would be a number of opportunities and hearings over the next ten to twenty years. I was quite surprised to see
1 | the article on page four A West Hawaii Today, Sunday April 5th, announcing the deadline for comments some two days later.

2 | With this short notice I am unable to enumerate all of my concerns on such short notice, but they include but are not limited to :
3 | parking; losses to existing businesses; preservation of the Kailua-Town ambiance and the apparent lack of planning of sidewalks. I believe that the community should have a chance for additional input over the next two years before the final plan is decided.

Sincerely,



Philip Mosher

P.S. I am also requesting that your office respond to these very important concerns of mine in writing.

Response to Philip Mosher

1. We are sorry that you only became aware of the proposed project a short while ago. However, you should be aware that the public had a previous opportunity to provide comments on the proposed project. The County of Hawaii, Department of Public Works (DPW) announced the availability of a State Draft environmental assessment (EA) on July 8, 1997, initiating a 30-day public comment period on the Draft EA. The DPW distributed over a hundred copies of the Draft EA to agencies; community, business, civic and environmental organizations; elected officials; land and business owners along the project limits, the Kailua-Kona Public Library, and interested individuals. The DPW also held a public information meeting on July 30, 1997 at Hale Halawai Park in Kailua-Kona, which was advertised in the West Hawaii Today.
2. As described in Section 2.4.2, the proposed project will eliminate space that could accommodate approximately 40 parked vehicles within the right-of-way. Six of these spaces are marked perpendicular spaces in front of A'ama Surf & Sport. In the interim condition, on-street parking will be allowed during off-peak hours. Parking will not be allowed from midday to late afternoon. In the future condition, on-street parking will not be allowed at any time. However, a parking bay will be constructed in front of A'ama Surf and Sport for two parking spaces.

The proposed project will have traffic impacts during construction, and unfortunately abutting businesses could experience loss of revenue because of construction-related traffic delays. However, reasonable measures will be implemented to maintain access to all businesses throughout construction.

The widened roadway could change the country road ambiance of the existing roadway. However, the proposed project will preserve most of the mature trees along the edge of the right-of-way, and provide other landscaping, which would lessen this impact. Further, the lanes for the proposed project (3 m (10 ft) wide) are the narrowest recommended by the American Association of State Highway Transportation Officials. The use of these narrow lanes is primarily due to the limited right-of-way available and the desire to minimize impacts to the surrounding community.

The proposed project will provide continuous raised sidewalks on both sides of the roadway. The sidewalks will be designed in conformance with the Americans with Disabilities Act.

3. The DPW will consult with the community and abutting businesses and landowners during the design and construction phases of the project.

SECTION 4

Finding of No Significant Impact

SECTION 4

Finding of No Significant Impact

4 FINDING OF NO SIGNIFICANT IMPACT

4.1 State EIS Law

Per the Hawaii Revised Statutes (HRS) Chapter 343 and the Hawaii Administrative Rules (HAR) Sections 11-200-9 and 11-200-11.2, the County of Hawaii Department of Public Works is issuing a Finding of No Significant Impact (FONSI) for the proposed Kuakini Highway Improvements Project Between Palani and Hualalai Road, Kailua-Kona, Hawaii County, Hawaii. The formal date of this FONSI announcement is April 23, 1998. This FONSI determination is based on an assessment of project impacts, as described in Section 2, in relation to the Significance Criteria specified in HAR 11-200-12(b). The Significance Criteria are italicized below, followed by brief assessments.

Involves an irrevocable commitment to loss or destruction of any natural or cultural resource — The proposed project will not involve the loss or destruction of any natural or cultural resource. The three possible archaeological sites identified in the project vicinity will be unaffected.

Curtails the beneficial uses of the environment — The proposed project will not curtail the beneficial use of the environment. The "environment" being used is previously acquired roadway right-of-way. The proposed project will service motorists, bicyclists and pedestrians, and represents a beneficial use of roadway right-of-way. The proposed project is consistent with official State and County land use plans for the affected area. Improvements to Kuakini Highway were specifically identified in these plans to support the goals and objectives of these plans.

Conflicts with the State's long-term environmental policies or goals and guidelines expressed in Chapter 344, HRS — The proposed project is consistent with the environmental goals and objectives of the State. The proposed project will improve air quality over the future no-build condition.

Substantially affects the economic or social welfare of the communities or State — The proposed project will not require additional right-of-way. Therefore, no residences or businesses will be displaced, nor will any neighborhood be directly affected. Upon project completion, abutting commercial land uses will benefit from improved transportation service.

Substantially affects public health — The proposed project will not detrimentally affect public health. It will improve the safety of motorists, bicyclists and pedestrians traveling on Kuakini Highway.

Involves substantial secondary impacts — The proposed project will not cause secondary impacts in light of the existing land uses and zoning designations abutting the highway.

Involves substantial degradation of environmental quality — The proposed project is located within an urban area. Studies of air quality, noise, water quality and other impacts show that the proposed project's effect on environmental quality will be minimal.

Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions — The proposed project will not cause substantial urban development or induce development out of character with the existing community in the project area. Therefore, minimal cumulative impacts are expected. The proposed project will not create a commitment to undertake larger actions.

Substantially affects a rare, threatened or endangered species, or its habitat — There are no rare, threatened or endangered plant or animal species in the area directly affected by the proposed project.

Detrimently affects air or water quality or ambient noise levels — Some localized areas near the highway will continue to experience worst-case carbon monoxide (CO) levels that are slightly greater than the stringent State Ambient Air Quality Standard (SAAQS). This finding is unremarkable because many urban areas in Hawaii near traffic congestion periodically experience violations of the SAAQS, including Kuakini Highway under present conditions. Mesoscale air quality analysis indicates better regional air quality with the proposed project than with the No-Build alternative. Traffic noise levels under the proposed project will not approach or exceed the Federal Highway Administration Noise Abatement Criteria, nor will there be a substantial increase in noise according to the State of Hawaii Department of Transportation Noise Analysis and Abatement Policy (October, 1996). Construction activities can adversely affect the water quality of nearby coastal areas. However, Best Management Practices for erosion and sediment control will be implemented, which will minimize water quality impacts. Long-term water quality impacts due to the project are not expected because total regional vehicle miles traveled will be the same under both the proposed project and the No-Build Alternative.

Affects or is likely to suffer damage by being located in an environmentally sensitive area — The proposed project is located in an urban setting within a roadway right-of-way which is not environmentally sensitive. The proposed project is an area susceptible to flooding, earthquakes and volcanic eruptions. However, the project will not increase hazard exposure, and will enhance evacuation and emergency response.

Substantially affects scenic vistas and viewplanes identified in county or state plans or studies — The proposed project will not affect existing eastern (mauka) and western (makai) viewplanes.

Requires substantial energy consumption — The proposed project will reduce regional energy consumption in comparison to the No-Build alternative because of improved traffic flow on Kuakini Highway. Traffic congestion is a major source of energy waste.

4.2 National Environmental Policy Act

The Hawaii Division of the Federal Highway Administration is also issuing a FONSI on the basis of the DPW evaluation of significance (see above). Under the rules and regulations of the U.S. Department of Transportation, the FONSI is issued as a separate document included with this EA.

SECTION 5

References

SECTION 5

References

5 REFERENCES

- American Association of State Highway Transportation Officials, Guide For Development of Bicycle Facilities, August 1991.
- County of Hawaii, Department of Planning, Keahole to Kailua Development Plan, prepared by R.M. Towill, April 1991.
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- State of Hawaii, Department of Business Economic Development & Tourism, Data Book 1994, A Statistical Abstract, 1995.
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- State of Hawaii, Office of the Governor, Office of State Planning, Hawaii State Plans - State Functional Plans, June 1991.
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- United States Department of Commerce Census Bureau, Census of Population, Number of Inhabitants, Hawaii, 1970, 1980, and 1990.
- United States Department of the Interior, United States Geological Survey, Volcanic and Seismic Hazards of the Island of Hawaii, 1991.

Appendix A
Agency Consultation Letters
Public Participation Activities
Notice of Draft Environmental Assessment

Appendix A
Agency Consultation Letters
Public Participation Activities
Notice of Draft Environmental Assessment



Parsons
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Pacific Tower, Suite 3000
1001 Bishop Street
Honolulu, HI 96813
808-531-7094
Fax: 808-528-2360



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3202
Honolulu, HI 96850
February 10, 1998

15-14
FEB 11 1998
IN REPLY REFER TO
HDA-HI

January 22, 1998

Ms Ruby McDonald
Office of Hawaiian Affairs
75-5702 Hanama Place, Suite 107
Kailua-Kona, Hawaii 96740

Subject Kuakini Highway Improvements Between Palani and Hualalai Roads

Dear Ms McDonald:

Enclosed is a copy of the historic and archaeological reconnaissance survey report prepared by Cultural Surveys Hawaii (CSH) for the subject Hawaii County Department of Public Works project. Also enclosed is an addendum report on Laniakea Cave. To the best of our knowledge, no archaeological survey has ever been done in the cave.

All the proposed work will occur in the existing right-of-way and the enclosed report by CSH indicates that there are no historic or archaeological sites in the proposed construction zone. CSH also believes that the proposed work will not affect Laniakea Cave because the cave has not sustained major damage from above-ground conditions.

If you have any comments on the reports or have any knowledge of traditional cultural properties in the project area, we would appreciate your input. Please provide the comments or information by February 6, 1998.

Please call me at (808) 566-2235 if you have any questions.

Sincerely yours,
Parsons Brinckerhoff Quade & Douglas, Inc.

Leah Yacawa
Leah Yacawa, AICP
Planner

Enclosure

Over a Century of
Engineering Excellence

Michael D. Wilson
Chairperson and State Historic Preservation Officer
State of Hawaii Department of Land and Natural Resources
33 South King Street, 6th Floor
Honolulu, Hawaii 96813

Attention: Mr. Pat McCoy

Subject Kuakini Highway Improvements Between Palani and Hualalai Roads
Kailua-Kona, Hawaii County, Hawaii
Section 106, National Historic Preservation Act
Determination of No Effect

Dear Mr Wilson:

In a letter dated May 23, 1997, the Federal Highway Administration (FHWA) requested that the State Historic Preservation Officer (SHPO) concur with a "no effect" determination for the proposed Kuakini Highway Improvements Between Palani and Hualalai Roads, per Section 106 of the National Historic Preservation Act (see enclosure). The basis of the FHWA "no effect" determination is that the proposed project will not encroach upon the properties (TNMKs 7-5-07-28 and 7-5-04-24) adjacent to the project limits that may contain possible archaeological sites eligible for the National Register of Historic Places. It was reported in the May 23 letter that the County of Hawaii was not planning to include construction of the Ololi Road / Kopiko Street connection with this project. Although the project has now been amended to include construction of the Ololi Road / Kopiko Street connection, TNMK 7-5-04 24 will still not be affected.

In a letter dated June 20, 1997, the SHPO stated that concurrence could not be provided until consultation was conducted with Native Hawaiian organizations and individuals, and recommended that the project solicit input from the Office of Hawaiian Affairs (OHA) and the Kona Hawaiian Civic Club (see enclosure). Following this recommendation, a copy of the Cultural Surveys Hawaii (CSH) reconnaissance survey report was sent to both organizations (see enclosure). To date, neither organization has provided comments on the CSH report or additional information.

Following the completion of the project's draft environmental assessment, Mr. William R. Halliday, retired chairperson of the Hawaii Speleological Survey, provided information about Laniakea Cave

CC: Mr. Kazu Hayashida, State of Hawaii, Department of Transportation w/o encl
Ms. Donna Kiyosaki, Chief Engineer, Department of Public Works, County of Hawaii w/o encl
Mr. Clyde Shimizu, Parsons Brinckerhoff Quade & Douglas, Inc. w/o encl
Mr. Kevin Ito, HDOOT, HWY-DS
Mr. Paul Nash, Hawaii County, DPW

Based on mapping of the cave provided by Mr. Halliday and information in an addendum report prepared by CSH (see enclosure), it appears that the cave crosses below Kuakini Highway just south of the Hualalai intersection, and is within the project limits. The cave appears not to have been encountered during prior surface disturbance (i.e., construction of roadways and buildings), including construction of the existing Kuakini Highway and the underground utilities within the right-of-way. Information about Laniaka Cave was sent to OHA (Ms. Lynn Lee and Ms. Ruby McDonald) and the Kona Hawaiian Civic Club for comments (see enclosure). These organizations have not provided any additional information or comments.

On January 28, 1998, Mr. Mark Smith of your staff and Mr. Thomas Pack of the County of Hawaii Department of Public Works explored the cave. We understand that Mr. Smith concluded that the cave would not be affected by the proposed project, including the relocation of an existing sewer line, because of its depth below the surface.

Based on the information herein provided, the FHWA still finds that the proposed project will have "no effect" on the two sites identified in the May 23, 1997 letter. The FHWA also finds that the proposed project will have "no effect" on Laniaka Cave. Although no impacts are expected, should the sewer relocation or other work associated with the project penetrate the cave, all work will cease in the area. The SHPO will be immediately notified and consulted with on the appropriate treatment measures. Project construction will proceed after all agreed upon treatment measures have been implemented.

The FHWA requests that the SHPO concur with these "no effect" determinations.

Please contact me at (808) 541-2530 if there are any questions.

Sincerely yours,



Richelle M. Suzuki
Transportation Engineer

Enclosures

- 1) Letter from the FHWA to the SHPO dated May 23, 1997
- 2) Letter from the SHPO to FHWA dated June 20, 1997
- 3) Letters from Parsons Brinckerhoff to the Office of Hawaiian Affairs dated July 1, 1997, January 12, 1998 and January 22, 1998
- 4) Letters from Parsons Brinckerhoff to the Kona Hawaiian Civic Club dated July 1, 1997 and January 12, 1998
- 5) Addendum to an Archaeological and Historic Assessment and Reconnaissance Survey of the Olohi Road Right-of-way and a Portion of the Kuakini Highway Right-of-way in the Ahupua'a of Lanihale, Moeaoua, Keopou and Honua'ula, Kaliua Town, North Kona, Island of Hawaii, Cultural Surveys Hawaii, January 1998



Parsons
Brinckerhoff
Pacific Tower, Suite 3000
1001 Bishop Street
Honolulu, HI 96813
808-531-7094
Fax: 808-528-2268

July 1, 1997

Ms. Lynn Lee
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

RE: Kuakini Highway Improvements between Palani and Hualalai Roads

Dear Ms. Lee.

The Hawaii County Department of Public Works (DPW) is evaluating improvements to Kuakini Highway from Palani to Hualalai Roads on the island of Hawaii. All proposed work would occur in the existing right-of-way and the enclosed report from Cultural Surveys Hawaii indicates that there are no historic sites in the proposed construction zone. However, if you have any knowledge of traditional cultural properties, we would appreciate your input.

If you have any comments on the report, please send them to me by August 1, 1997.

Feel free to call me at 531-7094 if you have any questions.

Sincerely yours,


Jan Reichelderfer
Environmental Planner

Enclosure

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Parsons
Brinckerhoff
Pacific Tower, Suite 3000
1001 Bishop Street
Honolulu, HI 96813
808-531-7094
Fax: 808-528-2268

July 1, 1997

Ms. Leinara Damate, President
Kona Hawaiian Civic Club
P.O. Box 4098
Kailua-Kona, Hawaii 96745

RE: Kuakini Highway Improvements between Palani and Hualalai Roads

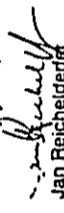
Dear Ms. Damate:

The Hawaii County Department of Public Works (DPW) is evaluating improvements to Kuakini Highway from Palani to Hualalai Roads in Kailua-Kona on the island of Hawaii. All proposed work would occur in the existing right-of-way and the enclosed report from Cultural Surveys Hawaii indicates that there are no historic sites in the proposed construction zone. However, if you have any knowledge of traditional cultural properties, we would appreciate your input.

If you have any comments on the report, please send them to me by August 1, 1997.

Feel free to call me at 531-7094 if you have any questions.

Sincerely yours,


Jan Reichelderfer
Environmental Planner

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January 12, 1998

Ms Lynn Lee
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

Subject: Kuakini Highway Improvements Between Palani and Hualalai Roads

Dear Ms Lee

On July 1, 1997, Ms. Jan Reichelderfer of Parsons Brinckerhoff Quade & Douglas, Inc. provided you with a copy of the historic and archaeological reconnaissance survey report prepared by Cultural Surveys Hawaii for the subject Hawaii County, Department of Public Works project. She asked for comments on the report and information on traditional cultural properties.


Since that time we received information about Lanaikea Cave. The original reconnaissance report did not mention the cave. An addendum report on the cave was prepared, and is enclosed for your review. To the best of our knowledge, no archaeological survey has ever been done in the cave.

If you have any comments on the addendum report, or can provide additional information about Lanaikea Cave, please send them to me by February 6, 1998.

Please call me at (808) 531-7094 if you have any questions.

Sincerely yours,

Parsons Brinckerhoff Quade & Douglas, Inc.


Jason Yazawa, AICP
Planner

Enclosure

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January 12, 1998

Ms. Leimara Damate, President
Kona Hawaiian Civic Club
P.O. Box 4098
Kailua-Kona, Hawaii 96745

Subject: Kuakini Highway Improvements Between Palani and Hualalai Roads

Dear Ms Damate

On July 1, 1997, Ms. Jan Reichelderfer of Parsons Brinckerhoff Quade & Douglas, Inc. provided you with a copy of the historic and archaeological reconnaissance survey report prepared by Cultural Surveys Hawaii for the subject Hawaii County, Department of Public Works project. She asked for comments on the report and information on traditional cultural properties.

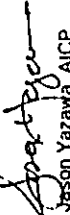
Since that time, we received information about Lanaikea Cave. The original reconnaissance report did not mention the cave. An addendum report on the cave was prepared, and is enclosed for your review. To the best of our knowledge, no archaeological survey has ever been done in the cave.

If you have any comments on the addendum report, or can provide additional information about Lanaikea Cave, please send them to me by February 6, 1998.

Please call me at (808) 531-7094 if you have any questions.

Sincerely yours,

Parsons Brinckerhoff Quade & Douglas, Inc.


Jason Yazawa, AICP
Planner

Enclosure

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Engineering Excellence



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3202
Honolulu, HI 96850

May 21 1997

BY REPLY REFER TO
HDA-HI

Mr. Michael D. Wilson
Chairperson and State Historic Preservation Officer
State of Hawaii Department of Land and Natural Resources
1151 Punchbowl Street, Room 130
Honolulu, Hawaii 96813

Subject: Kuakini Highway Improvements Between Palani and Hualalai Roads
Kailua-Kona, Hawaii County, Hawaii
Determination of "No Effect"
Section 106, National Historic Preservation Act

Dear Mr. Wilson:

The purpose of this letter is to request the State Historic Preservation Officer (SHPO) to concur with the determination of "no effect" for the proposed Kuakini Highway Improvements between Palani and Hualalai Roads (see attached project location map). The project consists of widening the roadway from two to four lanes within the existing right-of-way, and other improvements to facilitate movement onto the widened highway. Since this is a federal-aid highway project, the SHPO concurrence is requested to comply with Section 106 of the National Historic Preservation Act, in addition to State requirements.

An archaeological and historic reconnaissance survey and assessment conducted by Cultural Surveys Hawaii for this project (attached) did not find any archaeological or historic sites within the right-of-way. The survey did find two areas of potential concern in undeveloped parcels adjacent to the project area:

- TMK 7-5-07:28: contains at least two traditional Hawaiian mounds that probably contain burials. The right-of-way limit fronting this parcel was deliberately narrowed by the County of Hawaii to avoid the possible burial site. Therefore, the right-of-way does not encroach on the possible burial site.
- TMK 7-5-04:24: possibly contains two *halea*. The *halea*, however, may have been destroyed by construction of a sewer line.

As shown on the enclosed conceptual plans, the widening would occur on the eastern (mauka) side of the highway, and therefore, TMK 7-5-07:28 would be unaffected by the project. Further, the mounds are protected by a retaining wall along the highway and would not be harmed by nearby construction activities. Therefore, the Federal Highway Administration (FHWA) finds that the proposed project would have "no effect" on this site.

TMK 7-5-04:24 is a few hundred feet from the project area, adjacent to Ololi Road near Kopiko Street. At the time of the reconnaissance survey, the County of Hawaii was considering connecting Ololi Road to Kopiko Street as part of this project. However, the County has decided not to include this improvement in the project. The Kopiko Street connection may be constructed as a separate project. If the two *halea* are still in existence, the proposed project would not affect the site because the proposed work is approximately 400 to 500 feet from the site. Therefore, the FHWA finds that the proposed project would have "no effect" on this site.

Please contact me at (808) 541-2530 if there are any questions.

Sincerely yours,

Richelle M. Suzuki
Transportation Engineer

Enclosures:

- 1) Project Location Map
- 2) Archaeological and Historical Assessment and Reconnaissance Survey of the Ololi Road Right-of-Way and A Portion of the Kuakini Highway Right-of-Way in the Ahupua'a of Lanihau, Moeauoa, Keopu and Honua'ula, Kailua-Town, North Kona, Island of Hawaii (Draft), Cultural Surveys Hawaii, September 1996
- 3) Conceptual Plans of Kuakini Highway Improvements Between Palani and Hualalai Roads:
 - a) Sheet 1 of 3 showing location of TMK 7-5-04:24
 - b) Sheet 3 of 3 showing location of TMK 7-5-07:28

cc:

Mr. Kazu Hayashida, State of Hawaii, Department of Transportation w/o encl.
Ms. Donna Kiyosaki, Chief Engineer, Department of Public Works, County of Hawaii w/o encl.
Mr. Clyde Shimizu, Parsons Brinckerhoff w/o encl.

LEWALUKI C. CANTLAND
GOVERNOR OF HAWAII



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
31 SOUTH KING STREET, 5TH FLOOR
HONOLULU, HAWAII 96813

JUN 20 1997

RECEIVED
JUL 24 1997
ALUMNI DIVISION

OFFICE OF LAND AND NATURAL RESOURCES
DIVISION

Gilbert Colome-Agren

AGRICULTURE DEVELOPMENT
PROGRAM

ADULT RESOURCES

CONSERVATION AND
ENVIRONMENTAL AFFAIRS

CONSERVATION AND
RECREATION

IDENTITY AND CULTURE

PLANNING AND DEVELOPMENT

LAND MANAGEMENT

WATER AND LAND DEVELOPMENT

Richie M. Suzuki
U.S. Department of Transportation
Federal Highway Administration
Hawaii Division
300 Ala Moana Blvd., Room 3202
Honolulu, Hawaii 96850

LOG NO: 19-586 -
DOC NO: 9706PM104

Dear Ms. Suzuki:

SUBJECT: Section 106 Compliance
Kualini Highway Improvements Between Palani and Hualalai
Roads
Lanihau, Mocaunua, Keopu and Honua'ula, North Kona, Hawaii
Island

Thank you for your letter of May 23, 1997 requesting my concurrence that the proposed improvements to Kualini Highway between Palani and Hualalai Roads will have "no effect" on historic sites. Your letter and the attached report by Cultural Surveys Hawaii were forwarded to our Historic Preservation Division. They have the following comments to make at this time.

The Cultural Surveys Hawaii report, which is based on a literature search and archaeological reconnaissance survey, indicates that no historic sites were found within either the Kualini Highway right-of-way, which is approximately 80 feet wide, or the Olofi Road right-of-way, which is approximately 25 feet wide. Because not all of the project area was traversed on foot due to the lack of permission from landowners some question obviously exists with regard to the possibility of features or sites in the unsurveyed areas. Historic Preservation staff tend to agree with your archaeological consultant that the original highway construction and subsequent use have probably obliterated any traces of sites or features within or in close proximity to each of the right-of-ways. The two exceptions, both outside of the right-of-ways, are the burials in TMK 7-5-07-28 and the possible remnants of a *Heiau* in TMK 7-5-04-24. As explained in your letter, neither of these two sites will be adversely affected by the proposed improvements.

On current evidence there are no known historic sites in the project area, but we want to remind you of the need to consult with Native Hawaiian organizations and individuals to determine the presence/absence of traditional cultural properties. As a Federal undertaking consultation is needed to fulfill the requirements of Section 106 of the National Historic Preservation Act of 1966 as amended in 1990 and 1992. Until the consultation process has been concluded, we cannot agree that all significant historic sites in the project area have been identified, and thus we cannot concur at this point with the "no effect" determination. We recommend that you write the Office of Hawaiian Affairs in Honolulu and the Kona Hawaiian Civic Club requesting their input and that when you do this you provide them with a copy of the Cultural Surveys Hawaii report for review. This should help to expedite the process. If you have any questions regarding this consultation process, please contact Mr. Nathan Napoka, our Branch Chief for Culture and History (587-0040).

Finally, we believe that you need to develop a contingency plan in the event that unknown lava tubes are found during construction. If this should occur, all work should stop until a qualified archaeologist has had an opportunity to inspect the lava tube to determine the presence/absence of historic properties, including human burials. If such are found then an appropriate mitigation plan would need to be prepared and implemented.

If you should have any questions please contact our Hawaii Island archaeologist, Patrick McCoy (587-0006).

Aloha,

Michael D. Wilson
MICHAEL D. WILSON, Chairperson and
State Historic Preservation Officer

PM:els



Federal Emergency Management Agency

Washington, D.C. 20472

JAN 12 1996

RECEIVED MAIL ROOM

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

IN REPLY REFER TO:
Case No.: 95-09-887R

The Honorable Stephen K. Yamashiro
Mayor, Hawaii County
25 Aupuni Street
Hilo, Hawaii 96720-4252

Community: Hawaii County, Hawaii
Community No.: 155166

104

Dear Mayor Yamashiro:

This is in response to a letter dated January 25, 1996, from Mr. Galen M. Kuba, Division Chief, Engineering Division, Hawaii County Department of Public Works, to the Federal Emergency Management Agency (FEMA) regarding the effective Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS) report for Hawaii County, Hawaii. With his letter, Mr. Kuba provided additional information to support an August 16, 1995, request for a Conditional Letter of Map Revision (CLOMR) from Mr. Bruce E. Witcher, P.E., Vice President, Reid & Associates Inc. Mr. Witcher requested that FEMA evaluate the effects that the proposed construction of a parking lot (and the associated grading) and the existing construction of Henry Street along Keopu Drainageway Overflow from just downstream to approximately 2,500 feet downstream of Queen Kazhumanu Highway would have on the effective FIRM and FIS report. This request is also based on a change in the discharge of the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood) from 1,630 cubic feet per second (cfs) to 1,508 cfs. The amount of flow contributing to the culverts at Queen Kazhumanu Highway along Keopu Drainageway Overflow was revised with a Letter of Map Revision dated May 25, 1995. Flow from Lamihau Drainageway, a flooding source that was not studied as part of the effective FIS, is also considered in the hydraulic analysis for the Keopu Drainageway Overflow downstream of Queen Kazhumanu Highway.

All data required by FEMA to evaluate this request were submitted by Mr. Witcher with his letters dated August 16, November 28, and December 15, 1995, and with Mr. Kuba's January 25 letter. All fees necessary to process this CLOMR, a total of \$1,860, have been received.

We have reviewed the data submitted and the flood data used to prepare the effective FIRM for Hawaii County, Hawaii. We believe that if the proposed project is constructed as shown on the unnamed topographic work map, prepared by Reid & Associates Inc., dated September 10, 1995, revised February 2, 1996, the floodplain boundaries of the base flood will be delineated as shown on the above-referenced work map.

After the proposed project is complete, the width of the Special Flood Hazard Area (SFHA) will increase and decrease along the entire revised reach. From approximately 1,000 feet downstream to approximately 2,400 feet downstream of Queen Kazhumanu Highway, the SFHA boundary delineation will shift south by approximately 200 feet. The floodway boundary delineation will also shift south along this reach. The base flood elevations (BFEs) will increase and decrease along the entire revised reach. The maximum increase in BFE, 1 foot, occurs at Kuakini Highway, and the maximum decrease in BFE, 8 feet, occurs just downstream of Queen Kazhumanu Highway.

2

Upon completion of the project, your community may submit the data listed below and request that we make a final determination on revising the effective FIS report and FIRM.

- As-built plans, certified by a registered professional engineer, of all project elements, including the parking lot grading and Henry Street
- The submitted hydrologic analysis only considers a 24-hour storm duration. The peak discharge associated with the base flood should be determined through investigating the discharges associated with a variety of storm durations. Please submit a revised hydrologic analysis that investigates a variety of storm durations. If the revised hydrologic analysis does not show that the 24-hour storm is associated with the peak discharge, please revise the hydraulic analysis and topographic mapping accordingly.
- Because the existing floodway will need to be modified as part of the revision, we would require a letter from you stating that the community would adopt and enforce the modified floodway.
- An initial fee of \$225, which represents the minimum charges associated with a request of this type, must be submitted before we can process your revision request. Payment of this fee shall be made in the form of a check or money order made payable in U.S. funds to the National Flood Insurance Program (NFIP), or by credit card payment. The payment must be forwarded to one of the addresses listed below.

For U.S. Postal Service: For overnight service:
Federal Emergency Management Agency Fee-Collection System Administrator
Fee-Collection System Administrator c/o Dewberry & Davis, METS Division
P.O. Box 3173 8401 Arlington Boulevard
Merrifield, Virginia 22116-3173 Fairfax, Virginia 22031

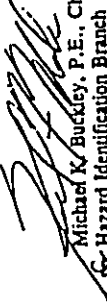
After receiving appropriate documentation to show that the project has been completed, FEMA will initiate a revision to the FIRM and FIS report. Because the BFEs would change as a result of this project, a 90-day appeal period would be initiated, during which community officials and interested persons may appeal the revised BFEs based on scientific or technical data.

The basis of this CLOMR is, in whole or in part, a proposed channel-modification project. Paragraph 60.3(b)(7) of the NFIP regulations requires that communities "assure that the flood-carrying capacity within the altered or relocated portion of any watercourse is maintained." This provision is incorporated into your community's existing floodplain management regulations. Consequently, your community must agree to accept responsibility for the maintenance of the modified channel before allowing its construction.

This response to Mr. Witcher's request is based on minimum floodplain management criteria established under the NFIP. Your community is responsible for approving all proposed floodplain development, including this request, and for assuring that the necessary permits required by Federal or State law have been received. State and community officials, based on knowledge of local conditions and in the interest of human safety, may set higher standards for construction or may limit development in floodplain areas. If the State of Hawaii or your community has adopted more restrictive or comprehensive floodplain management criteria, those criteria take precedence over the minimum NFIP requirements.

If you have any questions regarding floodplain management regulations for your community or the NFIP in general, please contact the Consultation Coordination Officer (CCO) for your community. Information on the CCO for your community may be obtained by contacting the Director, Mitigation Division of FEMA in San Francisco, California, at (415) 923-7177. If you have any technical questions regarding this CLOMR, please contact Mr. John Magnotti of our staff in Washington, DC, either by telephone at (202) 646-3932 or by facsimile at (202) 646-4596.

Sincerely,



Michael K. Buckley, P.E., Chief
Hazard Identification Branch
Mitigation Directorate

cc: Mr. Bruce E. Witcher, P.E.
Vice President
Reid & Associates Inc.

Mr. James D. Hasenyaeger
Project Manager
Graham Murata Russell

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BENJAMIN J. CASTRANO
DIRECTOR



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWLA STREET
HONOLULU, HAWAII 96813

JUL 1 1996
MICHAEL D. WILSON
CHIEF OF DIVISION
STATE OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWLA STREET
HONOLULU, HAWAII 96813

ADVISORY COMMITTEE
PROGRAMS
ADULTIC RESOURCES
PLANT AND ANIMAL RESOURCES
COMPLIANCE AND AFFAIRS
CONSERVATION AND
RESOURCES MANAGEMENT
FORESTRY AND WILDLIFE
NATURAL RESOURCES
LAND MANAGEMENT
WATER AND LAND DEVELOPMENT
WATER RESOURCE MANAGEMENT

July 3, 1996

Jan Reichelderfer
Environmental Planner
Parsons Brinckerhoff
1001 Bishop Street
Pacific Tower, Ste. 3000
Honolulu, HI 96813

Dear Jan Reichelderfer:

Subject: Kuakini Highway Improvements Between Palani and Hualala'i Roads

Your environmental assessment regarding the subject matter should address the botanical resources that might be affected by this improvement. Obviously, it would depend on the degree of improvement (widening). There may be potential rare and endangered plant species in the area. These include *Capparis sandwicheana* and *Pritchardia affinis*. There may also be plantings of aesthetic value in the area. I recommend that you consult with the Kona Outdoor Circle to assist you in that area.

Should you have any further questions regarding the botanical resources, please feel free to contact Dr. Carolyn Corn of my staff at 587-0166.

Thank you for the opportunity to comment. I look forward to reviewing the environmental assessment.

Very truly yours,

Michael G. Buck
Administrator

cc HI Branch
C Com



United States Department of the Interior

FISH AND WILDLIFE SERVICE
PACIFIC ISLANDS ECOREGION
100 ALA MOANA BOULEVARD, ROOM 3108
BOX 50088
HONOLULU, HAWAII 96850
PHONE: (808) 541-3441 FAX: (808) 541-3470

RECEIVED
JUL - 9 1996
PARSONS BRINCKERHOFF
HONOLULU, HAWAII

In Reply Refer To: TR

Jan Reichelderfer, Environmental Planner
Parsons Brinckerhoff Quade & Douglas, Inc
Pacific Tower, Suite 3000
1001 Bishop St.
Honolulu, HI 96813

Dear Ms. Reichelderfer:

On June 24, 1996, the U.S. Fish and Wildlife Service (Service) received your June 20, 1996 letter requesting identification of the proposed and listed threatened and endangered species in the vicinity of the proposed corridor for the Kuakini Highway improvements between Palani and Hualala'i Roads. It is our understanding that you are requesting this information on behalf of the Federal Highway Administration.

The Service has reviewed the map provided with your request and pertinent information in our files, including maps prepared by the Hawaii Heritage Program of the Nature Conservancy. Our records indicate that the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) may occur within the vicinity of the project site or traverse the area. However, it is unlikely that the Hawaiian hoary bat will be impacted by the proposed project because this area is already highly developed.

We appreciate your concern for endangered species and would like the opportunity to review the Draft Environmental Assessment for this project. If you have any questions, please contact our Program Leader for Interagency Cooperation, Ms. Margo Stahl, or Fish and Wildlife Biologist Tanya Rubenstein at 808/541-3441 (fax: 808/541-3470).

Sincerely,

Brooks Harper
Field Supervisor
Ecological Services



United States Department of the Interior
FISH AND WILDLIFE SERVICE

NOV 25 1996

PARSONS BRINCKERHOFF
HONOLULU, HAWAII

In Reply, Refer To AA

Jan Reichelderfer
Parsons Brinckerhoff Quade & Douglas, Inc.
Pacific Tower, Suite 3000
1001 Bishop Street
Honolulu, Hawaii 96813

NOV 22 1996

RE Kuakini Highway Improvements between Palani and Hualalai Roads

Dear Ms Reichelderfer

The U.S. Fish and Wildlife Service (Service) has reviewed the plans for Kuakini Highway improvements between Palani and Hualalai Roads, Kailua-Kona. The proposed project will involve the installation of 24 new street lights. The Service offers the following comments for your consideration.

We appreciate your consideration of the potential impacts of the new lighting on protected seabirds. It is true that lights increase "fallout" (collision with structures brought on by attraction to and disorientation from bright lights) of federally protected birds such as the endangered dark-rumped petrel or "ua" (*Phoebastria immutabilis*) and the threatened Newell's shearwater (*Puffinus newelli*). However, there are no recent records of these birds from the vicinity of the proposed project. The Service does not believe that the project will have any effect on these birds.

For your information if needed in future projects, however, we recommend that outside lights be shielded and aimed downward. Shielded lighting recommendations can be found in the enclosed pamphlet entitled "The Newell's Shearwater Light Attraction Problem: A Guide for Architects, Planners, and Resort Managers," which is also available from the Hawaii State Department of Land and Natural Resources.

The Service appreciates the opportunity to comment on the proposed project. If you have questions regarding these comments, please contact Fish and Wildlife Biologist Adam Asquith at 808/541-3441.

Sincerely,

Brooks Harper
Field Supervisor
Ecological Services



United States
Department of
Agriculture

Natural
Resources
Conservation
Service

P. O. Box 636
Kealahou, HI
96750-0636
Phone (808) 322-2484
Fax (808) 322-3735

15 July 1996

Ms. Jan Reichelderfer
Parsons Brinckerhoff
Pacific Tower, Suite 3000
1001 Bishop St.
Honolulu, HI 96813

NOV 16 1996

Dear Ms. Reichelderfer,

Per your request, I have reviewed the soils maps for the area of the proposed widening of Kuakini Highway in Kailua-Kona. The soils in the area are mapped as the Punaluu series which is a shallow organic soil in depressions on palaoe lava. This soil is neither prime nor unique farmland.

Sincerely,

Robert T. Gavenda, PhD
Soil Survey Project Leader

The Natural Resources Conservation Service
implements the Soil Conservation Service,
an agency of the
United States Department of Agriculture

AN EQUAL OPPORTUNITY EMPLOYER

Kailua Village Improvement Association
 3455 Waialae Avenue Suite 260
 Honolulu, HI 96816
 Ph: (808) 732-6622 Fax: (808) 732-3788

September 30, 1997

Honorable Stephen Yamashiro
 Mayor, County of Hawaii
 25 August Street
 Hilo, HI 96720

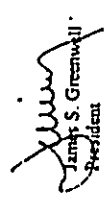
Dear Stephen:

Re: Kuakini Upgrade (DPW Job No P-3278)

The negativism which has surfaced in response to the efforts by the County to move forward with a badly needed upgrade of Kuakini Highway is disappointing and I'm sure somewhat frustrating for all who see its obvious merits and need. I may be wrong, but I suspect there is a lot more support for this project than may readily appear, particularly as the plan is now being modified.

While our KYIA organization has been rather "loosely knit" recently, I am polling several dozen of our major property owner members and stakeholders in an effort to solicit their expression of support for the "Additional Improvement Alternative" (see attached memo). I will share the results with you within 30 days.

Sincerely,



Jimmy S. Greenwall
 President

ISG:vec
 attachment
 cc: Chief Engineer
 Planning Director
 DPW - Kona Office (Tom Pack)
 Mr. Henry Cho

**KUAKINI HIGHWAY IMPROVEMENTS
 SMALL GROUP MEETING
 SEPTEMBER 13, 1996 • 10:00 A.M.
 COUNTY OF HAWAII DEPARTMENT OF PUBLIC WORKS**

PLEASE PRINT

NAME	ORGANIZATION	ADDRESS	PHONE #
Clyde Shimizu	Parsons Brinckerhoff	1001 BISHOP ST	531-7094
Wayne Yoshioka	Parsons Brinckerhoff	"	531-7094
Thomas Pack	DPW		
David Miyashiro	HPC & Associates	74-5490 Kaiwi St Kailua Kona, HI 96740	329-2519
Dill BAYE	KONA RANCH HOUSE	75-5653 OLOLI ST. K-KONA	329-7061
Gary O Ogi	Kuakini Towne	75-5722 Kuakini Hwy	329-6446
J. Van Peterson	Bank of Hawaii	P.O. Box 2402 Hono, HI 96942	531-6119
TROY FUJITANI	AAMA Surf & Sport	75-5741 Kuakini Hwy K-K HI 96740	326-7890
JAMES FUJITANI	Fujitani Property	" " " " " " "	329-8256
DAVID HEFT	7-ELEVEN, HAWAII	75-5745 KuaKua	326-2066
Gwen MATSU	" "	" "	935-1213
Jessal Nakama	Irvine Pacific Mtg	75-5741 Kuakini Hwy k-k HI 96740	326-1700
Rick BELLAH	IRVINE PACIFIC MTA	" " " " " "	"
Wayne Yoshioka	Parsons Brinckerhoff	1001 Bishop St, Suite 300, Hono, HI 96943	531-7094

July 8, 1997

Draft Environmental Assessments

(1) Chroman Residence & Related Improvements

District: Puua
TMK: 1-3-08:03
Applicant: Michael Chroman (310-301-8371)
 2411 Ocean Front Walk
 Venice, CA 90291

Accepting Authority: Department of Land and Natural Resources
 Land Division
 1151 Punchbowl Street, Room 220
 Honolulu, Hawaii 96813
Contact: Lauren Teakle (587-0385)
 Linda Copman (883-2246)
 P.O. Box 383284
 Waikeolu, Hawaii 96738

Public Comment
Deadline: August 7, 1997
Status: DEA First Notice pending public comment
 Address comments to the applicant with
 copies to the accepting authority, the
 consultant and OEQC.

The construction of a two-story residence with attached carport, a utility shed/workshop, a generator storage shed, and two 12,000 gallon water tanks are proposed. The project site is a 4.54 acres portion of a 17.01 shoreline property which is located approximately one mile south of Isaac Hale Beach Park and is accessible from the Kalapana-Kapobea Beach Road.

(2) Kuakini Highway Improvements Between Palani & Hualalai Roads

District: North Kona
TMK: 7-5-04

The County of Hawaii Department of Public Works (DPW) proposes to widen, from two lanes to four lanes, a 0.8 km (half mile) segment of Kuakini Highway in Kailua-Kona between its intersection with Palani Road and its intersection with Hualalai Road. To facilitate movement onto the widened highway, the project also includes the construction of a left turn pocket approximately 100 m (300 ft) northeast along

July 8, 1997

Palani Road and a transition section extending approximately 60 m (200 ft) southeast (toward Keauhou) of the highway's junction with Hualalai Road.

Besides widening the highway and providing turn lanes, the proposed improvements include interior parallel parking facilities, drainage structures, lighting, sidewalks, synchronized traffic signals, and bikeways. Provided federal funds are available, the project would also include placing overhead utility lines underground. The roadway widening would take place within the County right-of-way and no property acquisition would be required. The proposed project would relieve existing traffic congestion, accommodate future traffic demand and enhance pedestrian and bicyclist safety.

Three alternatives were considered: widening the highway, Transportation System Management (TSM) and No-Build. A partial width widening which would reconstruct only a portion of the right-of-way and retain most of the mature trees along the highway has been provisionally selected by the DPW as the preferred alternative. The project would not substantially alter the environment and adverse impacts would be minimal.

If necessary approvals are obtained in a timely manner, construction would begin in early 1999 and the widening would be completed in approximately 13 months.

The final EA will be a joint publication of the Federal Highway Administration, the State of Hawaii Department of Transportation, and the County of Hawaii to satisfy the requirements of the National Environmental Policy Act (NEPA) and HRS, Chapter 343.

(3) SoBay Condominium

District: North Kona
TMK: 7-5-18-20
Applicant: SoBay Hawaii, Inc., c/o Ala Kai Realty
 688 Kinohole Street, Suite 102
 Hilo, Hawaii 96720
Contact: Yvelio Talcya (935-3378)

Accepting Authority: County of Hawaii
 Planning Department
 25 Aupuni Street
 Hilo, Hawaii 96720
Contact: Susan Gagonik or Alice Kawaha
 (961-8288)

Consultant: Roy Takemoto Land Use Consultant (959-0189)
 P.O. Box 10217
 Hilo, Hawaii 96721

Public Comment
Deadline: August 7, 1997
Status: DEA First Notice pending public comment
 Address comments to the applicant with copies to the approving agency or accepting authority, the consultant and OEQC.

SoBay Hawaii, Inc., a Hawaii corporation, proposes to construct a 21-unit 4-story oceanfront residential condominium on a site located at 75-3894 Alii Drive between Kailua-Kona and Keauhou. Currently, the approximately 0.68 acre site has two vacant single-story structures that would be demolished. The project requires a shoreline setback variance and special management area use permit. Proposed activities within the shoreline setback area include landscaping, pathway and public access improvements, portion of a driveway, provision of two lanai decks and roof overhang filling a man-made cement-lined pool, and repair of an existing seawall. The existing seawall extends along approximately 60% of the site's ocean frontage. The wall will not be extended. The open portion without the seawall will be landscaped with naupaka and other coastal strand plants. A small study beach fronts the site.

Previously Published Projects Pending Public Comments

Draft Environmental Assessments

Kabaluu Beach Resort Condominium

Applicant: Kabaluu Beach Partnership
 78-6980 Kahuna Street, #13
 Kailua-Kona, HI 96740
Contact: Scott Church (322-4132)
Approving Agency/Accepting Authority: County of Hawaii, Planning Department
 25 Aupuni Street
 Hilo, Hawaii 96720
Contact: Daryn Arni (961-8288)

Public Comment
Deadline: July 23, 1997

Kuakini Highway Improvements Between Palani and Hualalai Roads

Small Group Meeting Informational Handout

Presented by
The County of Hawaii Department of Public Works (DPW)

Purpose and Need

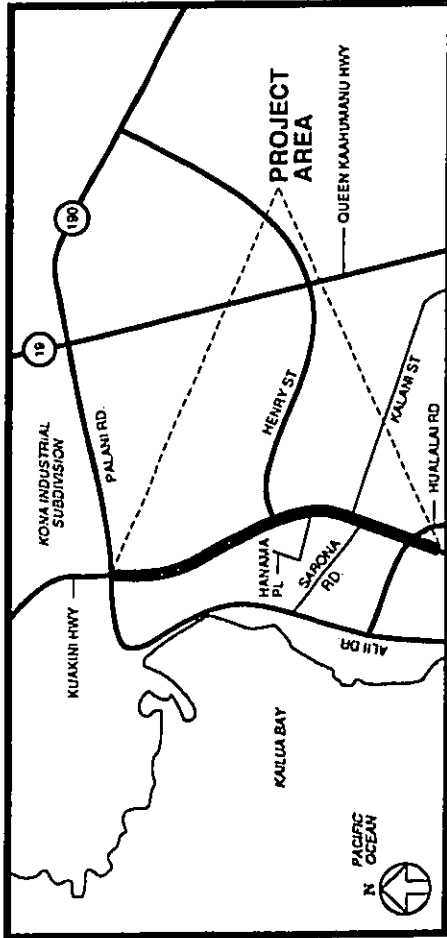
- Relieve Congestion
- Enhance Pedestrian Facilities
- Improve Bicycle Facilities
- Increase Vehicular Capacity

Alternatives

- No-Build is a no-action alternative, where there would be no modifications to Kuakini Highway
- Traffic System Management includes such options as traffic signal synchronization
- Widening Kuakini Highway would provide four lanes within the 80-foot right-of-way

An Environmental Assessment (EA) is currently being prepared and a draft EA is scheduled for public review in February 1997. At that time, a public meeting will be held to present environmental impacts and provide an additional opportunity for public comment. Responses to concerns voiced at the meeting or written comments made on the draft EA will be included in the final EA, which is scheduled for completion in July, 1997.

The public is invited to comment on the project by writing to the Engineering Division at the address below. Public comments and input received during these small group meetings will be considered in developing the preliminary design of the highway improvements.



If you wish to be included on the mailing list for the Kuakini Highway Improvements project, please fill out the information below:

Name: _____
Organization: _____
Address: _____
Telephone: _____

Send This Portion To:
Thomas Park, PE
Engineering Division
Hawaii County Kona Office
75,5706 Kuakini Highway
Kailua-Kona, Hawaii 96740



Memorandum

To: File
From: Clyde Shimizu
Date: September 9, 1996
Subject: Kuakini Highway Improvements
Between Palani and Hualalai Roads
Minutes of Small Group Meetings

The Small Group Meetings were held on August 15th at 9:00 a.m., 12:00 noon and 3:00 p.m. in the Hawaii County Kona Office, Engineering Division's conference room. An informational handout (attached) was provided.

In Attendance: See attached attendance sheets (3 sheets)
Invitations to attend the small group meetings were sent to the following groups and individuals:

- Office of Hawaiian Affairs
- Hawaiian Civic Club
- Board of Realtors
- Outdoor Circle
- Kona Traffic Safety Committee
- People's Advocacy for Trails Hawaii (PATH) - bicycle society
- National Society of Professional Engineers
- Kailua Village Design Commission
- Hawaii Leeward Planning Conference
- Kailua Village Improvement Association
- Chamber of Commerce
- West Hawaii Committee
- Donna Kyosaki (Department of Public Works)
- Virginia Goldstein (Planning Department)
- Jim Rath (County Council)
- Keola Childs (County Council)
- Steven Yamashiro (Mayor)
- Virginia Isabett (House of Representatives)
- David Tarnas (House of Representatives)
- Malama Solomon (Senate)
- Andrew Levin (Senate)

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Engineering Excellence



Summary of Meeting:

All three meetings Mr. Pack introduced the project and PB's staff. Mr. Shimizu then provided a brief project description, explained that the purpose of the meeting was to obtain input to assist in the development of a conceptual alternative, and described the funding, schedule and alternatives. Project issues were then discussed.

Funding - The project will be programmed for 80% federal/20% county funds. To obtain federal funds, an environmental assessment will be prepared that meets both federal and state requirements.

Schedule - The Draft EA is scheduled for completion in February 1997. Construction is scheduled to begin in early 1998.

Alternatives - Four alternatives are being investigated. See informational handout for description.

Issues - Display boards of typical sections (reduced copy attached), photographs and conceptual layouts were presented and used to assist in the discussion of project issues. The following is a summary of the discussion topics:

- **Impacts to adjacent properties** - Driveways will become steeper (e.g. the roadway to the Ranch House (Oloh Road) and the driveway to Central Pacific Bank. A partial-width widening alternative would result in less impacts to adjacent properties than a full-width widening alternative.
- **Landscaping** - Existing mature trees (23 trees) may need to be removed. The trees may not be affected with a partial-width widening alternative. Trees in the sidewalk areas, as compared to the median area, would provide shade for pedestrians. Federal funds for landscaping is unlikely.
- **Sidewalks and drainage** - To avoid potential diversion of floodwaters, new curbs and sidewalks in the floodplain on the makai side of the roadway would not be provided. Replacement curbs and sidewalks, which do not revise the existing drainage patterns, would be provided.
- **Undergrounding of overhead utility lines** - Generally there is no federal participation for the cost of undergrounding utility lines. Adjacent property owners may also need to pay for the undergrounding of utility service lines.
- **Loss of street parking** - Parking spaces along the makai side of the roadway between Ukana Lane and Henry Street and those in front of Aama Surf Shop may be lost.
- **Revised Access from Sarona Road** - Left-turns from Sarona Road onto Kuakini Highway would no longer be allowed. The direction of traffic flow on Sarona Road may need to be reversed.

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Additional Comments - The following concerns/points were made at the meetings:

- **Alternatives** - Alternatives that do not add more lanes to Kuakini Highway should be investigated. More lanes may result in higher vehicular speeds resulting in the degradation of the Kaula ambience. If additional lanes become necessary, then narrow 10 ft wide lanes should be provided to keep travel speeds low.
- **Street lights** - Street lights should be provided to enhance pedestrian safety.
- **Economic Perspective** - We should not stop progress. Tourist have a very low tolerance for traffic congestion.
- **Hualalai Road Intersection** - The layout of the intersection should be revised, particularly for the mauka/makai movements. Currently it is not clear if maka-bound travelers will turn left or proceed straight ahead.
- **Undergrounding of overhead utility lines** - All meeting attendees felt that every attempt should be made to place overhead lines underground. Federal funds (ISTEA Enhancement) may be available under the category for bicycle/pedestrian improvements (contact Ron Riley 967-8603).
- **Bicycle Lanes** - A striped bicycle lane should be provided.
- **Civil Defense coordination** - Mr. Harry Kim should be contacted to assure coordination with the Civil Defense Department.
- **Traffic signals synchronization** - The project should include the synchronization of all traffic signals.
- **Hanama Place traffic signal** - In general, the attendees felt that the traffic signal at Hanama Place should remain. The Kaula-Kona Master Plan suggested that this signal could be eliminated.
- **Additional parking** - There is a parking shortage and the county parking lot should be improved. Federal fund participation in connection with the Kuakini Hwy. project, although unlikely, should be pursued. Consideration should be given for allowing street parking until improvements is made to the County parking facility.
- **Native plants** - Indigenous, native plants should be used for landscaping. There are several good local landscape architects.
- **Traffic striping** - Cross-hatched chevron striping should be kept to a minimal.
- **Olohi Road** - A rear access connection to Kapi'ole Street should be promoted.

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To Whom It May Concern:

My name is Troy Fujitani. My wife, Nicole, and I own 'A'ama Surf and Sport which is located on Kuakini Highway between First Federal and Seven 11. I feel that the current proposal to widen the Kuakini Highway corridor between Palani Road and Hualalai Road is misguided and unnecessary for the following reasons:

1. Traffic congestion is not a problem through this area. The existing red lights allow the traffic to move smoothly and provide spacing for lateral access from side roads and parking lots. We are located in the middle of this area and do not have any problems getting in and out of our parking area. The only time there is any moderate congestion is during pau hana time and it is manageable.
2. The existing businesses in this corridor are dependent upon it being a local, slow traffic street and not a high speed "by-pass" road such as Queen Kaahumanu. In this depressed economic environment these small, locally owned businesses would suffer greatly, further losing to the new mainland high volume stores.
3. Almost all existing parcels of land along Kuakini from Palani to Hualalai are already fully developed, therefore there is no need to allow for "future expansion" of this area. The projected growth is North of Palani along Queen Kaahumanu Highway.

Alternate, more viable and less expensive solutions to any perceived traffic problems in this area are as follows:

1. Hook up the lateral access roads from Lanikai Shopping Center and Lono Kona subdivision to Henry Street. Such a by-pass would serve to remove tremendous amounts of traffic from Kuakini Highway by allowing these areas to directly access Queen Kaahumanu. The County could build these now, then be reimbursed by Lanikai when it builds its remaining phases.
2. Restripe the existing Kuakini corridor pavement to create a center turn left/right lane along the entire length (such as the Belt Road in Waimea)
3. Connect the bits and pieces of existing sidewalk on the makai side of the Kuakini corridor with a cement sidewalk for pedestrian ease of movement. There are sufficient cross walks and lights for access to mauka businesses.
4. At this time of low land cost, it might be feasible for the County to use any funds it has to purchase any existing vacant parcels along Kuakini Highway to utilize as public parking lots for an economic boost to the Kaiua Village shops.

There are many areas in the community that could benefit more from the money that is proposed to be spent in widening this road, such as downtown Kaiua-Kona seawall and pier improvements. Thank you for your consideration of my comments. I can be

IRVINE PACIFIC MORTGAGE

75-5741 Kuakini Highway, Suite 215
Kailua-Kona, Hawaii 96740
Telephone: (808) 326-1700 Facsimile: (808) 329-6500
E-Mail: ipm@hawaii.net

August 27, 1996

Engineering Division
Hawaii County Kona Office
75-5706 Kuakini Hwy.
Kailua-Kona, HI 96740

Re: Proposed change to Kuakini Hwy.

Gentleman,

I'm currently a business owner on Kuakini Highway and can not believe that anyone would consider changing Kuakini into a four lane highway. It simply makes no sense for the county to propose such a dysfunctional plan.

We live in a resort town and do not need a four lane freeway between Palani Rd and Hualalai Rd.

The following business would be effected:

1. Ranch House Restaurant entrance is currently extremely difficult to enter from Kuakini and would be worsened.
2. My business would no longer have the six parking stalls currently used by our patrons and the public during special events in town.
3. To move the power poles and signals would have to cost an exorbitant amount of tax payers money.
4. Tourists would not attempt to enter into an area that looks like a free way to shop.
5. Four lanes would increase the danger to pedestrian.

The proposed four lane highway change will not improve traffic conditions nor will it relieve any of the traffic problems. This proposed change will serve as a disruptive condition to the local businesses during construction and eliminate the limited street parking that exist on Kuaikini Highway today.

Honokaa Town is advertised on TV with a lot of small shops, and it has a two lane road with horizontal parking, which allows the pedestrians and tourist to stop, browse and shop.

On street parking and sidewalks would slow the traffic down, along with the presence of pedestrian traffic which would improve and benefit local business.

The alternative:

1. Horizontal parking.
2. Sidewalks for pedestrian and tourist on both side for safety
3. Leave Alii Drive as is.

Should you have any questions on this subject please do not hesitate to call:

Thank you,


Rick Bellah, President

August 29, 1996

Thomas Pack, P.E.
Engineering Division
Hawaii County Office
75-5706 Kuaikini Hwy
Kailua-Kona, HI 96740

Ref: Kuaikini Hwy Improvements Meeting 8/27/96

Dear Tom,

Thank you for the informative meeting on Tuesday p.m. and your candid answers to our concerned groups many questions that were factually handled. Both you and Royden are outstanding examples of public employees at their best.

As you gathered from the many opinions and reactions from both the landowners and business owners alike, most if not all present were in **opposition to any & all improvement** that would involve the mentioned criteria, including widening, higher volume and restrictive access to their businesses. They were, however, in agreement that Kuaikini does need upgrading and beautification, as well as safety and pedestrian lanes, the idea of which is to enhance and beautify our town making it business friendly, as opposed to making it automobile/traffic friendly.

Needless to say, that I thoroughly concurred with these opinions and would be totally against any project that would further restrict my already "less than fantastic" access to my business. I am for making Kona Village a better place that is more easily accessible to people with more convenient parking for their cars. But just making it easier to speed through town is not my idea of a worthwhile improvement.

Thank you again. You handled you side of the discussion very aptly.

Sincerely,

Bill Brye

G.M. Kona Ranch House

August 29, 1996

Ms. Donna Kiyosaki, Chief Engineer
 Department of Public Works
 25 Aupuni Street
 Hilo, Hawaii 96720

Dear Ms. Kiyosaki:

Proposed Kuakini Highway Improvements between Palani and Hualalai Road

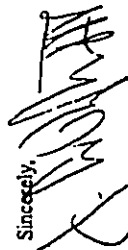
Thank you very much for allowing the public to participate in the planning process for the proposed project. At our August 27, 1996 Kailua Village Design Commission, there were 22 business people who attended this meeting to give their input. Those in attendance were business and property owners along the section of Kuakini Highway which is proposed to be improved. We have enclosed a copy of the list of people who were in attendance. We are also enclosing copies of the people who submitted written testimony for your information.

The consensus of the group and of the Commission was that if any improvements be planned for this section of Kuakini Highway, it should consist of the following:

1. A two lane roadway, with on-street parallel parking and curb, gutter and sidewalk on both sides, retain all of the existing handicapping improvements already in place, synchronize the traffic signals and located all utilities underground.
2. No funding should be spent to investigate any other options. Invest all efforts and funding into developing and implementing the two lane alternative.

We would appreciate a report on our recommendation as you proceed with the consultant in preparing the draft Environmental Assessment by September 30, 1996 if possible. We would also appreciate if a press release can be prepared and sent to the West Hawaii Today for explanation of the project and process. Finally, any future planning for this project should be put into a public notice so that the community is able to participate in this important project for Kailua Village.

Sincerely,


 J. Curtis Tyler III, Chairperson
 Kailua Village Design Commission

enclosures:

cc: Virginia Goldstein, Planning Director
 Henry Cho, Deputy Managing Director

PL-1088 JK/NI

NAME	MAILING ADDRESS	PHONE #
BILL BEYE	Kona Ranch House - 75-5653 OLOLO ST	329-7061
REBA CLYDE	Coatney - 75-5156 Kuakini #102A	334-1752
ANICE PALMA	1-08 48-19 Kailua Kona	325-2416
WALLY JETISHITA	74-624 Alapa ST #8	329-8111
Bobb Lewis	KK Cl...	329-1413
ROY FUJITANI	75-5741 Kuakini Hwy	326-7890
JAMES FUJITANI	" "	329-8526
TAKA FUJITANI	PO Box 668 K.K.	325-7355
M & R Shagiro	POB 5377 KK	326 2800
LYNN TANGSE	75-5704 HANAMA PL K.K.HI	329 6060
W. J. Kimi Jr	Under Billy 75-5744 Kailua	326-2151
Ofis A. Worrnan		359-2625
Demis Reid	75-114 Kailua St. 701	329-0266
WARREN CHONG	73-1390 Kaiminani Dr. KK	329 7355
OSKIND MCKEY	75-5756 HUALALAI RD KK	329-9395
GAYLE MCKEY	75-5756 HUALALAI RD KK	329-9395
Alfie Fujitani	PO Box 39007 K K 96737	322-3980
David Eldridge	" "	" "
Nicole Fujitani	75-5741 Kuakini Hwy KK	326-7890
Akiko Chuen	P.O. Box 820, Kailua-Kona	329-1925
Amelia burgers	P.O. Box 532, Kailua-Kona	329-1925

Stephen K. Yamashita
Mayor



County of Hawaii

DEPARTMENT OF PUBLIC WORKS
15 Aiea Dr., Suite 102, Room 102 • Hilo, Hawaii 96720-1121
(808) 941-4321 • Fax (808) 943-7138

September 5, 1996

Donna Fay K. Kiyosaki
Chief Engineer

Jiro A. Sumada
Deputy Chief Engineer

ADDRESSES FOR KUAKINI HIGHWAY IMPROVEMENTS BETWEEN PALANI AND HUALALAI ROADS INFORMATIONAL MEETING

AUTO IMPORTS OF HAWAII INC 811 KAOOLELEUA STREET HILO HI 96720	BANK OF HAWAII CORP FACILITIES DIV #213 P O BOX 2900 HONOLULU HI 96846
MR JACK H UJIMORI C/O 1132 BISHOP STREET #516 HONOLULU HI 96813	BRADLEY PROPERTIES LTD 75-5722 KUAKINI HIGHWAY #202 H-3 KAILUA KONA HI 96740
WILLIAM W & ANN Z BRYE P O BOX 1416 KAILUA KONA HI 96745	KONA CENTER PARTNERS 40 POOLELA STREET HILO HI 96720
MS LAURETTE M EDWARDS 75-5681 KUAKINI HIGHWAY #101 KAILUA KONA HI 96740	ALOHA PETROLEUM LTD 739 N NIMITZ HIGHWAY HONOLULU HI 96817
MR RICHARD R HARMAN P O BOX 561 KAILUA KONA HI 96745	K TANIIGUCHI LTD 50 E PUAHAKO STREET HILO HI 96720
MS CAROLE D LAWSON 73-5578 A MAIAU STREET KAILUA KONA HI 96740	HILLUM LTD 94-748A HIKIMOHE STREET HAIPAHU HI 96797
MS BARBARA G WADSWORTH 114 POLOKE PLACE HONOLULU HI 96822	SEVEN-ELEVEN (HAWAII) INC 1755 MIUANU AVENUE HONOLULU HI 96817
HAWAII PETROLEUM DISTRIBUTORS P O BOX 500 HONOLULU HI 96809	MR JAMES C FUJITANI 75-5741 KUAKINI HIGHWAY KAILUA KONA HI 96740
SHELL OIL CO-WESTERN TAX REGION P O BOX 2099 HOUSTON TX 77252	MR TAKA FUJITANI P O BOX 668 KAILUA KONA HI 96745
LANIRAU CENTER VENTURE 345 QUEEN STREET SUITE 400 HONOLULU HI 96813	HPC & ASSOCIATES 714 KAOOLELEUA AVENUE HILO HI 96720
HIROSHI & MARY M FUJINO BANK OF HI-CORP FAC DIV #213 P O BOX 2900 HONOLULU HI 96846	MC DONALD'S CORPORATION ATTENTION RE ACCOUNTING ONE MC DONALD'S PLAZA OAK BROOK IL 60521

SUBJECT: KUAKINI HIGHWAY IMPROVEMENTS BETWEEN PALANI AND HUALALAI ROADS
Informational Meeting

As an affected property owner, you are invited to a small group meeting to discuss improvements to Kuakini Highway from Palani to Hualalai Roads. The Department of Public Works (DPW) is evaluating alternative configurations for widening the highway and would sincerely appreciate your input.

The meeting will be held at 10:00 a.m. on September 13, 1996, in the Engineering Division's conference room at 75-5706 Kuakini Highway. Your valued input will be received after a short presentation about the project. An agenda is enclosed for your information.

Please feel free to call Tom Peck or Stafford Akoni from DPW at 327-3530.

DONNA FAY K. KIYOSAKI, P.E.
Chief Engineer

TWP:byf

Enclosure

cc: Tom Peck

BANK OF AMERICA
C/O PROPERTY MGMT DEPT - IONA
P O BOX 539
HONOLULU HI 96809

CARLTON & LOBBINE CHANG
1688A IWI WAY
HONOLULU HI 96816

JAFAR GOLLESTANI ETAL
75-5711 KUAKINI HIGHWAY
KAILUA KONA HI 96740

JAMES K & EMI TAKAUYE
P O BOX 610
KAILUA KONA HI 96745

KUNIO YOKOYAMA
P O BOX 45
HOLUALOA HI 96725

SNOW WHITE LAUNDRY
210 PUHALE ROAD
HONOLULU HI 96819

AGENDA

KUAKINI HIGHWAY IMPROVEMENTS
BETWEEN PALANI AND HUACALAI ROADS

Small Group Informational Meeting
September 13, 1986

1. Introduction by: Thomas Peck, P.E.
County Engineer
Department of Public Works
2. Project Presentation by: Clyde T. Shimizu, P.E.
Project Manager
Wayne Yoshida, P.E.
Transportation Engineer
Parsons Brinckerhoff Quade & Douglas, Inc.
3. Open Discussion and Comment Period



Memorandum



To: File
From: Clyde Shimizu
Date: September 16, 1996
Subject: Kuakini Highway Improvements
Between Palani and Hualalai Roads

Minutes of Small Group Meetings

A Small Group Meeting was held on September 13 at 10:00 a.m. in the Hawaii County Kona Office, Engineering Division's conference room. An informational handout (attached) was provided. This handout was similar to that of the August 15 meeting, except that the Convert Air Drive to One-Way alternative was deleted.

In Attendance: Invitations to attend the small group meetings were sent to the property owners along Kuakini Highway. See attached attendance sheet and invitation list.

Summary of Meetings:

- Mr. Pack introduced the project and PB's staff. Mr. Shimizu then provided a brief presentation, similar to that of the August 15 meeting. The following concerns/points were made at the meetings:
- Previous meeting - Ms. Teresa Nakama stated that a similar presentation was provided by the County of Hawaii (at the Kailua Village Design Committee's meeting - minutes to be obtained when available). About 30 people attended, with many people stating that Kuakini Highway should not be widened to a four-lane facility. Ms. Nakama stated that the people at that group and those here today are long-term residents of the area. Kailua-Kona is just a village and the people of the community want to preserve the Kona feel.
- Planning - Mr. Pack stated that the County has conducted several planning studies for the Kailua-Kona area. The most recent study is the Master Plan for Kailua-Kona that was adopted about a month ago. The County is currently investigating improvement alternatives to Kuakini Highway.
Mr. Wayne Yoshoka provided some background on the planning process. He stated that the Long Range Transportation Plan (LRTP) identifies the major transportation needs for the entire Island of Hawaii. This study includes two areas of detailed study - Hilo and Kona.

The Master Plan (MP) for Kailua-Kona includes a more detailed planning evaluation of the Kailua Village area. Both the LRTP and MP for Kailua-Kona recommend that Kuakini Highway be widened to four lanes.

The Kuakini Highway improvement study will provide an even more detailed planning-level evaluation. This study will investigate the impacts of the four lane widening alternative and compare the impacts with a No-Build alternative. The study will also investigate a low capital cost alternative that includes traffic synchronization - Transportation System Management alternative.

The final design of the highway improvements has not started and will begin only after completion of the Kuakini Highway Improvement study.

- Traffic Congestion - Mr. Troy Fujitani stated that since the construction of Henry Street, congestion is not as severe. There are only a few times during the entire year (during special events) when traffic is really congested.
Mr. Gregory Ogin stated that several potential tenants of commercial properties that he manages have stated that traffic congestion was a reason for not moving into developments within the project area.
Alternative Improvements - Mr. Rick Beligh indicated that rather than widening Kuakini Highway to four lanes, other alternatives such as widening Queen Kaahumanu Hwy and additional connecting streets should be investigated.
Travel Forecast - Mr. Wayne Yoshoka stated that PB will investigate travel patterns, as well as future volume forecasts. If the travel patterns indicate that future traffic does not head into the village area, PB would not recommend widening to four lanes. However, if the patterns indicate that traffic is heading into the village and there is a need for traffic circulation improvements, then PB may be obligated to recommend a widening alternative. PB will include planned improvements, such as to Queen Kaahumanu Highway, in the analysis.
Reversing the One-Way Direction on Sarona Rd. - PB inquired if this change was desirable to improve traffic operations at the Kuakini Hwy intersection. Ms. Nakama stated that Sarona Rd is used as a bypass for northbound traffic on Air Drive during times of congestion. Therefore, she felt that the travel direction should not be changed.
Mr. Ogin mentioned that some tenants from the Kuakini Towers use the Bark of Hawaii driveway, rather than Sarona Rd, to exit onto Kuakini Highway. Mr. J Van Peterson stated that the bank was considering restricting access to Sarona Rd to prevent that movement.
Parking - Mr. Fujitani stated that there was insufficient parking available. PB indicated that providing off-peak street parking will be investigated.

Proposed Project

The County of Hawaii Department of Public Works (DPW) proposes to widen, from two lanes to four lanes, a half mile segment of Kuakini Highway in Kailua-Kona between its intersection with Palani Road and its intersection with Hualalai Road. To facilitate movement onto the widened highway, the project also includes the construction of a left turn pocket approximately 300 ft. northeast along Palani Road and a transition section extending approximately 200 ft. southeast (toward Keauhou) of the highway's junction with Hualalai Road. The proposed project would relieve existing traffic congestion, accommodate future traffic demand and enhance pedestrian and bicycle safety.

Besides widening the highway and providing turn lanes, the proposed improvements also include:

- interim parallel parking facilities,
- drainage structures,
- lighting
- sidewalks,
- synchronized traffic signals, and
- bikeways.

The project may include placing overhead utility lines underground if federal funds are available. The roadway widening would take place within the County right-of-way and no property acquisition would be required. The posted speed on the widened road would be 25 mph.

Construction Schedule and Cost

The project is included in the 1997 State Transportation Improvement Program (STIP), although funds have not yet been allocated. Eighty percent of the \$6.5 million estimated construction cost would be federally funded. Hawaii County would provide 20 percent of the cost. Undergrounding of the overhead utility lines is included in the cost estimate. If necessary approvals are obtained in a timely manner, construction would begin in early 1999 and the widening would be completed in approximately 13 months.

The Present Situation

The width of the right-of-way of the segment of Kuakini Highway proposed for widening is 80 feet. The road presently consists of two lanes, with median left-turn lanes at most intersections. Sidewalks are not provided in many areas and there are no designated bikeways. The posted speed limit is 25 mph but within the half-mile project limits, speeds are limited by five signalized intersections and numerous driveways. Traffic congestion occurs during midday and afternoon peak periods, and is expected to worsen.

What about the utility lines?

Undergrounding the overhead utility lines would make the area more aesthetically pleasing. However, the availability of federal funds for undergrounding utility lines is an unresolved issue. Even with federal funding, individual landowners would be required to pay for undergrounding the connection from the utility line to their property.

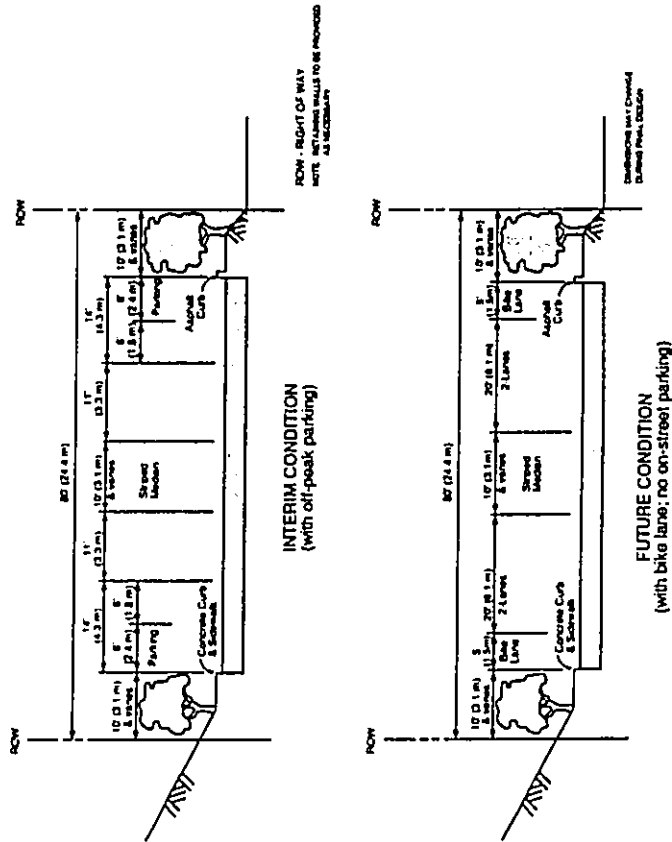
What are the Alternatives?

Three alternatives were considered:

- widening the highway,
 - Transportation System Management (TSM) which is a two-lane roadway improvement alternative; and
 - No-Build.
- Widening the highway is the only alternative which would substantially decrease traffic congestion.

Two concepts for widening the highway were explored:

- a full-width widening across the entire right-of-way; and
- a partial width widening which would have a paved, flush median and would reconstruct only a portion of the right-of-way. The partial-width widening configuration would have less impact on adjacent properties and would preserve most of the existing trees. The partial-width widening is presently the preferred alternative.





What Are The Impacts and Mitigation Measures?

Adverse impacts are expected to be minimal, and several impacts would be beneficial

- Motorists would experience fewer delays. Highway capacity would increase and congestion would decrease. Traffic demand through the design year (2020) would be accommodated.
- The project would improve safety by providing facilities for pedestrians and bicyclists.
- During construction, measures would be implemented to mitigate the potentially negative effects of traffic disruption, noise, dust and other impacts associated with road construction. Access to adjacent businesses and residences would be maintained during and after construction.
- Some driveways would become steeper due to the widened roadway. The County would work with adjacent property owners to facilitate driveway adjustments.
- Approximately 43 parking spaces would be lost on the ungraded shoulder along the makai side of the highway from Palani Road to Henry Street and six in front of A'ama Surf and Sport on the mauka side near Hualalai Road. The lost parking would be mitigated by allowing parking on Kuakini Highway during off-peak hours when additional highway capacity is not needed, and providing a parking bay for two stalls in front of A'ama Surf and Sport. Eventually, it may no longer be possible to provide off-peak parking on Kuakini Highway.
- The changes in the streetscape caused by widening the highway and providing street lighting are consistent with the urban location. The proposed project would preserve most of the scenic trees along the highway.
- The proposed project may cause more traffic noise compared to the No-Build Alternative. However, predicted noise levels do not exceed FHWA or SDOJ noise abatement criteria.
- Carbon monoxide, hydrocarbon and nitrogen oxides emissions would be reduced by the Built Alternative in comparison to the No-Build Alternative.

Where Can I Get More Information?

The Draft Environmental Assessment, Kuakini Highway Improvements, Between Palani And Hualalai Roads, Kailua-Kona Hawaii County, Hawaii (July, 1997) is available at the Kailua-Kona public library. You can also contact Thomas Peck at the Department of Public Works at 327-3530

What Happens Next?

Once the comments generated by the draft EA and this meeting are addressed, a final EA will be issued. The final EA will be a joint publication of the Federal Highway Administration (FHWA), the State of Hawaii Department of Transportation (SDOT), and the County of Hawaii to satisfy the requirements of the National Environmental Policy Act (NEPA) and HRS, Chapter 343

How Can I Comment?

If you'd like to comment about the project, we'd appreciate your thoughts in writing

- Comments should be sent by August 7, 1997 to: Thomas Peck, Engineer, Department of Public Works, Hawaii County Kona Office, 75 E. 706 Kuakini Highway, Kailua-Kona, Hawaii 96740
- With copies to: Governor, State of Hawaii, Office of Environmental Quality Control, 235 South Beretania St, Suite 702, Honolulu, Hawaii 96813
- With copies to: Clyde Shimizu, Parsons Brinckerhoff, Pacific Tower, Suite 3000, 1001 Bishop Street, Honolulu, Hawaii 96813

To: File

From: Clyde Shimizu *CS*

Date: August 18, 1997

Subject: Kuakini Highway Improvements Between Palani and Hualalai Roads Minutes of Public Information Meeting Held on July 30, 1997 Hale Halaawai Paik, Kailua-Kona

The meeting was called to order by Jiro Sumada at 6:35 p.m. who welcomed the attendees (see attached list) and introduced the project, important guests and the consultants from Parsons Brinckerhoff

Clyde Shimizu and Wayne Yoshioka presented the project information and were asked several questions from the audience

Councilman Curtis Tyler asked if other Traffic System Management Techniques had been studied besides optimizing the signal and whether other road connections had been tried. He ended his questions with comments stating that the community knows what will work best for them

Another commentor said that Kailua-Kona needs an overall plan. She supported public transportation and widening Kuakini Highway was an example of piece-meal planning. She concluded her statement by saying that the project would move the community in the direction of becoming another Honolulu.

At this point, the public was asked by Jiro to hold questions until the end of the presentation. Clyde Shimizu continued by explaining the full versus partial width widening

A member of the audience said that the consultants need to understand that the historical village concept is the most important aspect of Kailua-Kona. In order for the town not to become Waikiki, those with Hawaiian blood should rise up and stop the project

Clyde Shimizu continued with schedule and cost Councilman Tyler suggested that instead of hearing about schedules, the people in the audience be allowed to speak

**KUAKINI HIGHWAY IMPROVEMENT BETWEEN PALANI AND HUALALAI ROADS
MAILING LIST**

U.S. Department of Defense
U.S. Army Corps of Engineers
Building 230
Fort Shafter, HI 96856-5440

Office of Environment: Quality Control
Central Pacific Bank Plaza
220 S. King Street, Suite 400
Honolulu, HI 96813

Dr. Herman M. Azawa, Superintendent
State of Hawaii
Department of Education
P.O. Box 2360
Honolulu, Hawaii 96824

Kenneth Perrin, Chancellor
University of Hawaii at Hilo
200 West Kaunohi Street
Hilo, Hawaii 96720-4091

County Office of Housing and Community Development
50 Waiuku Drive
Hilo, HI 96720

Mayor Steven Yamashiro
25 Aupuni Street
Hilo, HI 96720

County Civil Defense Agency
920 Uluani
Hilo, HI 96720

Bryan Harry, Director
U.S. Department of Interior
National Park Service, Pacific Area
300 Ala Moana Blvd
P.O. Box 50165
Honolulu, HI 96813

William Meyer, District Chief
U.S. Geological Survey
Water Resources Division
677 Ala Moana Blvd., Suite 415
Honolulu, HI 96813

State of Hawaii
Department of Health
1250 Punchbowl Street
Honolulu, HI 96813

University of Hawaii at Manoa
Water Resources Research Center
2540 Dole Street
Honolulu, HI 96822

Department of Parks and Recreation
County of Hawaii
25 Aupuni St.
Hilo, HI 96720

Virginia Goldstein
County Planning Office
25 Aupuni Street
Hilo, HI 96720

Thomas Paik
Department of Public Works
Hawaii County Kona Office
75-5706 Kuakini Highway
Kailua-Kona, HI 96740

**KUAKINI HIGHWAY IMPROVEMENT BETWEEN PALANI AND HUALALAI ROADS
MAILING LIST**

Donna Kyosaku, Chief Engineer
Department of Public Works
County of Hawaii
25 Aupuni St.
Hilo, HI 96720

Kona Fire Department
County of Hawaii
74-5537 Palani
Kailua-Kona, HI 96740

Honolulu Advertiser
City Desk
P.O. Box 3110
Honolulu, HI 96802

Hawaii Tribune Herald
355 Kookole Street
Hilo, HI 96720

Hawai Bicycle League
3442 Waialae Ave., Suite 1
Honolulu, HI 96816

Fanny Auihoy
Daughters of Hawaii Huhe'e Palace
7557 18 Ala Drive
Kailua-Kona, HI 96740

Lermara Damata, President
Kona Hawaiian Civic Club
P.O. Box 4098
Kailua-Kona, HI 96745

Department of Water Supply
County of Hawaii
25 Aupuni St.
Hilo, HI 96720

Kona Police Department
County of Hawaii
74-5221 Queen Kaahumanu Hwy
Kailua-Kona, HI 96740

Honolulu Star Bulletin
City Desk
P.O. Box 3080
Honolulu, HI 96802

West Hawaii Today
P.O. Box 789
Kailua-Kona, HI 96745

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Honolulu, HI 96806-1658

Honohohau Harbor Advisory Group
Port of Hilo
Hilo, HI 96720

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Kona-Kohala Chamber of Commerce
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KUAKINI HIGHWAY IMPROVEMENT BETWEEN PALANI AND HUALALAI ROADS
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Hawai Leeward Planning Conference
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Kaiko-Honohou National
Historic Park
Pacific Islands Office
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The Honorable Wayne Metcalf
Hawai State Senate
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Serra Club Hawaii Chapter
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The Honorable Paul Whalen
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Wilham Ltd
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Kailua-Kona, HI 96740

Jose Badgoud
Bank of Hawaii
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Mayor Yamashiro's Advisory Committee
on Bicycle and Pedestrian Safety
c/o Mr. Ron Reilly
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Aneha Burgess
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Kailua-Kona, HI 96745

Kailua-Kona Public Library
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Kailua-Kona HI 96740

Virginia Isbell
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United States Department of Agriculture
Natural Resource Conservation Service
P.O. Box 636
Kealahou, HI 96750

State of Hawaii
Department of Business Economic Development and Tourism
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Honolulu, HI 96804

United States Department of the Interior
Fish & Wildlife Service
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Honolulu, HI 96850

J Van Peterson
Bank of Hawaii
P.O. Box 2900
Honolulu, HI 96846

... but that is not the case in Europe, where the parents have been very supportive — in fact, a constant, helping with transportation and providing snacks. The children in her class are paid when they perform for television or events. They all make money. They also have expenses, such as airfare to Honolulu, which they receive with food money. Her inspection, 15 to 20 hours a week for each child, is free, and she is in a Waimea church that gives "almost nothing," she said. "I make my money off the hotels and Anthony Lanatia Graves."

Goemans said Rice last year filed an unsuccessful lawsuit challenging OHA's rule that only Native Hawaiians are eligible to vote in OHA elections. Rice, who is not Hawaiian, said Hawaiian descent violates the U.S. Constitution's ban on racial discrimination in voting.

The state Attorney General's Office is also conducting a criminal investigation of Perfect Title Co. Randy Young, deputy Attorney General, said the investigation began after this year's legislative session ended. However, he would not say what triggered the inquiry or reveal the focus of the investigation.

The Attorney General's office earlier took the position that the Perfect Title controversy was a dispute between private parties. But Young said circumstances have changed.

Crime Stoppers neither subscribes to Caller ID nor does it record calls.

Robert Grammer, Leslie Okamura and Pacific Kapeli fled from the prison outside Hilo the night of July 14. Grammer and Okamura were serving sentences for burglary, while Kapeli was serving time for assault.

Quake shakes Captain Cook
A small earthquake shook Captain Cook early Thursday morning, according to the Hawaiian Volcano Observatory. The 3:15 a.m. tremor was about magnitude 2.3 and was centered below the town of Captain Cook, about 10 miles below the Earth's surface.

Paul Onubo, a seismologist with HVO, said the quake was probably related to an adjustment along the Kilauea Fault, which created the Kealahou Bay fault in geologic times.

Highway hearing slated
A public hearing in discuss the proposed widening of Kuakini Highway is set for 6 p.m. Wednesday at Hale Hiloa. The county has proposed to widen Kuakini Highway from two to four lanes along a half-mile section of the road between the Palani and Hualalai Roads intersections. The project also includes a 200-foot, left-hand pocket lane on Palani Highway that extends south of Hualalai Road. Those who would like to comment on the project but are not able to attend the public hearing should call Thomas Puck, Public Works engineer, at 322-3330.

Solicitation scam warning
Police in Kona are warning residents about people fraudulently soliciting donations for youth programs in the name of the Hawaii County Police Department. One of the suspects soliciting funds is identifying himself as "Officer Silver."

Officer Walter Ah Noy of the Kona Patrol said the police department is not soliciting funds for youth programs and asks people who are contacted in connection with the scam to call him at 326-4646. Anonymous calls may be made to Crime Stoppers at 328-8181 in Kona or 961-8300 in Hilo 24 hours a day. Callers will be given a code number, remain anonymous and may be eligible for a reward up to \$1,000 if their call leads to an arrest, indictment or the recovery of property.

... but that is not the case in Europe, where the parents have been very supportive — in fact, a constant, helping with transportation and providing snacks. The children in her class are paid when they perform for television or events. They all make money. They also have expenses, such as airfare to Honolulu, which they receive with food money. Her inspection, 15 to 20 hours a week for each child, is free, and she is in a Waimea church that gives "almost nothing," she said. "I make my money off the hotels and Anthony Lanatia Graves."

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Crime Stoppers neither subscribes to Caller ID nor does it record calls.

AGENDA

**Public Information Meeting
July 30, 1997**

**KUAKINI HIGHWAY IMPROVEMENTS
BETWEEN PALANI AND HUALALAI ROADS
KAILUA-KONA, HAWAII COUNTY, HAWAII**

**Sponsored by
Department Of Public Works
Hawaii County**

6:00 - 6:30 PREVIEW OF DISPLAY BOARDS

6:30 - 7:00 FORMAL PRESENTATION

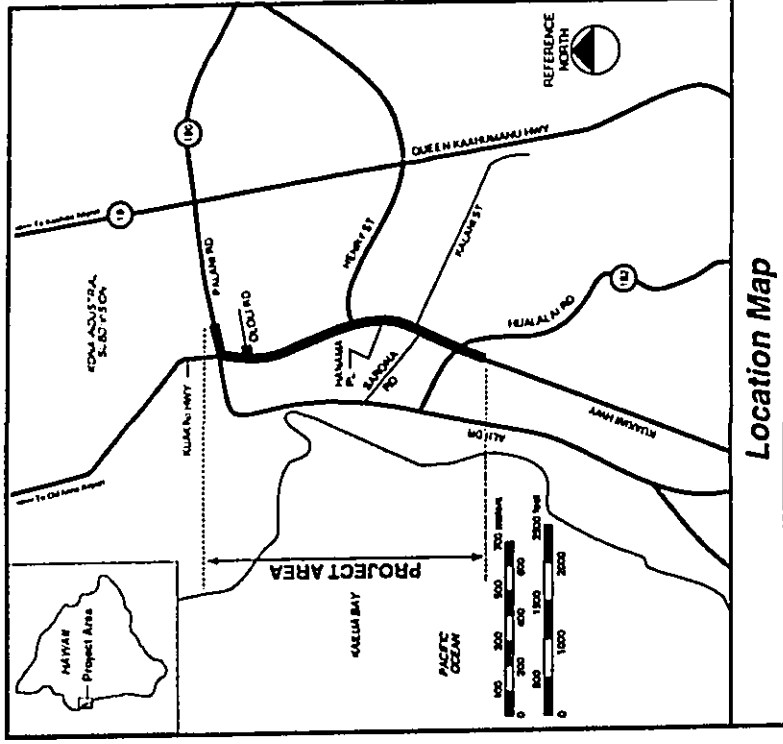
1. Welcome and Introduction
2. Project Location and Description
3. Purpose and Need
4. Project History
5. Alternatives
 - No-Build
 - Traffic System Management
 - Full-Width Widening
 - Preferred Alternative
6. Project Schedule and Cost

7:00 - 8:00 QUESTIONS AND ANSWERS

**KUAKINI HIGHWAY IMPROVEMENTS
BETWEEN PALANI AND HUALALAI ROADS
KAILUA-KONA, HAWAII COUNTY, HAWAII**

**Public Information Meeting
July 30, 1997**

**Sponsored by:
Department of Public Works
Hawaii County**



Location Map



Jiro explained that the project's Draft Environmental Assessment had just been completed and that this was the time for comments. People should send them to the addressees on the handout or should contact Councilman Tyler with their concerns.

Joe Kaipo, a long time resident, said that there were better ways to spend the money—a community pool, children, seniors or public transportation. Kailua-Kona should be kept quaint. Higher speeds on a four-lane road would cause reckless driving. If the County wants to underground utilities, they should investigate an unused electrical duct near the Shell Station.

Virginia Isbell opposes the freeway because it would have loggerheads at both ends and put people out of business. The Grass Shack is an example of a business that lost their parking because of an improved intersection and is now floundering. The project should have an EIS and not an EA and members of the audience should write to OEQC. If four lanes are provided, they will fill with cars. People in Kailua-Kona are slower and take their time. Having people drive faster doesn't make any sense. The consultants need to make a living but they are not living in Kailua-Kona. Kuakini Highway is not the major business district. The major business district is Alii Drive. Writing to Congress, Senators, Councilman, etc. is the way to stop the project.

A member of the audience asked if the EA was the Kuakini Improvement Study. Because the consultants are engineers, the EA is missing the social and economic fabric of Kailua-Kona. A Special District was formed in 1974 to keep the village from being surrounded and killed. Pedestrians, not vehicles should be first. It would be best if Kuakini Highway come to a halt and everyone got out of their cars. People change when they get into their car and isolate themselves with radios and AC.

Bill Blye, owner of the Ranch House, opposes the plan although he praises the work PB has done in interacting with the community. The sewers and the construction of Henry Street were major disruptions in the area. He wants to know why anyone would spend so much money to make traffic faster for a half mile. He is concerned that he has never seen actual plans for his driveway. He agrees that the road needs improvements but not four lanes. As it said in a recent newspaper article, skinny streets are better. Improving the highway would strip the identity for Kailua-Kona.

Kelly Greenwell of the Outdoor Circle felt that the plan was appalling and was reminiscent of a 1950's planning process. Good planning requires understanding that Kailua-Kona is a small village. A small village does not need to have a freeway through it to speed traffic. The economy here is already ruined. People don't come to Kailua-Kona to drive on roads but to see Hawaii in the old way. He suggested that the consultants go back to the people they work for and tell them this instead of standing up here in front of the community making fools of themselves.

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Engineering Excellence



Terry Dunlap, an architect and planner, supports a networking of streets and alternative routes instead of making one route four lanes.

Keola Childs reminded the group that the project was developed through community planning by citing the Kailua Village Master Plan. The Master Plan advocated denser zoning and more intensive use of the village core. The Master Plan discussed widening Kuakini Highway and the County Council adopted the plan in 1996 believing this was a product of community based planning. He noted that the village is less than 50% built and the roads are at capacity. DPW should be complemented for acting quickly and following the public will. This project would provide shade trees, sidewalks, and bike facilities. He also supports networking the existing streets more efficiently. He would suggest moving the intersection at Serono road and adding an intersection at Henry St. to provide linkage to Serono Manni Herbes, who works on Kuakini Highway, said that walking on along the road is now difficult because of all the huge delivery trucks and backing vehicles. She thought the partial width widening was better than the full width widening. She reminded people that if they'll ride the existing public transportation, the service could be expanded.

Nancy Piscichio senses frustration because planning has changed. Formerly the idea was to build to capacity but now people want to keep the village atmosphere.

Another woman in the audience commented that if the road moves slowly enough people will switch to public transportation. She asked how many in the audience were against the project and how many are for it. She said that people are for planting trees, synchronizing signals and repaving but they should say no to the federal funds for widening.

Curtis Tyler thanked everyone for giving their input. Three E's need to be considered:


- economy (need to revitalize village).
- environmental protection and
- social equity.

He asked the audience to participate in the review of the General Plan coming up next year. He wants to make the village pedestrian and user friendly and respect the cultural history. A four lane highway is not in the village's immediate future.

A member of the audience felt that taking an alternate road through a community would not be a problem for children playing in the streets if adequate parks were built.

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Engineering Excellence

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KUAKINI HIGHWAY IMPROVEMENTS
PUBLIC INFORMATION MEETING
JULY 30, 1997
COUNTY OF HAWAII DEPARTMENT OF PUBLIC WORKS

PLEASE PRINT

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Bill BRIG	Kona Ranch House	75-5653 OLOCI ST - K-K-76745-	529-7001
Rollin BARBARA	Hawaii Police Asst-Kona	74-5221 CAUSEWAY KAHAMUNU HWY KIC 214	326-4245
Whitney JENKINS	HI County Police Dept (Kona)	" " " " " "	" "
Jodi Rymanow	HI County Office	25751 ALONG KAWA DR 96740	326-9047
Curtis Tyler	County Council	25 Anapuni St HILO	926-6634
JANICE PALMA	self	POB 4849 Kailua - Kona HI 96745	325-3411
Ron + Lin NOWAK	KAWON	PO Box 569 Kailua-Kona HI 96745	326-1169
STEVE HALEY	Kona MarketPlace	75-5725 Alii Dr Suite 301 K-K HI 96740	326-9418
Jim ANDERSON	Kona MarketPlace	1022 Bethel St. Honolulu HI	545-8260
Keith Kim.	Kona Inn Shopp Village	75-5744 Alii Dr.	326-4922
Nancy Piscchio	PLAN TO PROTECT	78-7240 KUAKINI HWY 96740	322-3118
Allyr Fujitani	Investment Concepts	78-6800 (Alii Dr.) #5-304, Kailua-Kona 96740	322-3980
MARK RICHARDS	MARKET GROUP, INC	PO Box 1928 KAILUA-KONA HI 96745	322-7890
Christal Yamasaki	WES Thomas Assoc.	75-5749 Kailua St. Kailua Kona 96740	329-2552



Rick Bellah, who owns a mortgage company on Kuakini Highway, feels that, based on his experience with Henry Street, four lanes will dramatically increase speeds. The construction time will devastate businesses and parking will be lost. He asks what sort of effort it will take to remove parked cars during peak hours when the lanes are needed for traffic.

A member of the audience commented that Alii Drive traffic has increased greatly and pedestrians cannot use the sidewalk next to the seawall. She suggests removing the sidewalk so cyclists can use it.

Teresa Nakame said that Kailua-Kona business is tourism unlike Bishop or King St. in Honolulu. The proposed project is insensitive to businesses and did not address the effects of construction on business like Kona Ranch or Aama Sports. The cost, as with all projects, will go up because of Change Orders. Skinny streets, as described in the newspaper, are cheaper and safer. Wide roads are treated like freeways, as people treat Henry Street. The effects of flooding and the rise of sea level are not addressed in the EA. When the tide is high, there is no place for the water to go and Kona Shopping Center floods. The EA reads like a template of another study. North Kona is sloping terrain not Kailua-Kona. There is a lack of understanding of the historical nature of the village in the EA. The project is highway robbery not highway improvement. Why is good planning, i.e. skinny streets good for Hilo but not Kailua-Kona? DPW wants to ruin Kailua-Kona. Trees need to be planted to make the area business friendly so people will stay in town. The traffic studies are invalid because while Alii Drive was under construction people avoided it and changed the traffic patterns.

Keith Kim, a long term resident, understands the business community and wants to keep the village a village with small streets and local businesses. Big businesses take money out of the community.

Curtis Tyler noted that Kailua is a village in the Kona District. Kailua-Kona is a post office.

Councilman Joe Reynolds noted that after listening to the testimony, most people were against the project. He asked how one can get parking and walkways without going to 4 lanes.

Jiro thanked everyone for attending. The meeting ended at 8:20.

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Hawaii Notices

March 8, 1998

The site is located alongside Highway 130 at an approximate elevation ranging between 603 feet and 605 feet, just south of the Makuu Farm and Agricultural Lots Subdivision and approximately 2000 feet from the Palooa Landing Airstrip on the opposite side of the highway.

This project will make potable water available for lots below the 520 ft. elevation

The production facilities will include installation of a permanent 700 gpm pump control building and connection to the existing 0.5 mg DWS reservoir tank on this site. Transmission waterlines from the existing reservoir tank to Makuu Farm and Agricultural Lots will be constructed under a separate project.

National Environmental Policy Act (NEPA)

(6) Kuakini Highway Improvements Between Palani and Hualalai Roads (Environmental Assessment)

District Applicant North Kona U.S. Department of Transportation Federal Highway Administration PO Box 50206 Honolulu Hawaii 96850 Contact: Rachelle Suzuki (541-2700)

Approving Agency/Authority U.S. Department of Transportation Federal Highway Administration PO Box 50206 Honolulu Hawaii 96850 Contact: Abraham Wong (541-2700)

Consultant Parsons Brinckerhoff Quade & Douglas Inc. Pacific Tower, Suite 3060 1001 Bishop Street Honolulu Hawaii 96813 Contact: Clyde Shimizu (541-7094)

Public Comment Deadline April 1998

The U.S. Department of Transportation, Federal Highway Administration (FHWA), the State of Hawaii

The Environmental Notice

Office of Environmental Quality Control

Page 13

Department of Transportation, Highways Division (HDOT), and the County of Hawaii, Department of Public Works (DPW) propose to widen, from two through lanes to four through lanes, a 0.8 km (half mile) segment of Kuakini Highway in Kailua-Kona from its intersection with Palani Road to its intersection with Hualalai Road. The proposed project also includes a left turn pocket approximately 100 m (300 ft) northeast along Palani Road, a transition section extending approximately 60 m (200 ft) southeast of the highway's junction with Hualalai Road, and a connection between Ololi Road and Keopiko Street. Other features of the project include repaving, new drainage structures, additional lighting, continuous sidewalks on both sides of the highway, synchronized traffic signals, and bike lanes. The project will take place within the existing 24 m (80 ft) County right-of-way, so no property acquisition will be required. The posted speed limit following the improvements will remain 40 km/h (25 mph).

The DPW earlier announced and distributed a Draft environmental assessment (EA) on this proposed project for agency and public comments under the provisions of Chapter 343 of the Hawaii Revised Statutes and Title 11, Chapter 200 of the Hawaii Administrative Rules. The comments received on the Draft EA have been incorporated into this National Environmental Policy Act (NEPA) EA.

If necessary, approvals are obtained in a timely manner, construction would begin in 1999 and the widening would be completed in approximately 12 months, opening for service in 2000.

Previously Published Projects Pending Public Comments

Draft Environmental Assessments

Keahole Reservoir

Applicant Department of Land and Natural Resources 1151 Punchbowl Street Honolulu, Hawaii 96813 Contact: Hiram Young (58-40260)

Approving Agency/Authority Same as above

Public Comment Deadline March 25, 1998

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Stephen K. Yamashiro
Mayor



County of Hawaii

DEPARTMENT OF PUBLIC WORKS
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April 23, 1998

**SUBJECT: KUAKINI HIGHWAY IMPROVEMENTS BETWEEN PALANI AND HUALALAI ROADS
KAILUA-KONA, HAWAII, COUNTY OF HAWAII
FINAL ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT**

Thank you for your time and effort in reviewing and providing comments on the Kuakini Highway improvements project. We appreciate these comments because they lead to a better project.

We have attached a copy of the project's Final Environmental Assessment (EA). In Section 3 of the EA, you will find a copy of your letter immediately followed by a response. The comments and responses are numbered to associate the points made in your letter with the correct response.

As described in Section 4 of the EA, the County of Hawaii, Department of Public Works, issued a Finding of No Significant Impact (FONSI) for this project on April 9, 1998, based on a comparison of project impacts in relation to the Significance Criteria specified in Section 11-200-12(b) of the Hawaii Administrative Rules. The Hawaii Division of the Federal Highway Administration (FHWA) has also issued a FONSI.

Again, thank you for participating in the planning of this project. If you have any questions, you may contact Mr. Thomas Pack of our Engineering Division, Kona Office, at (808) 327-3530.

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Appendix B
Traffic Analysis

Appendix B
Traffic Analysis

**KUAKINI HIGHWAY IMPROVEMENTS
BETWEEN
PALANI ROAD AND HUALALAI ROAD
DPW JOB NO. P-3278**

TRAFFIC ANALYSIS REPORT

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May 1997

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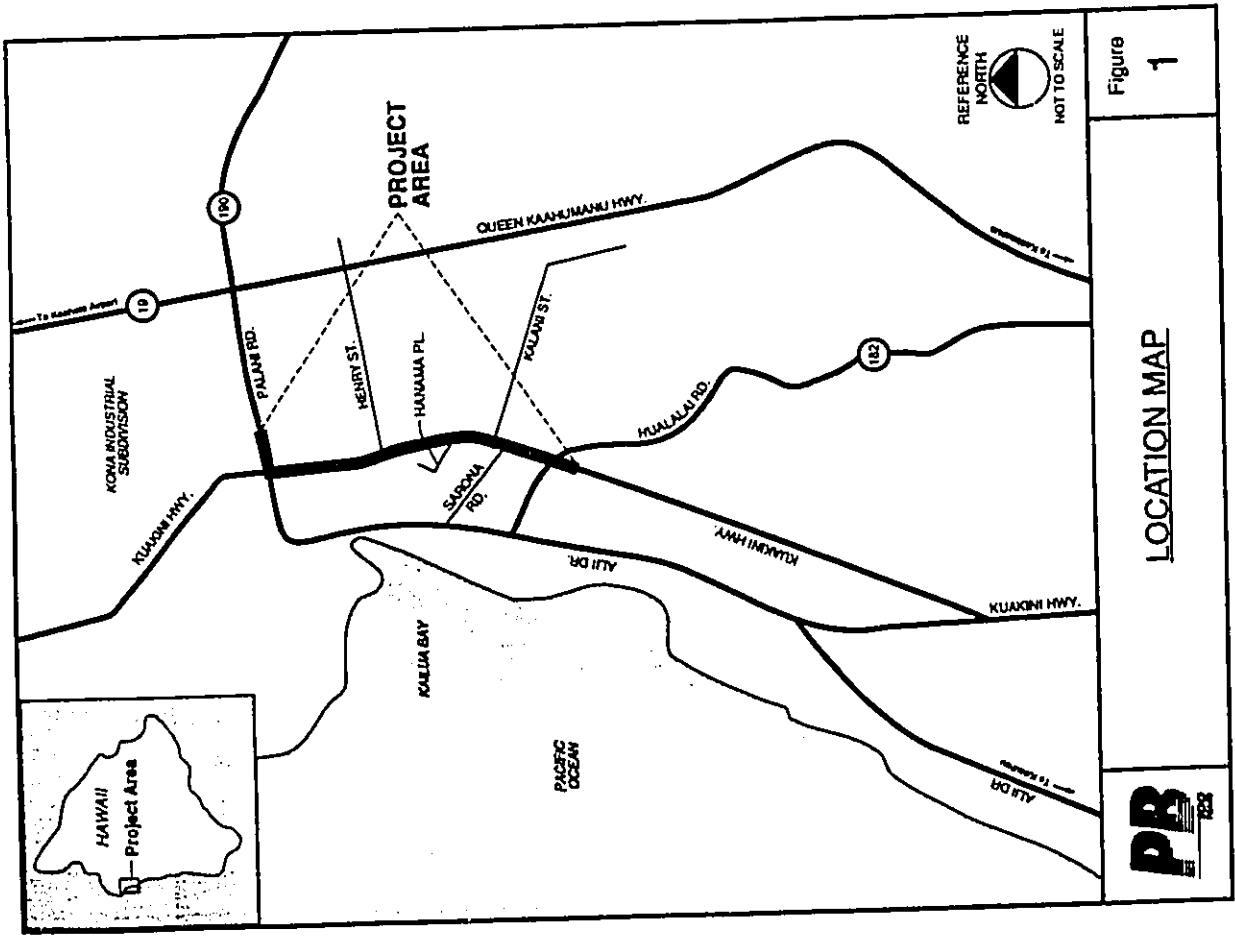
I. INTRODUCTION

The County of Hawaii Department of Public Works proposes to widen a segment of Kuakini Highway in the town of Kailua-Kona on the Island of Hawaii. The segment of Kuakini Highway under study is defined by its intersection with Palani Road on the north and its intersection with Hualalai Road on the south (approximate length 1/2 mile). The project location is shown in Figure 1.

The existing Kuakini Highway segment consists of a two-lane roadway (one lane in each direction) generally aligned in the northwest-southeast direction, with median left-turn lanes provided at most intersections. For purposes of this report, north corresponds to the direction of the old airport, south refers to the Keaouhou direction, west is makai, and east is mauka. This segment of Kuakini Highway contains five traffic signals located at the intersections with Palani Road, Henry Street, Hanama Place, Kalam Street, and Hualalai Road. The posted speed limit along the study segment is 25 miles per hour.

In 1991, the Island of Hawaii Long-Range Highway Plan¹ included a recommendation to widen this segment of Kuakini Highway from two to four lanes. The recently adopted Kona Master Plan Study² confirmed this recommendation. Both studies conducted public meetings that reviewed the proposed widening.

This report documents and summarizes the analyses conducted as part of the project development effort which includes conceptual design and environmental documentation. Even though the two previous study efforts have identified the need for widening of Kuakini Highway, the study effort documented in this report, once again, documented existing traffic conditions and reviewed No-Build, Transportation System Management (TSM), and Build future alternatives to determine the appropriate transportation improvement for this segment of Kuakini Highway.



II. EXISTING TRAFFIC CONDITIONS

Data Collection

Manual Intersection Traffic Counts

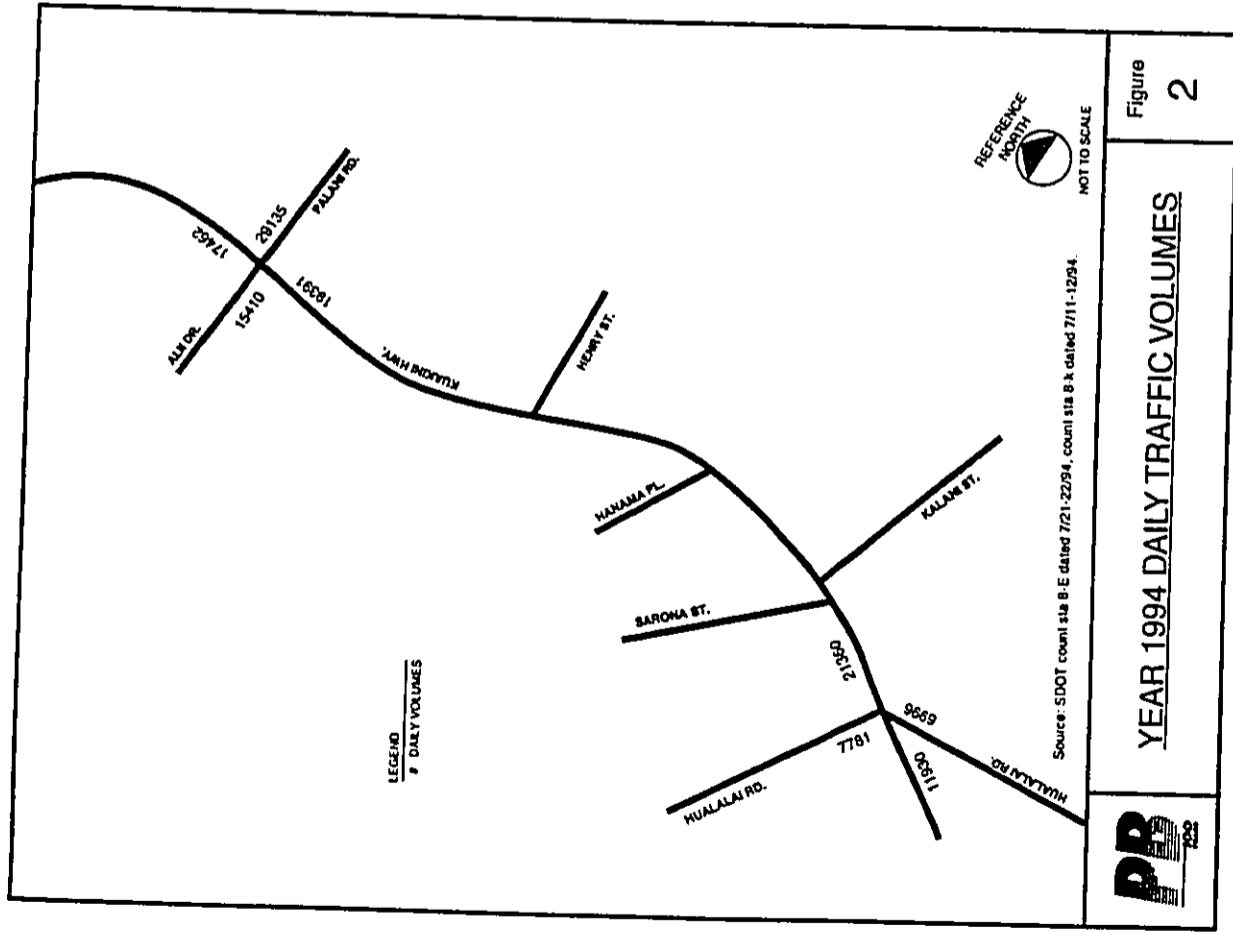
A review of State of Hawaii Department of Transportation (SDOT) traffic count stations 8-E and 8-K at the intersections of Kuakini Highway with Palani Road and Hualalai Road respectively, was conducted to determine the morning, midday and afternoon peak periods along Kuakini Highway. Year 1994 data from the count stations revealed that peak periods occurred between 6:30 AM to 9:30 AM, 11:30 AM to 2:00 PM, and 3:00 PM to 6:00 PM. Manual traffic turning movement counts were, therefore, conducted during these time periods on Tuesday, June 25, 1996, and Wednesday, June 26, 1996, at the intersections of Kuakini Highway with Palani Road, Henry Street, Hanama Place, Kalani Street, Sarona Street, and Hualalai Road. The counts indicate that the morning, midday, and afternoon peak hours occurred between 7:45 AM to 8:45 AM, 12:00 PM to 1:00 PM, and 4:30 PM to 5:30 PM, respectively. The traffic volumes are highest during the midday peak hour, followed closely by the afternoon peak hour. Traffic volumes during the morning peak hour are approximately 60% of the midday and afternoon peak hour volumes. Figure 2 illustrates the daily (24-hour) traffic volumes from SDOT count stations 8-E and 8-K during year 1994. Figure 3 illustrates the existing Year 1996 peak hour traffic turning movement volumes. A summary of the manual traffic counts are attached as Appendix 1.

Directional Traffic Patterns

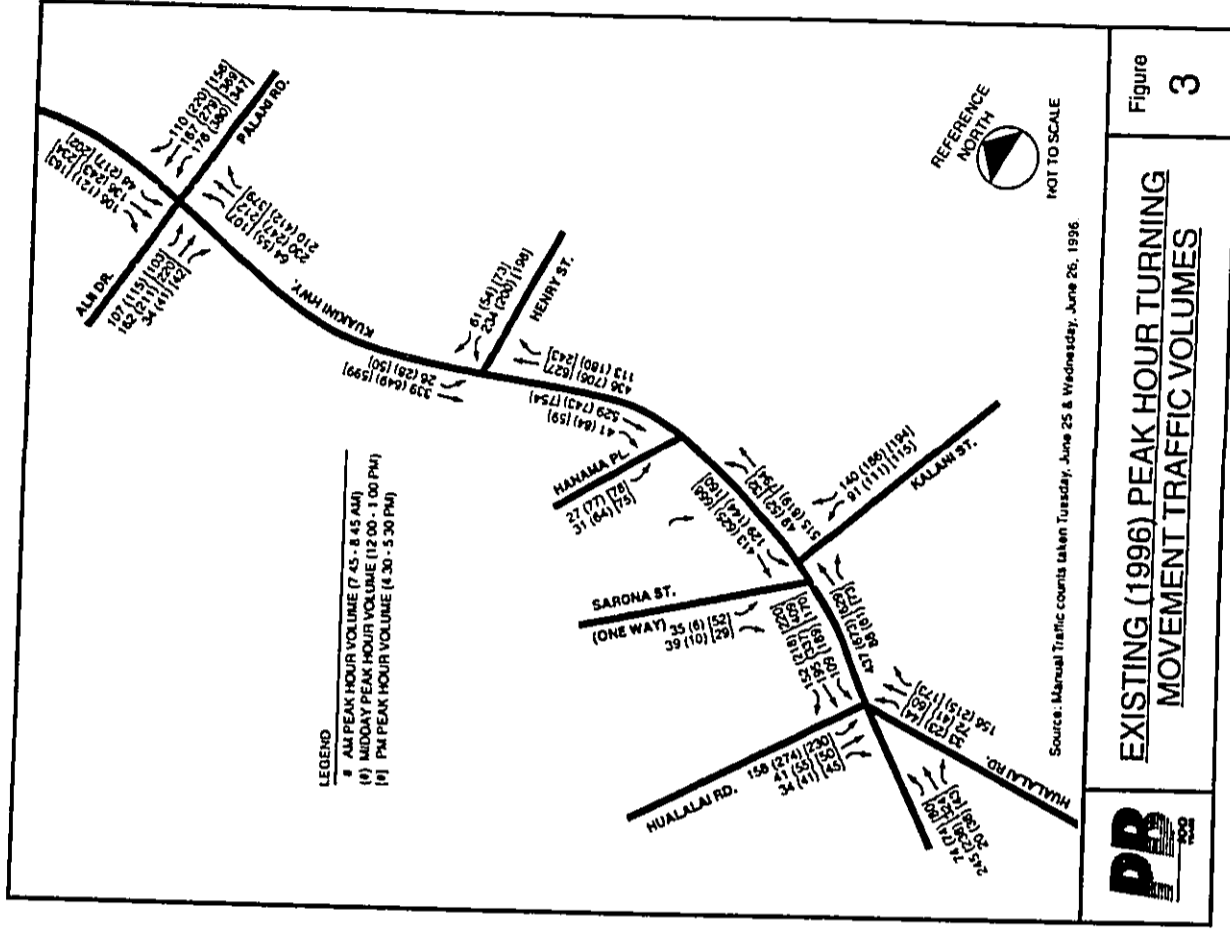
During the morning peak hour, the directional distribution of traffic along Kuakini Highway is approximately 50/50 between Henry Street and Sarona Street. The distribution changes to approximately 60/40 just south of Palani Road with the heavier distribution in the northbound direction. Just north of Hualalai Road, the distribution is also heavier in the northbound direction (approximately 55%)

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During the midday peak hour, the directional distribution of traffic along Kuakini Highway, between Hualalai Road and Henry Street, is approximately 50/50 with a slightly heavier distribution (51% - 53%) in the northbound direction. Just south of the Palani Road intersection however, the directional distribution changes to approximately 60/40 with the heavier distribution in the northbound direction.

During the afternoon peak hour, the directional distribution of traffic along Kuakini Highway is approximately 50/50 over the entire segment from Palani Road to Hualalai Road. The directional distribution is slightly heavier in the southbound direction (52% - 55%) in the vicinity of the Hualalai Road intersection. The directional distribution is slightly heavier in the northbound direction (52% - 53%) in the segment from Henry Street to Palani Road.

Travel Time Survey

Travel times for the study segment were also surveyed during the morning, midday and afternoon peak periods. Travel time samples were taken by two observers traveling in a car along Kuakini Highway at the same speed as traffic on the roadway. Travel times between each of the signalized intersections were recorded and used to estimate the average speed between intersections. Stop time at intersections were also recorded to determine the total travel time for the entire segment and to estimate the average speed over the entire segment. Four samples per direction were taken during each peak hour period. During the travel time runs, stops were frequently made at Hualalai Road when traveling southbound and also at Palani Road when traveling northbound. Travel times for all the samples are attached as Appendix 2. The four samples were averaged and the results are shown in Table 1 below. The travel times for the total segment between Palani Road and Hualalai Road are also included in Table 1. These travel times include stop times at the intersections and are used to calculate a corresponding average travel speed for the segment.

Table 1
Existing Kuakini Highway Travel Times

Cross Streets	Distance (feet)	AM Pk Hr.		Midday Pk Hr.		PM Pk Hr.	
		travel time (sec.)	speed (mph)	travel time (sec.)	speed (mph)	travel time (sec.)	speed (mph)
Southbound	0						
Palani Rd.	1,375	33	28.4	34	27.6	37	25.3
Henry St.	345	9	26.1	11	21.4	10	23.5
Hanama Pl.	305	9	23.1	9	23.1	10	20.8
Kalani St.	470	12	26.7	14	22.9	17	18.9
Hualalai Rd.	2,495	73	23.3	96	17.7	108	15.8
Total segment (incl. stop times)							
Northbound	0						
Hualalai Rd.	470	13	24.7	15	21.4	19	16.9
Kalani St.	305	8	26.0	12	17.3	10	20.8
Hanama Pl.	345	8	29.4	13	18.1	10	23.5
Henry St.	1,375	35	26.8	39	24.0	35	26.8
Palani Rd.	2,495	89	19.1	134	12.7	104	16.4
Total Segment (incl. stop times)							

Field Observations

Congestion/Queuing

Observations indicate that congestion is intermittent, (i.e. it is not sustained for the entire peak period). Most of the time, queues would dissipate during each traffic signal cycle. However, queues were observed to occur during the midday and afternoon peak hours on a fairly regular basis along Kuakini Highway between the Hualalai Road and Kalani Street intersections. On several occasions, the queues on the Hualalai Road southbound approach extended through the Kalani Street intersection (approximately 18 to 20 vehicles). Similarly, on several occasions,

queues on the Kuakini Highway northbound approach at Kalani Street extended through the Hualalai Road intersection.

Traffic Signal Operations

Observations also revealed that although all the traffic signals are configured to provide a protected left turn movement on the Kuakini Highway approaches, the loop detector system is set up so that there must be a sufficient queue length (approximately 4 or 5 vehicles) before the protected phase is triggered. For most intersections, queues were not long enough to trigger the protected left turn phase. Therefore, most of the time, the intersections would operate as a two phase signal cycle with permitted left turn movements on each approach. The exception is the Palani Road makai-bound left turn which had a sufficient queue length to trigger a protected left turn phase most of the time. The observed traffic signal phasing and an inventory of traffic signal timing for the study segment intersections are included in Appendix 3.

Intersection Analysis

Methodology

The existing intersections were evaluated using the methodologies for signalized and unsignalized intersections outlined in the 1994 Highway Capacity Manual (HCM). Operating conditions at an intersection are expressed as a qualitative index known as Level of Service (LOS) with letter designations ranging from A through F, with LOS A representing free-flow operating conditions and LOS F representing over-capacity conditions. Levels of service are typically expressed in terms of overall intersection operation for signalized intersections. Levels of service for unsignalized intersections are typically expressed for each lane of the minor streets and left-turn lanes for the major streets. For these analyses, Kuakini Highway is always considered the major street. Level of service definitions are attached as Appendix 4.

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Summary Of Intersection Analyses

The analysis results indicate that the five signalized study intersections (Palani Road, Henry Street, Hanama Place, Kalani Street, and Hualalai Road) operate well overall, (LOS B) during the morning peak hour, and acceptably overall, (LOS D or better) during the midday, and afternoon peak hours. However, there are certain lane groups at four of the five intersections that experience congestion during the midday and afternoon peak hours. Table 2 summarizes the congested movements at the study intersections and when they occur.

Between Henry Street and Hualalai Road, the signalized intersections are closely spaced. As a result, delays at one intersection impacts adjacent intersections during congested traffic operations. As an example, a platoon of vehicles departing an intersection would quickly arrive at the adjacent intersection. If the approaching platoon arrived during the red phase of the traffic signal, they were added to the queue already present at this intersection, thereby exacerbating the congestion further.

One STOP-sign controlled intersection was evaluated. Sarona Street is a One-Way mauka-bound roadway that intersects Kuakini Highway just south of Kalani Street. The traffic movements out of Sarona Street during the afternoon peak periods experience long delays (LOS E). Traffic signals on Kuakini Highway at the adjacent intersections of Kalani Street and Hualalai Road provide gaps in traffic at times, allowing vehicles to exit Sarona Street. However, at other times, the close proximity of Kalani Street to Sarona Street (approximately 50 feet) creates problems for vehicles turning left turning left out of Sarona Street. As noted previously, vehicle queues form regularly on the northbound Kuakini Highway approach to the Kalani Street intersection during the midday and P.M. peak hours. These queues typically block left-turn movements out of Sarona Street when the queue is greater than three vehicles long.

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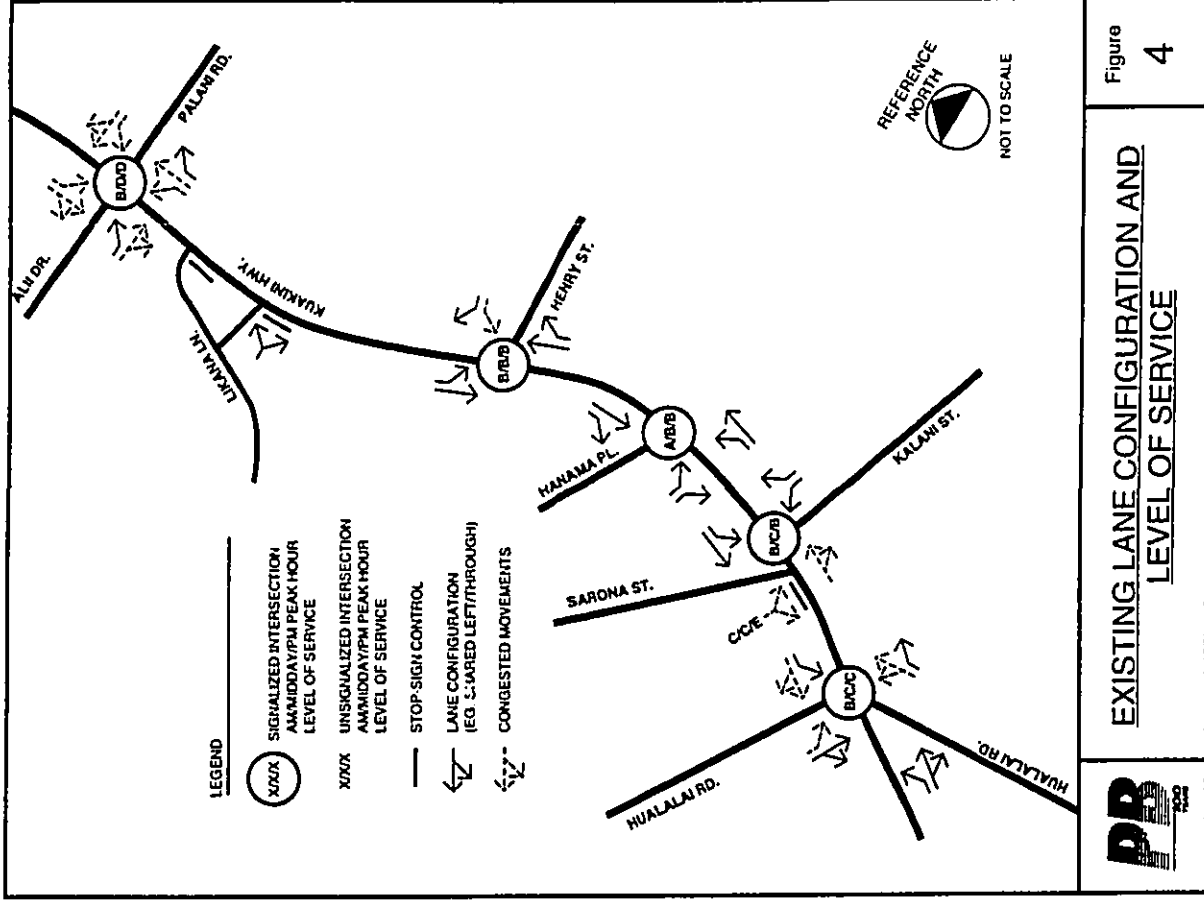
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Table 2

Existing Congested Traffic Movements on Kuakini Highway

Congested Movement	LOS	Peak Hour
Intersection of Kuakini Hwy. and Palani Rd./Alii Dr.	D/D	Midday/PM
Alii Drive eastbound shared through/right turn	D	PM
Palani Road westbound shared through/right turn	D/D	Midday/PM
westbound left turn	D/E	Midday/PM
westbound shared through/right turn	D	Midday
Kuakini Highway northbound left turn	D/D	Midday/PM
northbound through	D	Midday
southbound left turn	D	PM
southbound shared through/right turn	D	
Intersection of Kuakini Hwy. and Henry St.		
Henry Street westbound left turn	D	Midday
Intersection of Kuakini Hwy. and Kalani St.		
Kuakini Highway northbound shared through/right turn	D	Midday
Intersection of Kuakini Hwy. and Hualalai Rd.		
Hualalai Road eastbound left turn	D/D	Midday/PM
westbound shared left turn/through	D	PM
southbound shared through/right turn	D/D	PM

Figure 4 illustrates the lane configuration of the study intersections, the corresponding level of service, and also highlights the congested movements at the study intersections. Level of service worksheets are attached as Appendix 5.



Summary Of Existing Conditions

Analysis results indicate that intersection operations along Kuakini Highway between Palani Road and Hualalai Road are, for the most part, good (LOS C or better). There are specific movements at the study intersections that are identified as operating at near congested (LOS D and E) and congested (LOS F) during the midday and afternoon peak periods. Field observations verify this. Although these movements operate intermittently in a congested mode throughout the peak hours, they do cause significant disruption of traffic during congested operations.

Kailua-Kona is resort-oriented community. As such, driver tolerances of delays are expected to be very low. Congestion hurts the attractiveness of businesses located within the study segment and makes the drive inconvenient for residents who must drive on Kuakini Highway everyday. Actions that mitigate the existing, observed congestion would be beneficial in providing a more pleasant driving environment for visitors and residents alike.

III. FUTURE YEAR 2020 TRAFFIC VOLUME PROJECTIONS

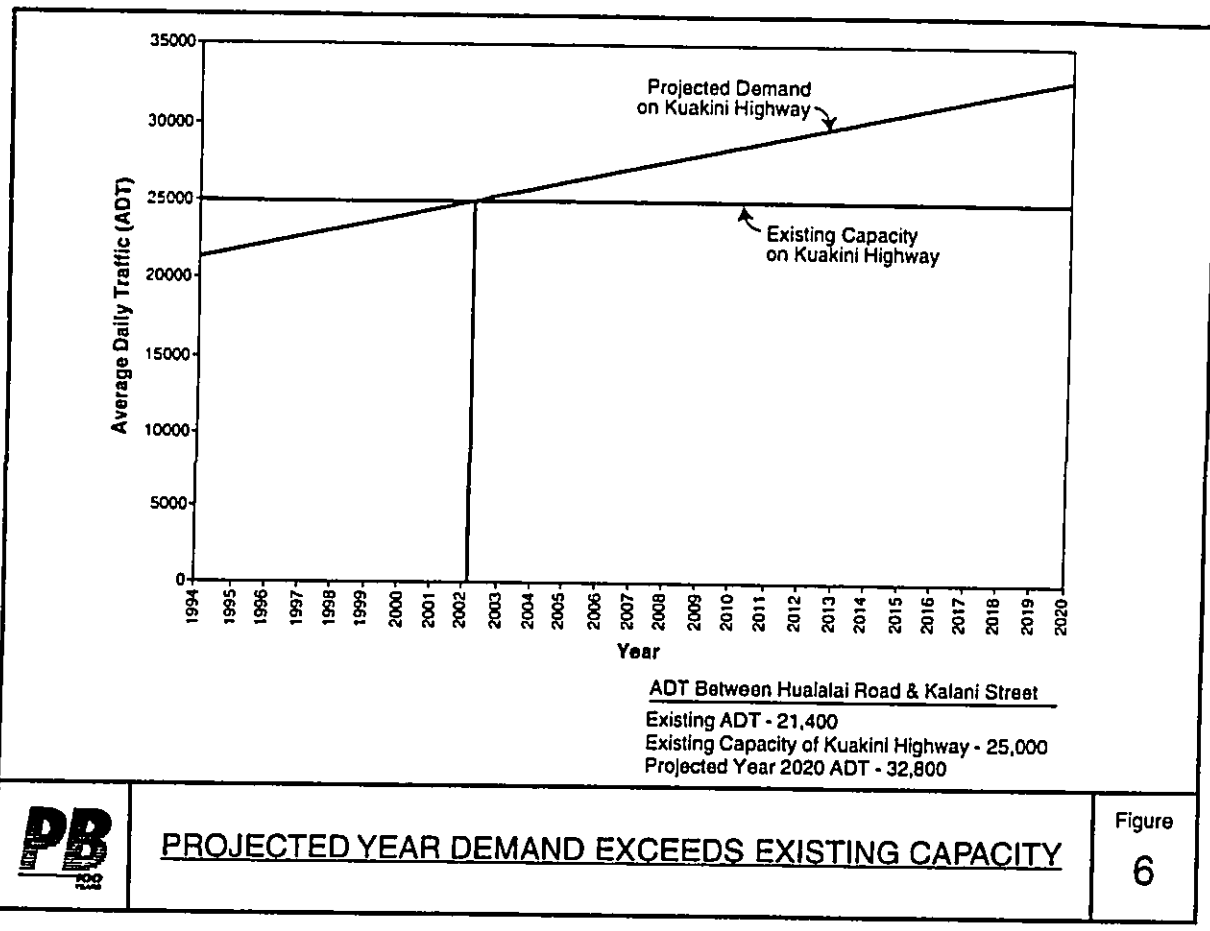
Year 2020 Daily Traffic Volumes

Future Year 2020 traffic volume projections for Kuakini Highway were derived from the Island of Hawaii Long Range Highway Plan, May 1991.

Review of the Long Range Highway Plan indicates an average annual growth rate of 1.5-2% is projected for the Kuakini Highway study corridor. Adjustments were made to the link volumes to the Year 2020 highway assignment to account for recent and anticipated changes in highway network. Future projected traffic volumes were also refined to eliminate regional through traffic from the Kuakini Highway study segment. Figure 5 summarizes the projected Future Year 2020 Daily traffic volumes.

Capacity analyses indicate that Kuakini Highway will be able to accommodate up to 25,000 vehicle trips per day (vpd). Currently, the segment of Kuakini Highway located between Hualalai Road and Kalani Street accommodates 21,400 vpd. Traffic projections from the Long Range Transportation Plan indicate that the traffic on Kuakini Highway is expected to grow to 32,800 vpd by Year 2020. Assuming a straight-line growth, these traffic projections indicate that Kuakini Highway, between Palani Road and Hualalai Road, will exceed the capacity of a two-lane roadway by Year 2003. Figure 6 superimposes the projected growth in daily traffic volumes trips onto the capacity of a two-lane Kuakini Highway.

Review of the travel patterns from the Long Range Highway Plan travel demand model indicates that this growth in traffic on Kuakini Highway is caused by traffic traveling between business areas located north of Palani Road and within the study corridor and the future residential development south of Hualalai Road.



PROJECTED YEAR DEMAND EXCEEDS EXISTING CAPACITY

Figure 6

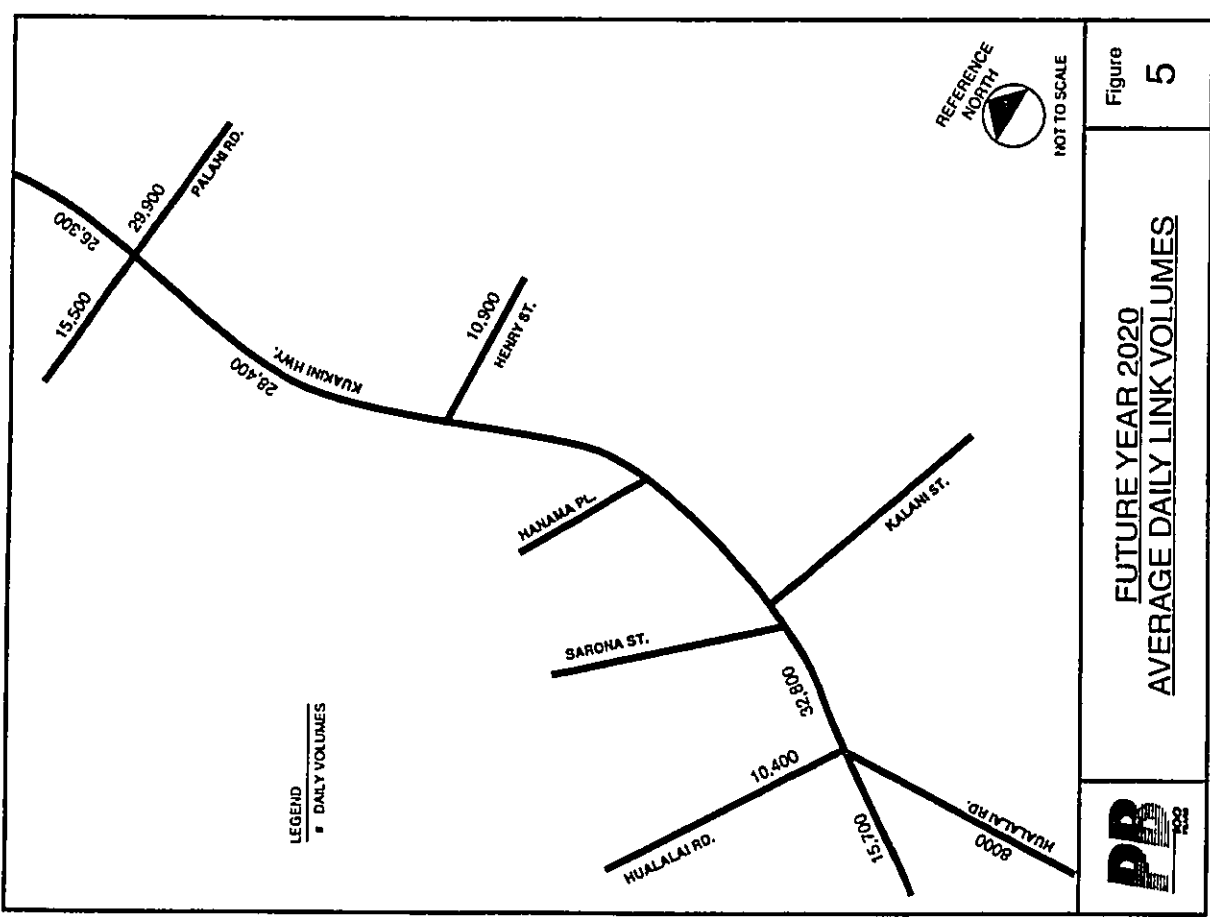
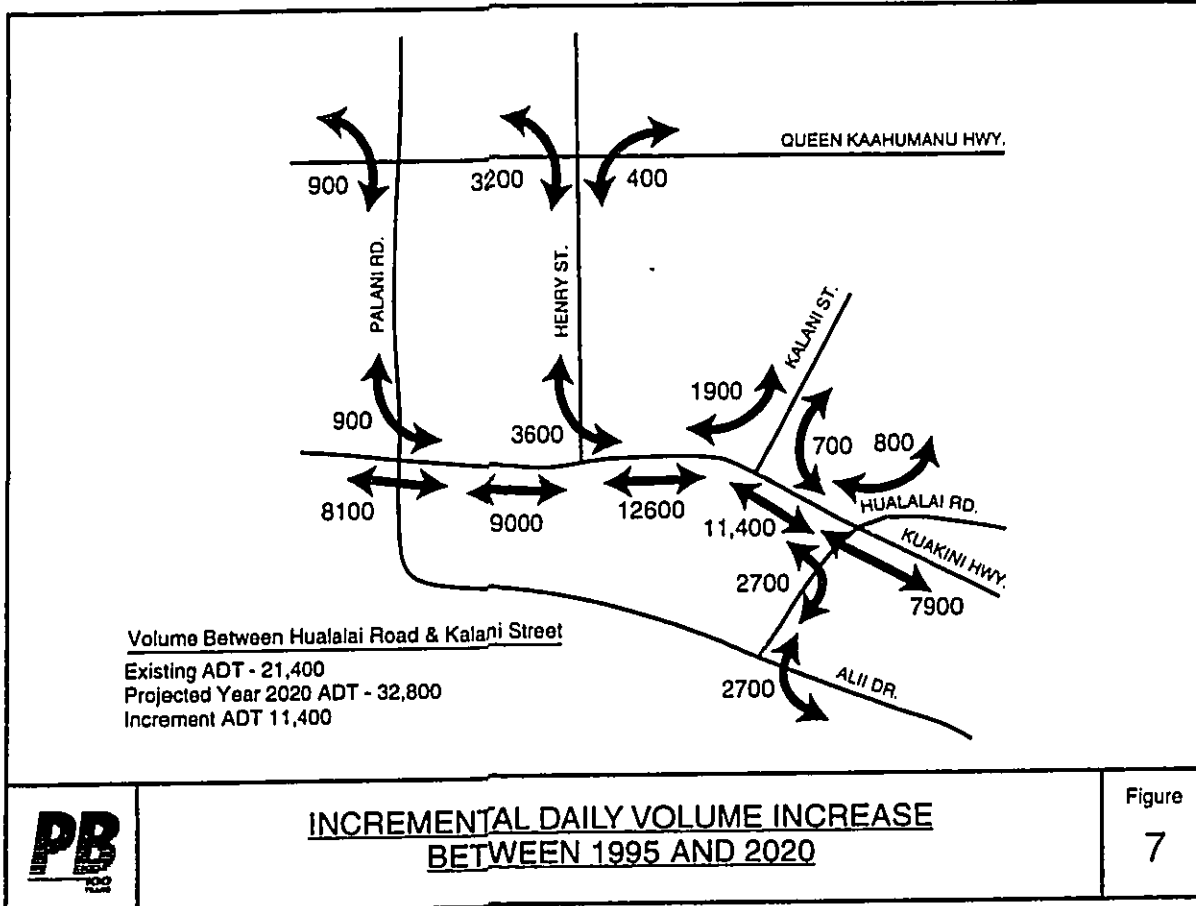


Figure 5

FUTURE YEAR 2020 AVERAGE DAILY LINK VOLUMES





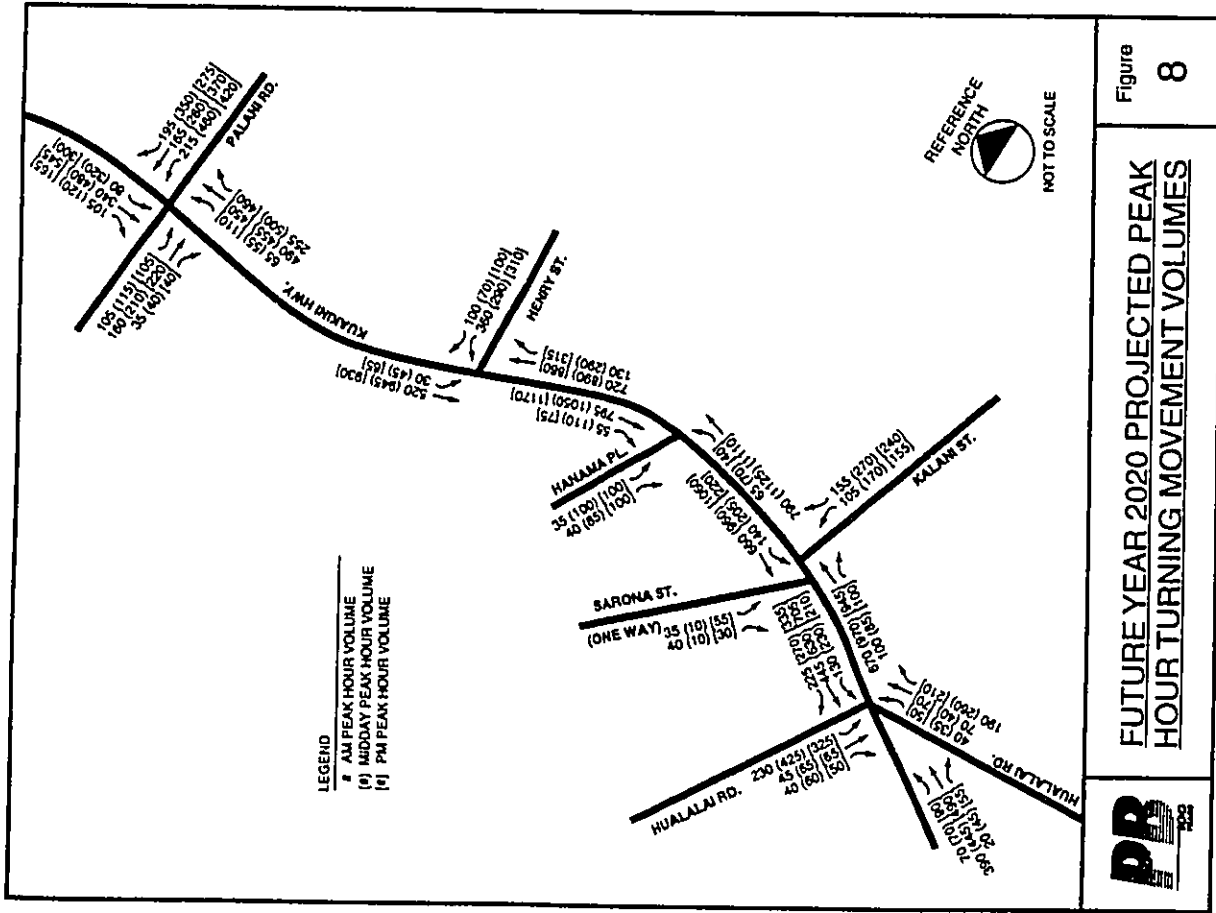
Thus, the widening of Kuakini Highway is needed to serve local travel demand within the Kailua-Kona area. Figure 7 illustrates the patterns associated with the future traffic demand increases within the study corridor.

Year 2020 Peak Hour Traffic Volumes

Morning, midday and afternoon peak hour two-way link volumes were derived by factoring the daily traffic volumes by the peak hour percentages. These peak hour percentages were based upon observed values at several locations within the Kuakini Highway study corridor. A peak hour factor of 5% was utilized for the morning peak hour, while a peak hour factor of 7% was utilized for both the midday and afternoon peak hours.

Observed directional distribution factors were also applied to the future peak hour traffic volumes with adjustments made to keep the peak hour volumes consistent with the travel demand model patterns.

Future peak hour traffic turning movements at the intersections were estimated using a technique outlined in the National Cooperative Highway Research Program (NCHRP) Report 255 Highway Traffic Data for Urbanized Area Project Planning and Design. Figure 8 illustrates the resulting Future Year 2020 Projected Peak Hour Turning Movement Volumes at key intersections within the Kuakini Highway study corridor.



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IV. FUTURE YEAR 2020 ALTERNATIVES ANALYSIS

Methodology

The future Year 2020 No-build, Transportation System Management (TSM), and Build alternatives for the improvement of Kuakini Highway were evaluated from a traffic operations perspective using the methodologies outlined in the 1994 Highway Capacity Manual (HCM).

The No-Build Alternative utilized existing roadway geometry and traffic signal timings. Future peak hour turning movements were applied to the No-Build Alternative, and intersection operations were analyzed.

The TSM Alternative attempts to accommodate the future peak hour turning movements by synchronizing traffic signal timing in the Kuakini Highway study corridor. The Arterial Analysis Package (AAP), which utilizes both the Transyt 7F and the Passer II-90 computer programs interactively to optimize traffic signals within a roadway corridor, was used to improve traffic flow and increase efficiency at signalized intersections in the Kuakini Highway study corridor.

The Build Alternative assumes the widening of Kuakini Highway from a two-lane roadway to a four-lane roadway. The existing median turn lanes are retained at the intersections and selected geometric improvements are proposed at the Palani Road intersection. Traffic signal synchronization is also assumed in this alternative.

Summary Of Future Year 2020 Intersection Analyses

No-Build Alternative

The intersection operations analyses indicate that most of the intersections within the study corridor will operate at level of service (LOS) F, resulting in long delays on Kuakini Highway and on some of the side streets. Because of the close spacing of intersections between Henry Street and Hualalai Road, the LOS F conditions are

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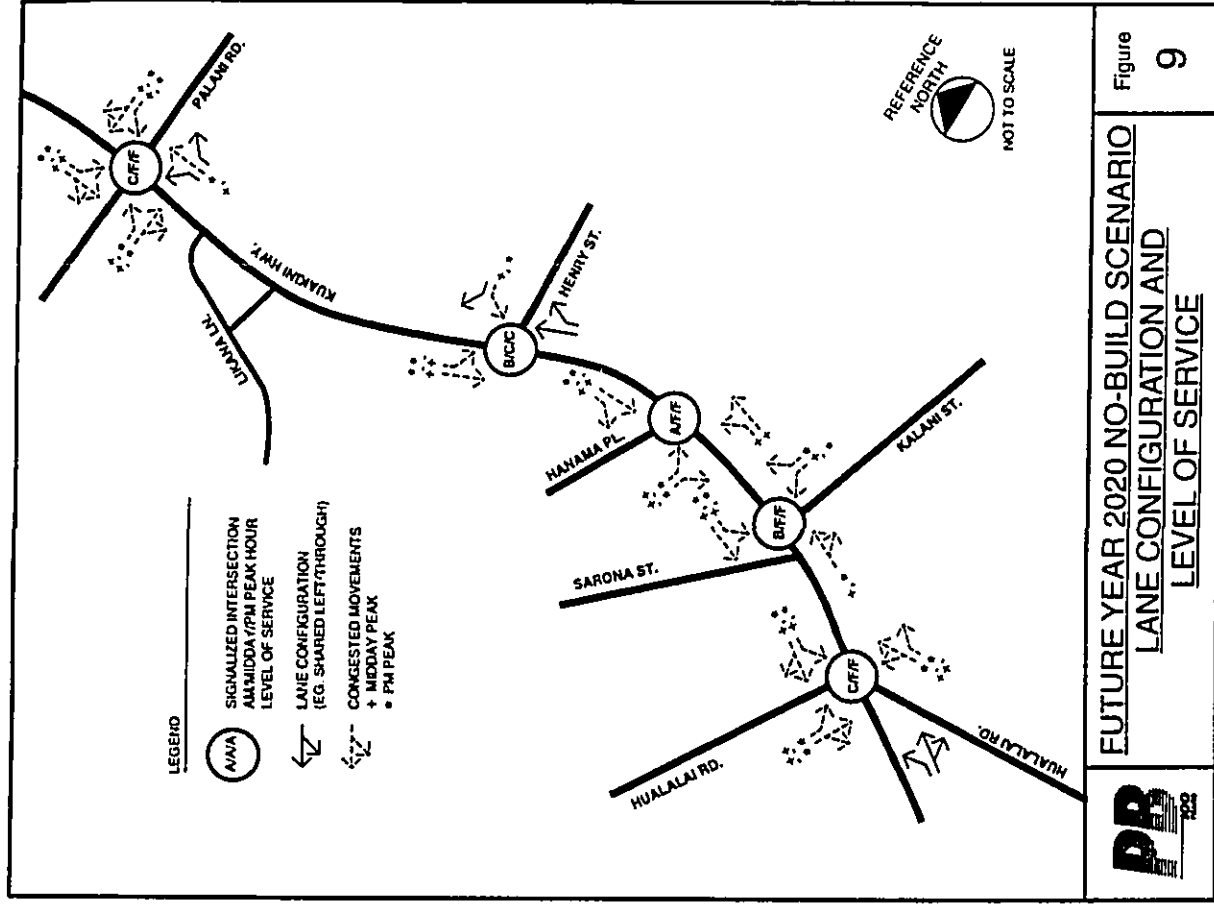
projected to cause significant interference between intersections due to vehicle queuing. Figure 9 illustrates the Future Year 2020 No-Build intersection level of service (LOS).

The Hualalai Road and the Palani Road intersections are expected to be the most congested intersections on Kuakini Highway during the midday and afternoon peak hours. The southbound through movement on Kuakini Highway at Hualalai Road would probably queue back through the Kalani Street, Hanama Place, and, possibly, Henry Street, causing these intersections to be congested as well.

The northbound through movements at Palani Road are projected to queue beyond the northbound right-turn lane, blocking access to this lane and causing delay to the northbound to eastbound right turns. Additionally, the eastbound through lane on Ali Drive is anticipated to queue beyond the adjacent left-turn bay, blocking access to it and also causing additional delay to the eastbound to northbound left turns. Traffic in the southbound through lane is also anticipated to queue beyond the southbound to eastbound left-turn bay with similar results. The westbound shared through/right lane is estimated to have a queue length of approximately 700 feet which will queue through the Kopiko Street and Palani Road intersection. This queuing will also block access to the driveways along the north side of Palani Road.

ISM Alternative

One of the ways to increase capacity through a given corridor such as Kuakini Highway is to synchronize the traffic signals together so that there will be added through capacity. When the volume flowing on the major corridor is too great, however, the delay on the side streets become unbearable. Review of the Kuakini Highway corridor showed that synchronizing the traffic signals could add some capacity to the corridor by utilizing long cycle lengths for the through traffic on Kuakini Highway. Although this will ease some of the congestion for through



vehicles, analysis shows that it will not provide the additional capacity to mitigate traffic congestion within the study corridor. Most of the intersections will still operate at LOS F resulting in major delays throughout the Kuakini Highway study corridor. The Palani Road, Hualalai Road, and Kalani Street intersections are expected to be the most congested during the midday and afternoon peak hours. Figure 10 illustrates the anticipated level-of-service and delay at the five signalized intersections for the TSM Alternative.

Although it will increase delays to the side streets, the TSM Alternative is anticipated to reduce the delay to the through movements at each of the intersections. It is also estimated that the overall intersection delay will also be reduced with implementation of the TSM Alternative. These improvements will not be enough to provide relief from the projected congestion within the Kuakini Highway corridor.

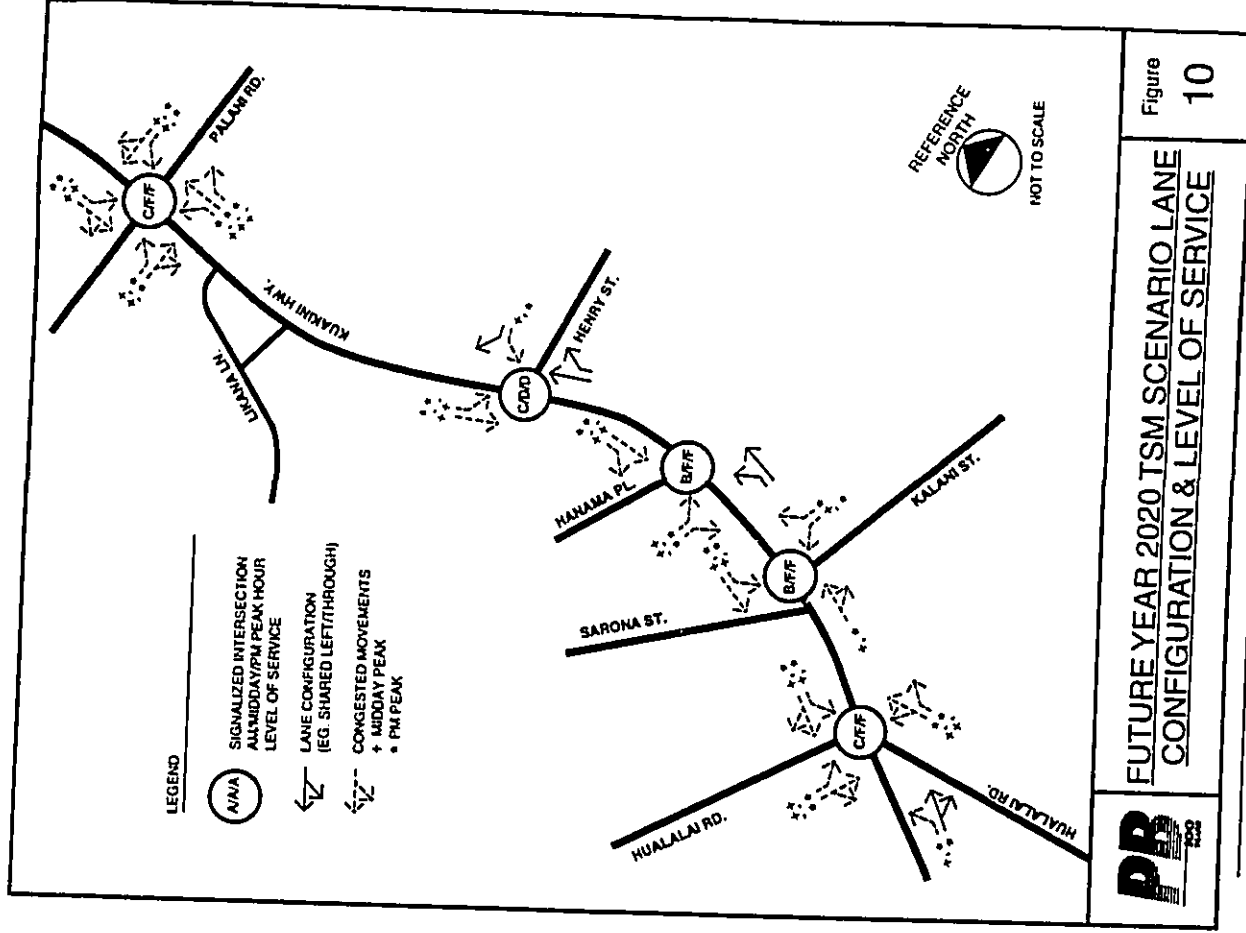
Build Alternative

The Build Alternative proposes to widen Kuakini Highway from its present two through lanes to four through lanes between Palani Road and Hualalai Road. Median left-turn lanes will be maintained at intersections, and the traffic signals are proposed to be synchronized.

The increased number of lanes on Kuakini Highway that are proposed as part of the Build Alternative allows the implementation of related improvements at Palani Road and Henry Street.

- Palani Road

To accommodate the substantial westbound to southbound left-turn movement at this intersection, an additional westbound left-turn lane is proposed. The modified westbound intersection approach would be configured as an exclusive left-turn lane, a shared left/through lane, and an



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FUTURE YEAR 2020 TSM SCENARIO LANE CONFIGURATION & LEVEL OF SERVICE

Figure 10

exclusive right-turn lane. The configuration will provide two lanes for westbound to southbound left-turning traffic. The widening of Kuakini Highway provides the necessary number of lanes on southbound Kuakini Highway to receive traffic from the double left-turn lanes. Because of the proposed shared left/through lane configuration on the westbound approach, the phasing of traffic signal operation at the Kuakini/Palani intersection will need to be modified to provide a separate phase for the westbound traffic and a separate phase for eastbound traffic.

Additionally, a current project of the County of Hawaii proposes an exclusive right-turn lane at the southbound approach, but, with the widening of Kuakini Highway, the proposed project would convert the exclusive right-turn lane to a shared right/through lane to accommodate the substantial southbound through movement. The modified southbound approach would have an exclusive left-turn lane, an exclusive through lane, and a shared right/through lane.

- Henry Street

Again, to handle significant westbound to southbound traffic, it is proposed to modify the lane configuration of the westbound Henry Street approach to include an additional left-turn. This could be accomplished easily since the left-turn bay already exists today and would only require restriping to activate it. This will increase the capacity of the intersection and provide better progression by reducing the amount of green time required to process the traffic from Henry Street. Again, this is an improvement made possible by the widening of Kuakini Highway.

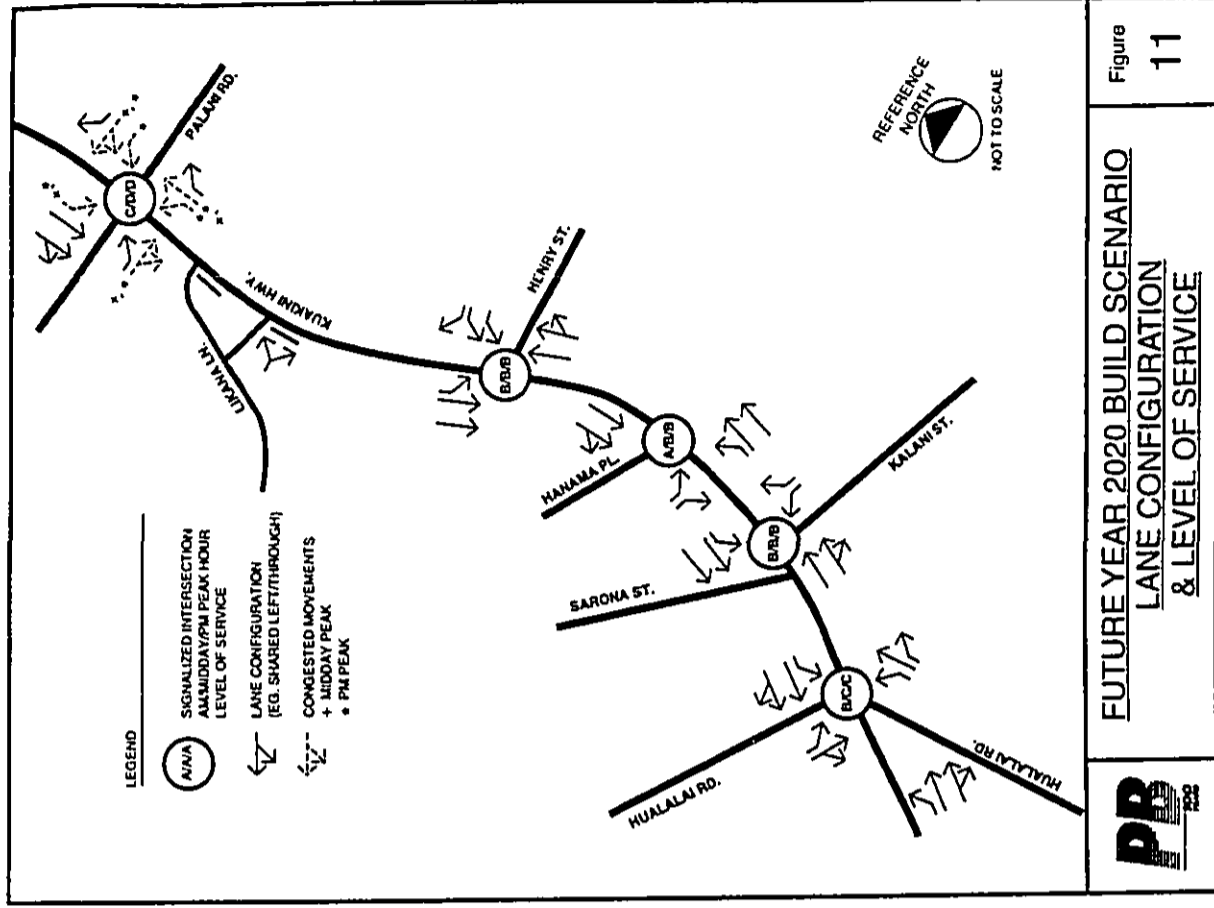


Figure 11 summarizes the Future Year 2020 Build Scenario Recommended Lane Configurations and Level of Service. Widening Kuakini Highway to four through lanes resolves much of the operational difficulties at the intersections within the study corridor. Four signalized study intersections (Henry Street, Hanama Place, Kalani Street and Hualalai Road) operate well overall, LOS B or better, during the morning peak hour. These intersections also operate acceptably well overall, LOS C or better, during the midday and afternoon peak hours. This is a major improvement from the LOS F operation projected for the No-Build and TSM alternatives.

Operations at the Kuakini Highway/Palani Road intersection will improve from the LOS F projected for the No-Build and TSM alternatives to LOS D during the midday and afternoon peak hours. The additional westbound to southbound left-turn lane made possible by the Kuakini Highway widening will be beneficial in mitigating the traffic queue on the westbound approach of the Palani Road intersection; therefore, driveway access for businesses on the north side of Palani Road will improve.

With the proposed widening of Kuakini Highway and the synchronization of the five traffic signals, the average delay of per vehicle driving through the Kuakini Highway corridor will be reduced. Table 3 illustrates the delay per vehicle.

Table 3
Kuakini Highway
Average Delay Per Vehicle (Seconds)

Alternative	No-Build	TSM	Build
AM Peak Hour	15	20	10
Mid-Day Peak Hour	55	35	25
PM Peak Hour	95	50	25

V. SUMMARY AND CONCLUSION

Analysis results indicate that Kuakini Highway in its present configuration, a two lane roadway, will reach over capacity conditions in the year 2003. An analysis of existing conditions has identified that congested conditions are currently occurring along portions of Kuakini Highway today.

Since Kailua-Kona is a resort-oriented community, driver tolerances for delays and congestion are low. Congestion hurts businesses along the Kuakini Highway corridor and creates inconveniences for residents that utilize the corridor.

Measures such as synchronizing of the traffic signals along the corridor will improve progression through the area and will also reduce delay. However, the analysis indicates that synchronization of the traffic signals will not provide enough capacity to accommodate the future traffic growth in the Kailua-Kona area. Therefore, the widening of Kuakini Highway from two through lanes to four through lanes while maintaining the median left-turn lanes at the intersections will be required to increase capacity, reduce congestion, and reduce delay along the corridor.

REFERENCES

- 1. State of Hawaii, Department of Transportation and County of Hawaii, Departments of Planning and Public Works, Island of Hawaii Long Range Highway Plan, Final Report, May 1991
- 2. County of Hawaii, Planning Department, Master Plan for Kailua-Kona, April 1994.
- 3. Transportation Research Board, National Research Council, Special Report Highway Capacity Manual, Washington D.C., 1994
- 4. Transportation Research Board, National Cooperative Highway Research Program, Report 255 Highway Traffic Data for Urbanized Area Project Planning and Design, 1981

The appendices are not included with the report. They can be examined at, or requested from, the County of Hawaii, Department of Public Works.

Appendix C
Hazardous Materials Assessment

Appendix C
Hazardous Materials Assessment



Environmental Database, Inc.
 (303) 794-8389
 1-800-982-4627 Fax

The *best* source for your information!

Property Location:
 Kuakini Highway Project
 Kona

Report Prepared for:
 Jan Reichelderfer
 Parsons, Brinckerhoff, Quade & Douglas, Inc.
 Pacific Tower, Suite 3000
 Honolulu, HI 96813

Custom Data report
 Prepared By:
 Environmental Database, Inc.
 7061 South University Boulevard, Suite 300
 Littleton, Colorado 80122
 (800) 982-4627

COMMENTS TO CLIENT REGARDING THIS SEARCH:

-- Unlocatables have been included in this report.

DISCLAIMER

This report is in no way to be taken as a declaration of the legal status of any property herein mentioned. The information contained in this report has been gathered from government sources and every effort was made to search the latest data available to us at completion time. While every reasonable attempt has been made to ensure the accuracy of the information contained herein, it is understood that we cannot guarantee the accuracy of the data contained in the original reports. It is understood that the purpose of these maps is to give the user a "working approximation" of the positions of reported site locations. In no event will EDI be liable to anyone for damages of any kind.

Environmental Database, Inc.
 EDI JOB # 12076
 Report Date: 06/26/96

**ENVIRONMENTAL DATABASE, INC.
 DATABASE STATUS**

Database Searched	Date of Data	Last Contact	EDI Standard Search Radius	Comments
AIRS	08/10/95	08/10/95	Facility	Not ASTM requirement Source: EPA
CERCUS	09/30/95	05/31/96	1/2 Mile	Quarterly subscription Requested update 5/31/96. NTIS slow in releasing quarterly data. Source: NTIS
DOCKET	09/30/95	07/22/96	Facility & Address	Ordered quarterly Source: NTIS
ERNS	03/31/96	04/15/96	Site	Obtained from Internet Source: EPAHQ
FINDS	09/30/95	05/31/96	Site	Quarterly subscription Requested update 5/31/96. NTIS slow in releasing quarterly data. Source: NTIS
NCDB	04/04/94	04/01/94	Facility	Not ASTM requirement Source: EPA
NPL	09/30/95	05/31/96	1 Mile	Quarterly subscription Requested update 5/31/96. NTIS slow in releasing quarterly data. Source: NTIS
PADS	10/02/93	01/20/94	Site	Not ASTM requirement Source: EPA8
PCS	09/01/92	03/09/94	Facility	Not ASTM requirement Source: EPA
RCRIS	10/31/95	06/04/96	1 Mile TSD 600' Lg&Sm	Internet data 9/95. Requested update 5/31/96. NTIS slow in releasing quarterly data. Source: NTIS
RODS	12/01/95	12/28/95	Facility	Not ASTM requirement Source: CBC
SETS	01/31/96	02/22/96	PRP Name	Ordered quarterly Source: NTIS
SSTS	02/01/93	03/23/94	Site	Not ASTM requirement Source: EPA
TRIS	12/31/93	02/26/96	1/4 Mile	Most current data avail. Source: NTIS
TSCA	05/14/86	03/23/94	Site	Historic (1986) only Will never be updated. Source: NTIS
HI CERCLA		05/03/96	1 Mile	Environmental Protection Agency Region IX 415 744-1500 State Cerclis equivalent does not exist for this state.
HI LANDFILL	10/15/95	06/07/96	1/2 Mile	HAWAII DEPARTMENT OF HEALTH ENVIRONMENTAL MANAGEMENT DIVISION 808 586-4240
HI LUST	01/13/94	05/03/96	1/2 Mile	HAWAII DEPARTMENT OF HEALTH ENVIRONMENTAL MANAGEMENT DIVISION 808 586-4226
HI RUST	02/23/95	06/07/96	600'	HAWAII DEPARTMENT OF HEALTH ENVIRONMENTAL MANAGEMENT DIVISION 808 586-4233 Hawaii unable to provide update, computer probs. Per J. Richardson.

Environmental Database, Inc.

EDI JOB # 12076
 Report Date: 06/26/96

**ENVIRONMENTAL DATABASE, INC.
FEDERAL & STATE DATABASE REFERENCE SHEET**

National Priorities List (NPL)

This is a record of CERCLA sites which are considered to pose an immediate threat to human health and the environment. This conclusion is reached by the EPA based on the Hazards Ranking Scoring System (HRS), which have scored a 28.5 or higher, and for which a remedial investigation and feasibility study will be performed.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

CERCLIS is the Superfund database which contains information on all aspects of hazardous waste sites from initial discovery to listing on the National Priorities List. Information includes an inventory of sites, planned and actual site activities and financial information.

Superfund Amendments and Reauthorization Act (SARA/TRIS)

The Toxic Release Inventory contains information from facilities on the amounts of over 300 listed toxic chemicals that the facilities release directly to air, water or land, or that are transported off-site. Included are facility data, substance identification, environmental chemical release, off-site waste transfer, and waste treatment/minimization information.

Emergency Response Notification System (ERNS)

ERNS tracks the initial notification of reported oil and hazardous waste spills. The database contains many types of information regarding releases of oil and hazardous substances, including the following: discharger information, date of release, material and amount released, incident location, response action taken, etc.

Resource Conservation and Recovery Act (RCRA)

RCRIS is the national system for tracking of events and activities related to facilities which generate, transport, and treat, store, or dispose of hazardous waste. This data set includes handler identification, permit application status, compliance monitoring and enforcement sensitive information.

RCRA "Corrective Action" (RACT) - Permitted facilities with corrective action case files
RCRA RAAATS - Administrative Action Tracking Systems.

Facility Index System (FINDS)

FINDS is an inventory of information on facilities regulated/tracked by EPA programs. It was developed to support cross-media analyses as well as regulatory and enforcement actions by pointing to other EPA databases that regulate or track a facility. All facilities that have received an EPA ID number should be in the FINDS database.

National Compliance Data Base (TSCA/FIFRA)

Formerly FIFRA and TSCA Enforcement System (FATES), now information is housed on a regional level as the FIFRA TSCA Tracking System (FTTS), and Section Seven Tracking System (SSTS), described below. The NCDB tracks facility information, inspections, actions, cases, etc... This information is a compliance tracking database supporting the Toxic Substances Control Act.

Permit Compliance System (PCS)

PCS supports the National Pollution Discharge Elimination System under the Clean Water Act. Each permit record contains information which identifies and describes the facility, specifies the pollutant discharges limits, records the actual amounts of pollutants measured in wastewater discharges, and tracks compliance schedules and violations.

Federal Reporting Data System (FRDS)

This includes information on the Public Water Systems (PWS), including identification information, noncompliance related events, violations of the Safe Drinking Water Act (SDWA), enforcement actions, identification of significant non-compliers, and information on variances, exemptions, and waivers.

Section Seven Tracking System (SSTS)

This database includes information on pesticide producing facilities and their parent companies. Included are types and amounts of pesticides, active ingredients, and devices that are produced, sold, or distributed.

PCB Activity Database Set (PADS)

All facilities generating, storing, transporting or disposing of polychlorinated biphenyls.

Aerometric Information Retrieval System (AIRS)

AIRS is the national repository for information about airborne pollution in the United States. Contained in the database is facility permit information, emissions and compliance data on pollution point sources, measurements of ambient concentrations of air pollutants, and estimates of area-wide emissions from various sources.

Site Enforcement Tracking System (SEIS/PRP)

This database tracks individuals, businesses, municipalities, and other entities that have been identified as being potentially liable to fund or repay environmental cleanup costs.

Civil Enforcement Docket (DOCKET)

The Enforcement Docket tracks information on civil judicial enforcement cases for all environmental statutes.

Integrated Risk Information System (IRIS)

Health risk and EPA regulatory information on some 400 chemicals. IRIS contains the EPA consensus opinion on potential chronic human health effects related to chemical hazard identification and dose-response assessment.

State Superfund/Cleanup Sites (SF)

Each State has the right to assemble and maintain a list of State designated - hazardous waste cleanup sites. Some states use the EPA CERCLIS as their reporting system, other states have a unique database independent of the EPA sites.

State CERCLIS Equivalent

These are the state equivalents of the Federal CERCLIS records. They are compendiums of sites which are being investigated as potential uncontrolled hazardous waste sites.

State Landfills/Solid Waste Disposal Sites (LF)

This list tracks the active and closed landfills and waste disposal sites reported by each state agency.

Leaking Underground Storage Tanks (LUST)

This state list tracks all reported Leaks and releases from Underground Storage Tanks. The majority of these incidents involve petroleum dispensing facilities.

Registered Underground Storage Tanks (RUST)

The state information system tracks the known and permitted registered underground storage tanks. The majority of these sites involve petroleum dispensing facilities. Some states are also including aboveground tanks.

ENVIRONMENTAL DATABASE, INC.
DATABASE STATUS

Database Searched: HI SF
Date of Data: 05/03/96
Last Contact: 05/03/96
EDJ Standard Search Radius: 1 Mile
Comments: Environmental Protection Agency Region IX 415 744-1500 Uses EPA Cercks, Cercis radius expanded to 1 mile.

ENVIRONMENTAL DATABASE, INC.
SUMMARY OF FINDINGS

SUBJECT SITE: KUAKINI HIGHWAY PROJECT

HI
KONA COUNTY

Map #	Facility Name	Fac ID #	Database	Search Radius	Distance From Site (Miles)
				600' 1 Mi 1 Mi	
2	CHEVRON USA INC (CANCEL 80) KAILUA KONA CHEVRON KAILUA KONA CHEVRON KAILUA-KONA CHEVRON	98989999999 HID981634314 HID981634314 9-601135	FINDS RCRA FINDS REG UST	X X X	0.07 0.07 0.07
3	GOODYEAR TIRE CENTER	9-601610	REG UST	X	0.10
4	LONGS DRUG STORE NUMBER 249	HID000272955	FINDS	X	0.20
5	GAS EXPRESS STATION #85	9-600704	LEAK UST	X	0.20
6	KONA PEST CONTROL INC	HID059471268	FINDS	X	0.22
7	PAYLESS DRUG PAY AND SAVE	HID000881219 HID980896138	FINDS FINDS	X X	0.24 0.24
8	CONSUMER TIRE WAREHOUSE	HID981657547	FINDS	X	0.25
9	PACIFIC MACHINERY	HID984467456	FINDS	X	0.26
10	KONA TRANSPORTATION CO., INC.	9-601617	LEAK UST	X	0.32
11	KAILUA FIRE STATION	9-601086	LEAK UST	X	0.33
12	HAWAII MOTORS INC HAWAII MOTORS INC HAWAII MOTORS INC	HID981634314 HID981634314 9-601902	RCRA FINDS REG UST	X X	0.35 0.35 0.35
13	KONA SHELL SERVICE	9-601012	REG UST	X	0.37
14	WEST HAWAII TODAY WEST HAWAII TODAY	HID982008658 HID982008658	RCRA FINDS	X X	0.45 0.45
15	TEXACO FOOD MART TEXACO FOOD MART	9-600486 9-600486	LEAK UST REG UST	X	0.50 0.50
16	ALAMO RENT A CAR, INC.	9-601715	LEAK UST	X	0.50
17	KEAHOE AIRPORT -BLDG 301	9-602750	LEAK UST	X	0.50
18	UNOCAL 76 SS L 4231 UNOCAL 76 SS L 4231	HID984468918 HID984468918	FINDS RCRA	X	0.52 0.52
19		000380153	ERMS	X	0.59

Number of occurrences found in search : 27

Databases not represented in this Summary of findings were either searched with no records found, or the database was not ordered.

Environmental Database, Inc.

EDJ JOB #: 12076
Report Date: 06/26/96

EDJ Job #: 12076
Report Date: 06/26/96

HAWAII
RCRA NOTIFIER FACILITY REPORT

Map Point: 2

EDI #: 688R4

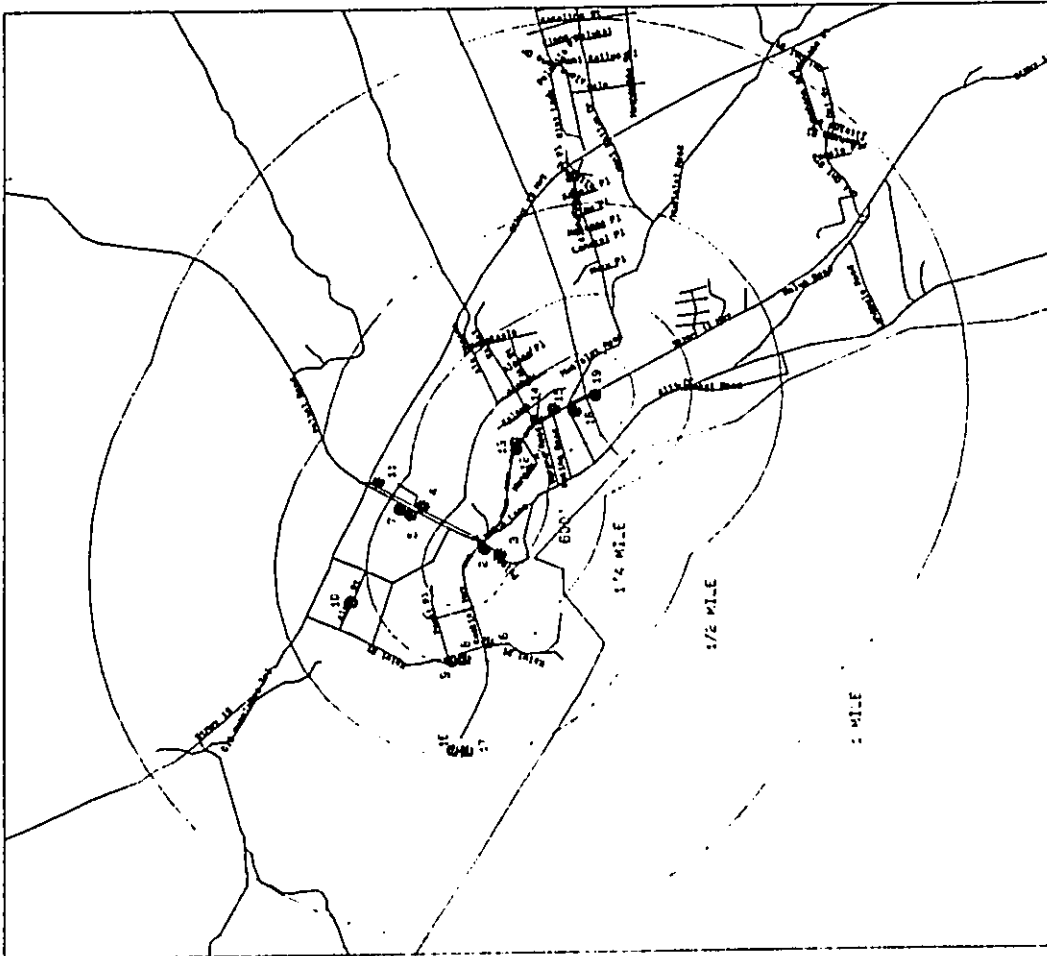
Facility: KAILUA KONA CHEVRON
75 564 PALANI RD
KAILUA KONA HI 96740
HAWAII County

EPA ID Number: HD982441867
EPA Region: 09
Longitude: . . .
Latitude: . . .

Owner: NOT REQUIRED
Contact: ROBERT WEISS 8081329-1437 (415)555-1212

RCRA Facility Designations

Generator Type: CONDITIONALLY EXEMPT
Transporter Type: UNVERIFIED



Kauihi Highway Project, Kailua-Kona, HI
Scale: 1"=1800'/EDI#12076/June 26, 1996



ENVIRONMENTAL DATABASE, INC. - LITTLETON, COLORADO

The Resource Conservation and Recovery Inventory System (RCRIS) is the national system for tracking events and activities related to facilities which generate, transport, or treat, store, or dispose of hazardous waste.

Environmental Database, Inc.

EDI JOB #: 12076
Report Date: 06/26/96

HAWAII
FINDS FACILITY REPORT

EDI #: 14F9

Map Point: 2

Facility: CHEVRON USA INC (CANCEL 80)
P.O. BOX 386
KAILUA-KONA HI 96740
Region: 09
County:

Facility Update Date: 950804
Facility Create Date:

EPA #: 999999999999

Federal Facility: U
Indian Land: U

EPA Program Office Listing for Facility

FED SYSTEM	FEDERAL ID	UPDATE	CREATE	DUNS ID	SIC CODES
SSTS	000522HI 005		950804		73925122844

EDI #: 816F

Facility: KAILUA KONA CHEVRON
75-5644 PALANI RD
KAILUA KONA HI 96740
Region: 09
County: HAWAII

Facility Update Date: 930916
Facility Create Date: 921005

EPA #: HD982441867

Federal Facility: N
Indian Land: U

EPA Program Office Listing for Facility

FED SYSTEM	FEDERAL ID	UPDATE	CREATE	DUNS ID	SIC CODES
ACTIVE INDEX RECO			930916	921005	
RCRIS	HD982441867		950803	921005	007191745
D&B RECORD	007191745		950821	921005	54115541

The Facility Index System (FINDS) is an inventory of information on facilities regulated/tracked by EPA programs.
Environmental Database, Inc.
EDI JOB #: 12076
Report Date: 06/26/96

HAWAII
REGISTERED UNDERGROUND STORAGE TANKS

Map Point: 2

EDI #: 9601135U

Facility: KAILUA-KONA CHEVRON
75-5644 PALANI RD
KAILUA KONA HI 96740
HAWAII Island

Facility ID: 9-601135

Owner: CHEVRON U.S.A INC
1001 BISHOP ST
PALAHI TOWER SUITE 1000
HONOLULU HI 96813

Tank ID
1
2
3
4

Tank Information
07-19-1983 CURRENTLY IN USE 10000 GASOLINE
07-19-1983 CURRENTLY IN USE 10000 GASOLINE
07-19-1983 CURRENTLY IN USE 10000 GASOLINE
07-19-1983 CURRENTLY IN USE 1000 USED OIL

REGISTERED UNDERGROUND STORAGE TANKS: These are state records tracking known and permitted underground storage tanks. Some states also include above ground storage tanks.
Environmental Database Inc.
EDI JOB #: 12076
Report Date: 06/26/96

HAWAII
REGISTERED UNDERGROUND STORAGE TANKS

EDI #: 9601610U

Map Point: 3

Facility: GOODYEAR TIRE CENTER
75-5699 PALANI RD
KAILUA-KONA HI 97640
HAWAII Island

Facility ID: 9-601610

Owner: GOODYEAR TIRE & RUBBER CO
1144 E MARKET ST
AKRON OH 44316

Tank ID 1 Tank Information
04-15-1984 CURRENTLY IN USE 500 USED OIL

HAWAII
FINDS FACILITY REPORT

EDI #: 81F5

Map Point: 4

Facility: LONGS DRUG STORE NUMBER 249
75 5395 PALANI RD
KAILUA KONA HI 96740

EPA #: H10000272955

Region: 09
County: HAWAII

Facility Update Date: 950106
Facility Create Date: 940510

Federal Facility:
Ind on Land: N

EPA Program Office Listing for Facility

FED SYSTEM	FEDERAL ID	UPDATE	CREATE	DUNS ID	SIC CODES
------------	------------	--------	--------	---------	-----------

ACTIVE INDEX RECO		950106	940510		
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RCRIS	H10000272955	950803	940510		
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REGISTERED UNDERGROUND STORAGE TANKS: These are state records tracking known and permitted underground storage tanks. Some states also include above ground storage tanks.

EDI JOB #: 12076
Report Date: 06/26/96

The Facility Index System (FINDS) is an inventory of information on facilities regulated/tracked by EPA programs.

EDI JOB #: 12076
Report Date: 06/26/96

Environmental Database, Inc.

Environmental Database, Inc.

HAWAII
LEAKING UNDERGROUND STORAGE TANK REPORT

EDI #: 920176L

Map Point: 5

Facility:
GAS EXPRESS STATION #86
74-590-8 PALANI RD.
KAILUA-KONA HI 96740
HAWAII County

Owner:
PRUGAS EXPRESS INC.
711 KAPOLANI BLVD., SUITE 650
HONOLULU HI 96813

Date Of Document:
01/05/93
Facility ID:
9-600704
Leak ID:
920176

HAWAII
FINDS FACILITY REPORT

EDI #: 150F

Map Point: 6

Facility:
KONA PEST CONTROL INC
74-5557A KAWI ST
KAILUA KONA HI 96740
Region:
09
County:
HAWAII

EPA #: H0059471268

Facility Update Date: 950106
Facility Create Date: 930421

Federal Facility:
Indian Land: U U

EPA Program Office Listing for Facility

FED SYSTEM	FEDERAL ID	UPDATE	CREATE	DUNS ID	SIC CODES
ACTIVE INDEX RECO		950106	930421		
RCRIS	H0059471268	930924	930421		

LEAKING UNDERGROUND STORAGE TANKS: This state list tracks all known or reported leaks and releases from underground storage tanks.

Environmental Database, Inc.

EDI JOB #: 12076
Report Date: 06/26/96

The Facility Index System (FINDS) is an inventory of information on facilities regulated/tracked by EPA programs.
Environmental Database, Inc.
EDI JOB #: 12076
Report Date: 06/26/96

HAWAII
FINDS FACILITY REPORT

EDI #: 218F5

Map Point: 7

Facility: PAYLESS DRUG
74 5584 PALANI RD
KAILUA KONA HI 96740
Region: OS
County: HAWAII

Facility Update Date: 950803
Facility Create Date: 841013

EPA #: H10000881219

Federal Facility:
Indian Land: N N

EPA Program Office Listing for Facility

FED SYSTEM	FEDERAL ID	UPDATE	CREATE	DUNS ID	SIC CODES
ACTIVE INDEX RECO		950106	841013		
RCRIS	H10000881219	950803	941013		

EDI #: 365F

Map Point: 7

Facility: PAY AND SAVE
74 5584 PALANI RD
KAILUA KONA HI 96740
Region: OS
County: HAWAII

Facility Update Date: 930916
Facility Create Date: 851210

EPA #: H10980896138

Federal Facility:
Indian Land: U U

EPA Program Office Listing for Facility

FED SYSTEM	FEDERAL ID	UPDATE	CREATE	DUNS ID	SIC CODES
SSTS	H10980896138	930916	851210		

HAWAII
FINDS FACILITY REPORT

EDI #: 596F

Map Point: 8

Facility: CONSUMER TIRE WAREHOUSE
74 5548 A KAIWI ST
KAILUA KONA HI 96740
Region: OS
County: HAWAII

Facility Update Date: 950803
Facility Create Date: 900627

EPA #: H10981657547

Federal Facility:
Indian Land: N N

EPA Program Office Listing for Facility

FED SYSTEM	FEDERAL ID	UPDATE	CREATE	DUNS ID	SIC CODES
ACTIVE INDEX RECO		950106	900627		
RCRIS	H10981657547	950803	900627		501475387539

HAWAII
FINDS FACILITY REPORT

Map Point: 9

EDI #: 1043F

Facility: PACIFIC MACHINERY
74 5536 C KAYI
KAILUA KONA HI 96740
Region: 09
County: HAWAII
Facility Update Date: 950106
Facility Create Date: 921016

EPA #: HID984467456

Federal Facility:
Indian Land: U U

EPA Program Office Listing for Facility

FED SYSTEM	FEDERAL ID	UPDATE	CREATE	DUNS ID	SIC CODES
ACTIVE INDEX RECO		950106	921016		
RCRIS	HID984467456	950803	921016		

HAWAII
LEAKING UNDERGROUND STORAGE TANK REPORT

Map Point: 10

EDI #: 920072L

Facility: KONA TRANSPORTATION CO., INC.
74 5600 ALAPA ST.
KAILUA-KONA HI 96740
HAWAII County

Owner: KONA TRANSPORTATION CO., INC.
74 5039 A QUEEN KAAHUMANU ST.
KAILUA-KONA HI 96740

Date Of Document:
Facility ID:
Leak ID:

01/05/93
9-601617
920072

The Facility Index System (FINDS) is an inventory of information on facilities regulated/tracked by EPA programs.
Environmental Database, Inc.

LEAKING UNDERGROUND STORAGE TANKS: This state list tracks all known or reported leaks and releases from
underground storage tanks.
Environmental Database, Inc.

EDI JOB #: 12076
Report Date: 06/26/96

EDI JOB #: 12076
Report Date: 06/26/96

HAWAII
LEAKING UNDERGROUND STORAGE TANK REPORT

EDI #: 940044L

Map Point: 11

Facility: KAILUA FIRE STATION
PALANI ROAD KAILUA KONA
KAILUA-KONA HI 96740

Owner: COUNTRY OF HAWAII/FIRE DEPT
466 KINOOLE ST
HILO HI 96720

Date Of Document:
Facility ID:
Leak ID:

01/13/94
9-601086
940044

HAWAII
RCRA NOTIFIER FACILITY REPORT

Map Point: 12

EDI #: 257R

Facility: HAWAII MOTORS INC
76 5670 KUAKINI HWY
KAILUA KONA HI 96745
HAWAII County

Owner: NOT REQUIRED
Contact: ENVIRONMENTAL MANAGER (808)329-8970

EPA ID Number: HI0981634314
EPA Region: 09
Longitude:
Latitude:

RCRA Facility Designations

Generator Type: SMALL QUANTITY
Transporter Type: UNVERIFIED

LEAKING UNDERGROUND STORAGE TANKS: This state list tracks all known or reported leaks and releases from underground storage tanks.

Environmental Database, Inc.

EDI JOB #: 12076
Report Date: 06/26/96

The Resource Conservation and Recovery Inventory System (RCRIS) is the national system for tracking events and activities related to facilities which generate, transport, or treat, store, or dispose of hazardous waste.

Environmental Database, Inc.

EDI JOB #: 12076
Report Date: 06/26/96

HAWAII
FINDS FACILITY REPORT

Map Point: 12

EDI #: 475F

Facility: HAWAII MOTORS INC
75 5570 KUAKINI HWY
KAILUA KONA HI 96745
Region: 09
County: HAWAII
Facility Update Date: 930916
Facility Create Date: 921005

EPA #: HID981634314
Federal Facility: U
Indian Land: U

EPA Program Office Listing for Facility

FED SYSTEM	FEDERAL ID	UPDATE	CREATE	DUNS ID	SIC CODES
ACTIVE INDEX RECO		930916	921005		
RCRS	HID981634314	950803	921005	021754643	
D&B RECORD	021754643	950821	921005		5511

HAWAII
REGISTERED UNDERGROUND STORAGE TANKS

Map Point: 12

EDI #: 9601902U

Facility: HAWAII MOTORS INC
75-5070 KUAKINI HWY
KAILUA KONA HI 96745
HAWAII Island

Facility ID: 9-601902

Owner: HAWAII MOTORS INC
1177 KILAUEA AVE
PO BOX 395
HILO HI 96720

Tank ID: R-001
R-002
Tank Information:
01-05-1980 REMOVED FROM GROUND 02-28-1989 550 USED OIL
01-05-1980 REMOVED FROM GROUND 11-30-1989 1000 USED OIL

The Facility Index System (FINDSI) is an inventory of information on facilities regulated/tracked by EPA programs.
Environmental Database, Inc.
EDI JOB #: 12076
Report Date: 06/26/96

REGISTERED UNDERGROUND STORAGE TANKS: These are state records tracking known and permitted underground storage tanks. Some states also include above ground storage tanks.

Environmental Database Inc.

EDI JOB #: 12076
Report Date: 06/26/96

HAWAII
REGISTERED UNDERGROUND STORAGE TANKS

EDJ #: 9601012U Map Point: 13

Facility: KONA SHELL SERVICE
75-5573 KUAKINI HWY/PALANI RD
KAILUA KONA HI 96740
HAWAII Island

Facility ID: 9-601012

Owner: SHELL OIL CORPORATION
1441 KAPOLANI BLVD SUITE 1001
HONOLULU HI 96814

Tank ID Tank Information
1 04-19-1971 CURRENTLY IN USE 7500 GASOLINE
2 04-18-1988 CURRENTLY IN USE 4000 DIESEL
3 04-18-1988 CURRENTLY IN USE 6000 GASOLINE
4 04-18-1988 CURRENTLY IN USE 4000 GASOLINE
5 04-18-1988 CURRENTLY IN USE 7500 GASOLINE
6 04-18-1988 CURRENTLY IN USE 550 USED OIL

REGISTERED UNDERGROUND STORAGE TANKS: These are state records tracking known and permitted underground storage tanks. Some states also include above ground storage tanks.

Environmental Database Inc.
EDJ JOB #: 12076
Report Date: 05/25/96

HAWAII
RCRA NOTIFIER FACILITY REPORT

EDJ #: 482R Map Point: 14

Facility: WEST HAWAII TODAY
75 5629R KUAKINI HWY
KAILUA KONA HI 96740
HAWAII County

EPA ID Number: HI0982008658
EPA Region: 09
Longitude: .
Latitude: .

Owner: DONREY INC
Contact: ENVIRONMENTAL MANAGER (808)329-9311 (415)555-1212

Generator Type: SMALL QUANTITY
Transporter Type: UNVERIFIED
RCRA Facility Designations

The Resource Conservation and Recovery Inventory System (RCRIS) is the national system for tracking events and activities related to facilities which generate, transport, or treat, store, or dispose of hazardous waste.

Environmental Database, Inc.
EDJ JOB #: 12076
Report Date: 05/26/96

HAWAII
FINDS FACILITY REPORT

EDI #: 712F

Facility: WEST HAWAII TODAY
75-5628R KUAKINI HWY
Region: 09 KAILUA-KONA HI 96740
County: HAWAII

Facility Update Date: 950106
Facility Create Date: 900419

Map Point: 14

EPA #: HD982008658

Federal Facility: U
Indian Land: U

HAWAII
LEAKING UNDERGROUND STORAGE TANK REPORT

EDI #: 890028L

Facility: TEXACO FOOD MART
75-5676 KUAKINI HWY
KAILUA-KONA HI 96740
HAWAII County

Owner: HAWAII PETROLEUM DIST. INC.
599 KAWAIIANAOLE AVE
HILO HI 96720

Map Point: 15

Date Of Document: 01/05/93
Facility ID: 9-600486
Leak ID: 890028

EPA Program Office Listing for Facility

FED SYSTEM	FEDERAL ID	UPDATE	CREATE	DUNS ID	SIC CODES
ACTIVE INDEX RECO		950106	900419		
RCRIS	HD982008658	950803	900419		

The Facility Index System (FINDSI) is an inventory of information on facilities regulated/tracked by EPA programs.
Environmental Database, Inc.

EDI JOB #: 12076
Report Date: 06/26/96

LEAKING UNDERGROUND STORAGE TANKS: This state list tracks all known or reported leaks and releases from
underground storage tanks.

Environmental Database, Inc.

EDI JOB #: 12076
Report Date: 06/26/96

HAWAII
REGISTERED UNDERGROUND STORAGE TANKS

Map Point: 15

EDI #: 9600486U

Facility ID: 9-600486

Facility:
TEXACO FOOD MART
75-5675 KUAKINI HWY
KAILUA KONA HI 96740
HAWAII Island

Owner:
HAWAII PETROLEUM DIST INC
999 KALANIPAAOLE AVE
HILO HI 96720

Tank ID Tank Information
001 04-22-1986 CURRENTLY IN USE 4000 GASOLINE
002 04-22-1986 CURRENTLY IN USE 4000 GASOLINE
003 04-22-1986 CURRENTLY IN USE 4000 GASOLINE
004 04-22-1986 CURRENTLY IN USE 4000 GASOLINE
005 04-22-1986 CURRENTLY IN USE 4000 GASOLINE

HAWAII
LEAKING UNDERGROUND STORAGE TANK REPORT

Map Point: 16

EDI #: 920160L

Facility:
ALAMO RENT A CAR, INC.
KE-AHOLE AIRPORT
KAILUA-KONA HI 96745
HAWAII County

Owner:
ALAMO RENT A CAR, INC.
110 S.E. 6TH ST.
FT. LAUDERDALE FL 33301

Date Of Document: 01/05/93
Facility ID: 9-601715
Leak ID: 920160

REGISTERED UNDERGROUND STORAGE TANKS: These are state records tracking known and permitted underground storage tanks. Some states also include above ground storage tanks.

Environmental Database Inc.

EDI JOB #: 12076
Report Date: 06/26/96

LEAKING UNDERGROUND STORAGE TANKS: This state list tracks all known or reported leaks and releases from underground storage tanks.

Environmental Database, Inc.

EDI JOB #: 12076
Report Date: 06/26/96

HAWAII
LEAKING UNDERGROUND STORAGE TANK REPORT

EDI #: 930079L

Facility: KEAHOLE AIRPORT -BLDG 301
301/ELECTRICAL EQUIPMENT/GENERATOR R
KAILUA-KONA HI
Owner: KEAHOLE AIRPORT
KAILUA-KONA HI

Map Point: 17

Date Of Document: 01/13/94
Facility ID: 9402760
Leak ID: 930079

HAWAII
RCRA NOTIFIER FACILITY REPORT

EDI #: 825R4

Facility: UNOCAL 76 SS L4231
75 5766 HUALALAI RD
KAILUA KONA HI 96740
HAWAII County
Owner: UNOCAL 76
Contact: A FRITZ (808)522-7657

Map Point: 18

EPA ID Number: HD984468918
EPA Region: 09
Longitude: . . .
Latitude: . . .

RCRA Facility Designations

Generator Type: NOT A GENERATOR
Transporter Type: UNVERIFIED

LEAKING UNDERGROUND STORAGE TANKS: This state list tracks all known or reported leaks and releases from underground storage tanks.

Environmental Database, Inc.

EDI JOB #: 12076
Report Date: 06/26/96

The Resource Conservation and Recovery Inventory System (RCRIS) is the national system for tracking events and activities related to facilities which generate, transport, or treat, store, or dispose of hazardous waste.

Environmental Database, Inc.

EDI JOB #: 12076
Report Date: 06/26/96

HAWAII
FINDS FACILITY REPORT

Map Point: 18

EDI #: 1188F

Facility: UNOCAL 76 SS L 4231
76 5765 HUALAII RD
Region: OAHU KAILUA KONA HI 96740
County: HAWAII

Facility Update Date: 990106
Facility Create Date: 921005

EPA #: H10984468918

Federal Facility:
Indian Land: U U

EPA Program Office Listing for Facility

FED SYSTEM	FEDERAL ID	UPDATE	CREATE	DUNS ID	SIC CODES
ACTIVE INDEX RECO		950106	921005		
RCRIS	H10984468918	930924	921005		

HAWAII
EMERGENCY RESPONSE NOTIFICATION SYSTEM

Map Point: 19

EDI #: H11173

ID Number: 000380153
Case Number: 247157

Discharger:
Phone:

Spill Date:
Report Date: 07/01/1994

Spill Location: 755782 KUAKINI HWY
KILAUUA-KONA 96740
HAWAII County

Spill Description:
SUSPECTED UNKNOWN CRUISESHIP IN THE AREA GARBAGE IS FLOATING OUTSIDE
THE BEACH IN THE OCEAN

Action:
THE AMOUNT IS UNKNOWN

Medium Impacted:
SURFACE WATER

Waterway Affected by Release:
PACIFIC OCEAN

Threats

Material Spilled:
HOUSEHOLD MARPOL

Qty Spilled in Water:
00000000.00

Quantity Spilled:
00000000.00 UNK

The Facility Index System (FINDS) is an inventory of information on facilities regulated/tracked by EPA programs.

EDI JOB #: 12076
Report Date: 06/26/96

Environmental Database, Inc.

ERNIS tracks the initial notification of spills or releases of known or suspected oil and hazardous substances.

Environmental Database, Inc.

EDI JOB #: 12076
Report Date: 06/26/96

Appendix D
Air Quality Study

Appendix D
Air Quality Study

**AIR QUALITY STUDY
FOR THE PROPOSED
KUAKINI HIGHWAY WIDENING PROJECT**

KAILUA-KONA, HAWAII

Prepared for:
PARSONS BRINCKERHOFF

MAY 1997



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1.0 SUMMARY

The County of Hawaii Department of Public Works is proposing highway improvements in Kailua-Kona on the island of Hawaii. These improvements involve widening Kuakini Highway between Palani Road and Hualalai Road. The proposed improvements are needed to alleviate existing traffic congestion and to provide sufficient capacity to accommodate the projected increase in traffic volume to the year 2020.

This study examines the potential short- and long-term air quality impacts that could occur as a result of construction and use of the proposed highway facilities. Mitigative measures are suggested where possible and appropriate to lessen any impacts from the project.

At the present time, air quality standards have been established by both federal and state governments which limit ambient concentrations of particulate matter, sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone and lead. In addition, a state standard has been established for hydrogen sulfide. Hawaii state air quality standards are more stringent than the comparable national limits except for the standards for sulfur dioxide, particulate matter and lead, which are set at the same levels.

Regional and local climate together with the amount and type of human activity generally dictate the air quality of a given location. The climate of the Kailua-Kona area is very much affected by its leeward and coastal situation and by nearby mountains. Winds are predominantly light and variable. Temperatures in the area, as measured at the Old Kona Airport about one mile to the north of the project site, are very moderate

with average daily minimum and maximum temperatures ranging from 67°F to 83°F. Rainfall is relatively light with an average of 24 inches per year.

Except for periodic impacts from volcanic emissions and possibly occasional localized impacts from traffic congestion, the present air quality of the project area is believed to be relatively good. Although little air quality data are available for the area from the Department of Health, the data that do exist suggest that air pollution levels are well within state and federal air quality standards.

If the proposed project is given the necessary approvals to proceed, it is inevitable that some short- and long-term impacts on air quality will unavoidably occur either directly or indirectly as a consequence of project construction and use. Short-term impacts from fugitive dust will likely occur during the project construction phase. To a lesser extent, exhaust emissions from stationary and mobile construction equipment and from the disruption of traffic may also affect air quality during the period of construction. State air pollution control regulations require that there be no visible fugitive dust emissions at the project boundary. Hence, an effective dust control plan should be implemented to ensure compliance with state regulations. Fugitive dust emissions can be controlled to a large extent by watering of active work areas, using wind screens, keeping adjacent paved roads clean, and by covering of open-bodied trucks. Other dust control measures could include limiting the area that can be disturbed at any given time and/or mulching or chemically stabilizing inactive areas that have been worked. Paving and landscaping of project areas early in the construction schedule will also reduce dust emissions. Excess exhaust emissions from traffic disruption can be mitigated by moving construction

equipment and workers to and from the project site during off-peak traffic hours and by minimizing road closures during peak traffic periods.

To assess the potential long-term impact of emissions from vehicles operating on roadways within the project corridor, both mesoscale and microscale analyses were performed. The mesoscale analysis was designed to provide estimates of air pollution emissions from traffic for the entire highway corridor, while the microscale analyses assessed ambient air quality impacts near selected intersections within the project study area. Both mesoscale and microscale analyses considered an existing (1996) case and two future alternatives: the year 2020 without the project and the year 2020 with the project.

The mesoscale analysis indicated that in 1996 the emission burden for the section of Kuakini Highway included within the study area was 244 tons of carbon monoxide, 30 tons of hydrocarbons and 14 tons of nitrogen oxides. Without the project in the year 2020, the emission burden would increase to 531 tons of carbon monoxide, 54 tons of hydrocarbons and 19 tons of nitrogen oxides. With the project in the year 2020, the emission burden would amount to 382 tons of carbon monoxide, 38 tons of hydrocarbons and 17 tons of nitrogen oxides. Compared to the 2020 without project case, the with project alternative would reduce carbon monoxide emissions by about 28 percent, hydrocarbon emissions by about 30 percent, and nitrogen oxides emissions by about 12 percent.

The microscale analyses performed for this project involved the use of computerized emission and dispersion models to estimate current worst-case ambient concentrations of carbon monoxide during peak travel hours at several intersections along Kuakini

Highway in 1996 and to predict future levels in the year 2020 with and without the project. Worst-case carbon monoxide concentrations for 1996 in the project vicinity were estimated to be within national ambient air quality standards but were found to exceed the more stringent state standards at three of the four locations studied. However, because the state standards are set at such stringent levels, it is likely that they are currently exceeded at many locations in the state that have even moderate traffic volumes. In the year 2020 without the project, worst-case concentrations were predicted to decrease or increase only slightly in comparison to present levels except near the intersection of Kuakini Highway and Hualalai Road where a 50 percent increase was predicted during the morning peak hour. No exceedances of the national standards were predicted, but the state standards would potentially be exceeded at all four of the locations studied. Estimated worst-case concentrations in 2020 for the with-project alternative were either lower or only slightly higher than for the 2020 without project scenario, and they continued to comply with the national 1-hour and 8-hour ambient air quality standards but still did not meet the state limits at any of the four locations studied. Due to the prediction methodologies involved, all concentration estimates should be considered conservatively high.

Based on the results of the analyses of the potential long-term effects of the project, it may be concluded that the proposed highway widening will have a positive impact on the mesoscale air quality of the area. Any negative microscale impacts will be minimal. Although options are available to mitigate long-term traffic-related air quality impacts, requiring these be implemented is probably unwarranted in this case.

2.0 INTRODUCTION AND PROJECT DESCRIPTION

The County of Hawaii Department of Public Works is proposing highway improvements in Kailua-Kona on the island of Hawaii. These improvements involve widening Kuakini Highway within a study corridor between its intersections with Palani Road and Hualalai Road. The proposed improvements are needed to alleviate existing traffic congestion within the study area and to provide sufficient capacity to accommodate the projected increase in traffic volume to the year 2020.

Kuakini Highway is a minor arterial highway linking Queen Kaahumanu Highway (Hawaii Route 19) with the commercial area of Kailua-Kona. The study segment is a two-lane roadway aligned in the northwest-southeast direction and approximately one-half mile long. A project location map is provided as Figure 1.

The purpose of this study was to evaluate the potential air quality impacts of the proposed project and recommend mitigative measures, if possible and appropriate, to reduce or eliminate any project-related degradation of air quality in the area. Before examining the potential impacts of the project, a discussion of ambient air quality standards is presented and background information concerning the regional and local climatology and the present air quality of the project area is provided.

3.0 AMBIENT AIR QUALITY STANDARDS

Ambient concentrations of air pollution are regulated by both national and state ambient air quality standards (AAQS). National AAQS are specified in Section 40, Part 50 of the Code of Federal

Regulations (CFR). While State of Hawaii AAQS are defined in Chapter 11-59 of the Hawaii Administrative Rules. Table 1 summarizes both the national and the state AAQS that are specified in the cited documents. As indicated in the table, national AAQS have been established for six air pollutants. These nationally regulated air pollutants include: particulate matter, sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone and lead. The state has also set a standard for hydrogen sulfide. National AAQS are stated in terms of primary and secondary standards. National primary standards are designed to protect the public health with an "adequate margin of safety". National secondary standards, on the other hand, define levels of air quality necessary to protect the public welfare from "any known or anticipated adverse effects of a pollutant". Secondary public welfare impacts may include such effects as decreased visibility, diminished comfort levels, or other potential injury to the natural or man-made environment, e.g., soiling of materials, damage to vegetation or other economic damage. In contrast to the national AAQS, Hawaii State AAQS are given in terms of a single standard that is designed "to protect public health and welfare and to prevent the significant deterioration of air quality".

Each of the regulated air pollutants has the potential to create or exacerbate some form of adverse health effect or to produce environmental degradation when present in sufficiently high concentration for prolonged periods of time. The AAQS specify a maximum allowable concentration for a given air pollutant for one or more averaging times to prevent harmful effects. Averaging times vary from one hour to one year depending on the pollutant and type of exposure necessary to cause adverse effects. In the case of the short-term (i.e., 1- to 24-hour) AAQS, both national and state standards allow one exceedance per year.

State of Hawaii AAQS are in some cases considerably more stringent than comparable national AAQS. In particular, the State of Hawaii 1-hour AAQS for carbon monoxide is four times more stringent than the comparable national limit, and the state 1-hour limit for ozone is more than two times as stringent as the federal standard.

Hawaii AAQS for sulfur dioxide were relaxed in 1986 to make the state standards essentially the same as the national limits. In 1993, the state also revised its particulate standards to follow those set by the federal government. It has been proposed in various forums that the state also relax its carbon monoxide standards to the national levels, but at present there are no indications that such a change is being considered.

4.0 REGIONAL AND LOCAL CLIMATOLOGY

Regional and local climatology significantly affect the air quality of a given location. Wind, temperature, atmospheric turbulence, mixing height and rainfall all influence air quality. Although the climate of Hawaii is relatively moderate throughout most of the state, significant differences in these parameters may occur from one location to another. Most differences in regional and local climates within the state are caused by the mountainous topography.

Kailua-Kona, the site of the proposed project, is located near the midpoint of the western coast of the island of Hawaii. The topography of this island is dominated by the great volcanic masses of Mauna Loa (13,653 feet), Mauna Kea (13,796 feet), and of Hualalai, the Kohala Mountains and Kilauea. The island consists entirely of the slopes of these mountains and of the broad saddles

between them. Mauna Loa and Kilauea, located on the southern half of the island, are still active volcanoes.

Hawaii lies well within the belt of northeasterly trade winds generated by the semi-permanent Pacific high pressure cell to the north and east. Nearly the entire western coast of the island of Hawaii, however, is sheltered from the trade winds by high mountains, except when unusually strong trade winds sweep through the saddle between the Kohala Mountains and Mauna Kea and reach the areas to the lee. Due to wind shadow effects caused by the terrain, winds in the Kailua-Kona area are predominantly light and variable. Local winds such as land/sea breezes and/or upslope/downslope winds tend to dominate the wind pattern for the area. During the daytime, winds typically move onshore because of seabreeze and/or upslope effects. At night, winds generally are land breezes and/or drainage winds which move downslope and out to sea.

Air pollution emissions from motor vehicles, the formation of photochemical smog and smoke plume rise all depend in part on air temperature. Colder temperatures tend to result in higher emissions of contaminants from automobiles but lower concentrations of photochemical smog and ground-level concentrations of air pollution from elevated plumes. In Hawaii, the annual and daily variation of temperature depends to a large degree on elevation above sea level, distance inland and exposure to the trade winds. Average temperatures at locations near sea level generally are warmer than those at higher elevations. Areas exposed to the trade winds tend to have the least temperature variation, while inland and leeward areas often have the most. The project site's leeward location results in a larger temperature profile compared to windward locations at the same elevation. At the Old Kona Airport located about a mile to the north, average

daily minimum and maximum temperatures are 67°F and 83°F, respectively. The extreme minimum temperature on record at this location is 47°F, and the extreme maximum is 93°F. Temperatures at the project site are probably very comparable.

Small scale, random motions in the atmosphere (turbulence) cause air pollutants to be dispersed as a function of distance or time from the point of emission. Turbulence is caused by both mechanical and thermal forces in the atmosphere. It is often measured and described in terms of Pasquill-Gifford stability class. Stability class 1 is the most turbulent and class 6 the least. Thus, air pollution dissipates the best during stability class 1 conditions and the worst when stability class 6 prevails. In coastal areas such as Kailua-Kona, stability classes 5 or 6 occasionally occur, developing during clear, calm nighttime or early morning hours when temperature inversions form due to radiational cooling or to drainage flow from the mountainous interior of the island. Stability classes 1 through 4 occur during the daytime, depending mainly on the amount of cloud cover and incoming solar radiation and the onset and extent of the sea breeze.

Mixing height is defined as the height above the surface through which relatively vigorous vertical mixing occurs. Low mixing heights can result in high ground-level air pollution concentrations because contaminants emitted from or near the surface can become trapped within the mixing layer. In Hawaii, minimum mixing heights tend to be high because of mechanical mixing caused by the trade winds and because of the temperature moderating effect of the surrounding ocean. Low mixing heights may sometimes occur, however, at inland locations and even at times along coastal areas

early in the morning following a clear, cool, windless night. Coastal areas also may experience low mixing levels during sea breeze conditions when cooler ocean air rushes in over warmer land. Mixing heights in Hawaii typically are above 3000 feet (1000 meters).

Rainfall can have a beneficial effect on the air quality of an area in that it helps to suppress fugitive dust emissions, and it also may "washout" gaseous contaminants that are water soluble. Rainfall in Hawaii is highly variable depending on elevation and on location with respect to the trade wind. The Kailua-Kona area being a leeward location experiences a relatively dry climate. Some of the rainfall occurs in conjunction with winter storms, and some occurs during summer afternoons and evenings as a result of the onshore and upslope movement of moisture laden marine air. At the Old Kona Airport, average annual rainfall amounts to about 24 inches but may vary significantly from one year to the next. Average annual rainfall in the project area would be similar.

5.0 PRESENT AIR QUALITY

Present air quality in the project area is mostly affected by air pollutants from natural, industrial, agricultural and/or vehicular sources. Natural sources of air pollution emissions which may affect the project area but cannot be quantified very accurately include the ocean (sea spray), plants (aero-allergens), wind-blown dust, and volcanoes. Of these natural sources of air pollution, volcanoes are the most significant. Volcanic emissions periodically plague the project area. This is especially so since the latest eruption phase of the Kilauea Volcano began in 1983. Air pollution emissions from the Hawaiian volcanoes consist primarily of sulfur dioxide. After entering the atmosphere, these sulfur dioxide emissions are carried away by the wind and either washed

out as acid rain or gradually transformed into particulate sulfates. Although emissions from Kilauea are vented on the other side of a mountain barrier more than 50 miles east of the project site, the prevailing wind patterns eventually carry the emissions into the Kona area. These emissions can be seen in the form of the volcanic haze (vog) which persistently hangs over the area.

The major industrial source in the project vicinity is the Keahole Power Plant, operated by Hawaii Electric Light Company. Air pollution emissions from Keahole Power Plant consist mostly of sulfur dioxide and oxides of nitrogen.

Queen Kaahumanu Highway, running parallel to and about a quarter mile east of the project corridor, is the region's major arterial roadway. Some contamination from emissions exhausted by motor vehicles traversing Queen Kaahumanu Highway and other roadways nearby presently occurs, although elevated concentrations are likely confined to limited areas near intersections where and when traffic congestion occurs during poor dispersion conditions.

The State Department of Health operates a network of air quality monitoring stations at various locations around the state. Unfortunately, very little data are available for Hawaii Island, and even less are available for the Kona area specifically. As indicated in Table 2, the only existing monitoring data in the vicinity of the project site consist of sulfur dioxide and particulate measurements that were made about 10 miles to the south at Kealahou during 1985 and 1986. However, because there are few large sources in the area and because emissions have not changed significantly in the last several years, these data are probably reasonably representative of existing conditions in the project area.

movement and soil excavation; and (2) exhaust emissions from on-site construction equipment. Indirectly, there also could be short-term impacts from slow-moving construction equipment traveling to and from the project site and from the disruption of traffic due to road construction.

Fugitive dust emissions may arise from the grading and dirt-moving activities associated with land clearing and preparation work. The emission rate for fugitive dust emissions from construction activities is difficult to estimate accurately because of its elusive nature of emission and because the potential for its generation varies greatly depending upon the type of soil at the construction site, the amount and type of dirt-disturbing activity taking place, the moisture content of exposed soil in work areas, and the wind speed. The EPA [1] has provided a rough estimate for uncontrolled fugitive dust emissions from construction activity of 1.2 tons per acre per month under conditions of "medium" activity, moderate soil silt content (30%), and precipitation/evaporation (P/E) index of 50. Uncontrolled fugitive dust emissions in the project area would likely be somewhere near this level or possibly lower due to the rocky nature of the soil in the area. In any case, State of Hawaii Air Pollution Control Regulations [2] prohibit visible emissions of fugitive dust from construction activities at the project boundary, and thus an effective dust control plan for the project construction phase is essential.

Adequate fugitive dust control can usually be accomplished by the establishment of a frequent watering program to keep bare-dirt surfaces in construction areas from becoming significant sources of dust. In dust-prone or dust-sensitive areas, other control measures such as limiting the area that can be disturbed at any given time, applying chemical soil stabilizers, mulching and/or using wind screens may be necessary. Control regulations further

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During the two-year period, measurements of 24-hour average sulfur dioxide concentration at this location were consistently low with daily mean values ranging from less than 5 $\mu\text{g}/\text{m}^3$ up to 12 $\mu\text{g}/\text{m}^3$. No exceedances of the state/national 24-hour AAQS for sulfur dioxide were recorded. The twenty-four hour average particulate concentrations ranged from 4 to 28 $\mu\text{g}/\text{m}^3$; no violations of the state AAQS were measured during the 1985-86 monitoring period.

At this time, there are no reported measurements of lead, ozone, nitrogen dioxide or carbon monoxide in the project vicinity. These are primarily motor vehicle related air pollutants. Lead, ozone and nitrogen dioxide typically are regional scale problems; concentrations of these contaminants generally have not been found to exceed AAQS elsewhere in the state. Carbon monoxide air pollution, on the other hand, typically is a microscale problem caused by congested motor vehicular traffic. In traffic congested areas such as urban Honolulu, carbon monoxide concentrations have been found to occasionally exceed the state AAQS. Present concentrations of carbon monoxide in the project area are estimated later in this study based on mathematical modeling of motor vehicle emissions.

6.0 SHORT-TERM IMPACTS OF PROJECT

Short-term direct and indirect impacts on air quality could potentially occur during project construction. For a project of this nature, there are two potential types of air pollution emissions that could directly result in short-term air quality impacts during construction: (1) fugitive dust from vehicle

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estimated to have amounted to 244 tons while nitrogen oxides emissions were calculated at 14 tons. Without the project in the year 2020, estimated hydrocarbon and carbon monoxide emissions increased by about 80 percent and 118 percent, respectively, while nitrogen oxides emission estimates increased by about 36 percent. The "build" alternative would bring about significant reductions in all three types of emissions compared to 2020 without the proposed highway widening.

7.2 Microscale Analyses

In most traffic-related air quality assessments, roadway intersections are one of the primary concerns because of traffic congestion and because of the increase in vehicular emissions associated with traffic queuing. To investigate potential air quality impacts near roadway intersections within the project area, microscale analyses were performed for selected locations using computerized emission and atmospheric dispersion models to estimate worst-case ambient carbon monoxide concentrations. Carbon monoxide was selected for the microscale analyses because it is both the most stable and the most abundant of the pollutants generated by motor vehicles. Furthermore, carbon monoxide air pollution is generally considered to be a microscale problem that can be addressed locally to some extent, whereas other air pollutants most often are regional issues that cannot be addressed by a single highway improvement.

The selected locations for microscale analyses included four representative intersections along the project corridor. These included: Kuakini Highway with Palani Road, Kuakini Highway with Henry Street, Kuakini Highway with Kalani Street and Kuakini Highway with Hualalai Road.

The main objective of the microscale analyses was to estimate worst-case 1-hour average carbon monoxide concentrations for each of the three scenarios studied. To evaluate the significance of the estimated concentrations, a comparison of the predicted values for each scenario can be made. A comparison of the estimated values to the national and state AAQS will provide another measure of significance.

Traffic estimates for the project indicate that traffic volumes generally are or will be higher during the afternoon peak hour than during the morning peak period. However, worst-case emission and meteorological dispersion conditions typically occur during the morning hours at most locations. Thus, both morning and afternoon peak-traffic hours were examined to ensure that worst-case concentrations were identified.

As for the mesoscale emission burden analysis, the EPA computer model MOBILE5A was used to calculate vehicular emissions for each year/scenario studied in the microscale analyses. Vehicle mix and cold/hot-start fractions, inputs to MOBILE5A, were assumed to be the same as those used for the emission burden estimates. For the microscale modeling analyses, ambient temperatures of 59 and 68 degrees Fahrenheit were used for morning and afternoon peak-hour emission computations, respectively. These are conservative assumptions since morning/afternoon ambient temperatures will generally be warmer than this and emission estimates given by MOBILE5A are inversely proportional to the ambient temperature.

After computing vehicular carbon monoxide emissions through the use of MOBILE5A, these data were then input to an atmospheric dispersion model. EPA air quality modeling guidelines [5]

currently recommend that the computer model CAL3QHC [6] be used to assess carbon monoxide concentrations at roadway intersections, or in areas where its use has previously been established, CALINE4 [7]. CALINE4 has been used extensively in Hawaii to assess air quality impacts at roadway intersections. Each of these two computer models offers advantages and disadvantages. CAL3QHC has the capability to make vehicle queuing estimates, but it does not simulate modal emissions. CALINE4 has the capability to simulate modal emissions, but it does not have the capacity to make queuing estimates.

Since the use of CALINE4 has previously been established in Hawaii, CALINE4 was used to perform the analyses for the subject project. However, all vehicle queuing estimates involving signalized intersections were made based on the queuing algorithms included in the CAL3QHC model. This approach takes advantage of the best features of both models.

CALINE4 was developed by the California Transportation Department to simulate vehicular movement and atmospheric dispersion of vehicular emissions. This model is designed to predict 1-hour average pollutant concentrations along roadways based on input traffic and emission data, roadway/receptor geometry and meteorological conditions.

Input peak-hour traffic data were obtained from the project traffic consultants. Vehicle speeds for the existing case were determined from observation of current posted speed limits. Vehicle speed limits for the future scenarios were assumed to remain the same. Deceleration and acceleration times were calculated from these speeds.

Model roadways were set up to reflect roadway geometry, physical dimensions and operating characteristics. Presently, either paved or unpaved pedestrian walkways exist very close to most of the roadways within the study corridor. Concentrations predicted by air quality models generally are not considered valid within the roadway mixing zone. The roadway mixing zone is usually taken to include 3 meters on either side of the traveled portion of the roadway and the turbulent area within 10 meters of a cross street. Model receptor sites were thus located at the edges of the mixing zones near all intersections that were studied. All receptor heights were placed at 1.8 meters above ground to simulate levels within the normal human breathing zone.

Input meteorological conditions for this study were defined to provide "worst-case" results. One of the key meteorological inputs is atmospheric stability category. For these analyses, atmospheric stability category 5 was assumed for morning scenarios and stability category 4 was assumed for afternoon cases. These are the most conservative stability categories that are generally used for estimating pollutant dispersion at suburban locations for these time periods. For all cases, a surface roughness length of 100 cm was assumed and a mixing height of 300 meters was used. Worst-case wind conditions were defined as a wind speed of 1 meter per second with a wind direction resulting in the highest predicted concentration.

Existing background concentrations of carbon monoxide in the project vicinity are believed to be at relatively low levels. Hence, background contributions of carbon monoxide from sources or distant roadways not directly considered in the analysis were accounted for by adding a small background concentration of 0.5 ppm to all predicted concentrations for 1996. Although at least

moderate development and increased traffic are expected to occur within the project area within the next few years, background carbon monoxide concentrations may not change significantly since individual emissions from motor vehicles are forecast to decrease with time. Hence, a background value of 0.5 ppm was assumed to persist for the 2020 scenarios.

Predicted Worst-Case 1-Hour Concentrations

Table 8 summarizes the final results of the microscale modeling study in the form of the estimated worst-case 1-hour morning and afternoon ambient carbon monoxide concentrations for 1996 and for each of the two 2020 alternatives. The locations of these estimated worst-case 1-hour concentrations all occurred at or very near the indicated intersections.

As indicated in the table, the highest estimated 1-hour concentration within the project vicinity for the present (1996) case was 18.2 mg/m³. This was projected to occur during the afternoon peak traffic hour near the intersection of Kuakini Highway and Palani Road. The majority of this concentration is attributable to the queuing of westbound traffic on Palani Road. The next highest value, 14.4 mg/m³, was estimated to occur during the afternoon peak traffic hour near the intersection of Kuakini Highway and Hualalai Road. Much of this concentration is due to emissions from southbound traffic queuing on Kuakini Highway. Concentrations at other locations and times studied ranged between about 8 and 13 mg/m³. All predicted worst-case 1-hour concentrations for the 1996 scenario were within the national AAQS, but concentrations at three of the four intersections studied exceeded the more stringent state standard.

In the year 2020 without the proposed project, a worst-case 1-hour concentration of 15.8 mg/m³ was predicted to occur during the afternoon peak-traffic hour near the intersection of Kuakini Highway and Palani Road. Queuing of southbound traffic on Kuakini Highway was the major contributor. This is approximately a 16 percent decrease compared to the 1996 concentration at this time and location and is accounted for primarily by traffic signal optimization and the retirement of higher pollution vehicles as described earlier in this report. A concentration of 15.4 mg/m³ was estimated for the morning at Kuakini Highway and Hualalai Road and was attributable again to southbound traffic queuing on Kuakini Highway; this represented a substantial increase compared to the 1996 case. Peak-hour morning and afternoon worst-case values at the other locations studied for the 2020 without project scenario ranged between about 9 and 13 mg/m³. Predicted worst-case 1-hour concentrations for this scenario exceeded the state AAQS at all of the four locations studied, but remained within the national standard.

Predicted 1-hour worst-case concentrations for the 2020 with project scenario ranged from 9.8 mg/m³ during the morning at the Kuakini Highway/Henry Street intersection to 14.8 mg/m³ during the afternoon at the Kuakini Highway/Palani Road intersection. Compared to both the 2020 without project case and the 1996 scenario, predicted worst-case concentrations for 2020 with the project were lower at the locations of highest predicted concentrations. All of the locations studied were predicted to meet the national AAQS but not the more stringent state standard.

Predicted Worst-Case 8-Hour Concentrations

Worst-case 8-hour carbon monoxide concentrations were estimated by multiplying the worst-case 1-hour values by a persistence factor

of 0.5. This accounts for two factors: (1) traffic volumes averaged over eight hours are lower than peak 1-hour values, and (2) meteorological conditions are more variable (and hence more favorable for dispersion) over an 8-hour period than they are for a single hour. Based on monitoring data, 1-hour to 8-hour persistence factors for most locations generally vary from 0.4 to 0.8 with 0.6 being the most typical. One recent study based on modeling [8] concluded that 1-hour to 8-hour persistence factors could typically be expected to range from about 0.4 to 0.5. EPA guidelines [9] recommend using a value of 0.6 to 0.7 unless a locally derived persistence factor is available. Recent monitoring data for Honolulu reported by the Department of Health [10] suggest that this factor may range between about 0.35 and 0.55 depending on location and traffic variability. Considering the location of the project and the traffic pattern for the area, a 1-hour to 8-hour persistence factor of 0.5 will likely yield reasonable estimates of worst-case 8-hour concentrations. However, it should be noted that the 8-hour concentration estimates are generally less reliable than the 1-hour values due to the prediction methodology involved.

The resulting estimated worst-case 8-hour concentrations are indicated in Table 9. For the 1996 scenario, the estimated worst-case 8-hour carbon monoxide concentrations for the four locations studied ranged from 5.0 to 9.5 mg/m³. Three out of four of these estimated values exceed the state standard of 5 mg/m³, but all are within the national limit of 10 mg/m³. For the year 2020 without project scenario, three of the four locations produced slightly higher estimated values compared to 1996 except for the Kuakini Highway/Palani Road intersection which decreased to 7.9 mg/m³. All of the estimates exceeded the state 8-hour standard but were within the national limit. For the 2020 with project scenario, all predicted 8-hour concentrations were within the national AAQS but exceeded the more stringent state AAQS once again. The two

intersections which exhibited the highest predicted concentrations, Kuakini Highway/Palani Road and Kuakini Highway/Hualalai Road, decreased from 7.9 mg/m³ to 7.4 mg/m³ and from 7.7 mg/m³ to 7.2 mg/m³, respectively, compared to the without project case.

Conservativeness of Estimates

The results of this study reflect several assumptions that were made concerning both traffic movement and worst-case meteorological conditions. One such assumption concerning worst-case meteorological conditions is that a wind speed of 1 meter per second with a steady direction for 1 hour will occur. A steady wind of 1 meter per second blowing from a single direction for an hour is extremely unlikely and may occur only once a year or less. With wind speeds of 2 meters per second, for example, computed carbon monoxide concentrations would be only about half the values given above. The 8-hour estimates are also conservative in that it is unlikely that anyone would occupy the assumed receptor sites (within 3 m of the roadways) for a period of 8 hours.

9.0 CONCLUSIONS AND RECOMMENDATIONS

Existing Conditions

Although very little ambient air quality data are available to characterize existing conditions, it is likely that state and federal ambient air quality standards are currently being met in the project area, except perhaps for occasional exceedances of the state carbon monoxide standards within small areas near traffic-congested locations.

Short-Term Impacts and Mitigation

The major potential short-term impact of the project on air quality will occur from the emission of fugitive dust during construction. Uncontrolled fugitive dust emissions from construction activities are estimated to amount to about 1.2 tons per acre per month, depending on rainfall and other factors. To control dust, active work areas and any temporary unpaved work roads should be watered at least twice daily on days without rainfall. Use of wind screens and/or limiting the area that is disturbed at any given time will also help to contain fugitive dust emissions. Wind erosion of inactive areas of the project that have been disturbed could be controlled by mulching or chemical stabilization. Dirt-hauling trucks should be covered when traveling on roadways to prevent windage. A routine road cleaning and/or tire washing program will also help to reduce fugitive dust emissions that may occur as a result of trucks tracking dirt onto paved roadways in the project area. Establishment of landscaping early in the construction schedule will also help to control dust.

During construction phases, emissions from engine exhausts (primarily consisting of carbon monoxide and nitrogen oxides) will also occur both from on-site construction equipment and from the disruption of normal traffic flow. Increased vehicular emissions due to the disruption of traffic can be alleviated by minimizing road closures during peak traffic hours.

Long-Term Mesoscale Impacts

Without the project by the year 2020, mesoscale analysis indicates that emissions from motor vehicles using Kuakini Highway between Pa'ani and Hualalai Roads would increase substantially compared to 1996 emissions due to the increase in traffic volumes and traffic

congestion, even with the elimination of older more-polluting vehicles from the roadways by this time. Carbon monoxide emissions would increase by about 118 percent to 531 tons per year, while hydrocarbons, at 54 tons per year, and nitrogen oxides, at 19 tons per year, would mean increases of about 80 percent and 36 percent, respectively. With the proposed widening project completed, all three types of emissions within the project area in the year 2020 would be reduced substantially compared to the without project case. Carbon monoxide emissions, for example, were estimated to amount to 382 tons per year with the widening, approximately one half the increase over 1996 without the project.

Long-Term Microscale Impacts

Without the project, microscale analyses of four representative intersections along the project corridor for the year 2020 indicate that the national air quality standards for carbon monoxide would be met but that the state standards would likely be exceeded. This is based on the projected peak-hour traffic volumes and roadway configurations and laneages and worst-case meteorological conditions. For the 2020 with-project scenario, worst-case carbon monoxide concentrations should remain substantially unchanged compared to the concentrations for both the 2020 without project case and the 1996 scenario. The predicted concentrations indicate that with the project the national 1-hour and 8-hour AAQS should be met by a comfortable margin in the year 2020. However, similar to the without project case, the state 1-hour and 8-hour AAQS could be exceeded during worst-case conditions. Due to the low levels at which the state carbon monoxide standards are set, it may not be possible to achieve continuous compliance with the state standards, at least within small hot-spot areas near high-volume intersections included in the project corridor.

Long-Term Mitigation

From a mesoscale viewpoint, the highway widening as proposed would provide substantial mitigation of long-term air quality impacts compared to the without project case. Options available to further mitigate long-term, traffic-related air pollution are generally to further improve roadways, to reduce traffic or to reduce individual vehicular emissions. Aside from providing added roadway improvements, air pollution impacts from vehicular emissions could conceivably be additionally mitigated by reducing traffic volumes through the promotion of bus service and car pooling and/or by adjusting local school and business hours to begin and end during off-peak times. This mitigation measure is generally considered only partially successful. Reduction of emissions from individual vehicles would have to be achieved through the promulgation of local, state or federal air pollution control regulations. For example, Hawaii currently does not require annual inspections of motor vehicle air pollution control equipment. However, at the present time there is no indication that the state is contemplating adopting such rules.

Another potential mitigation measure might be to provide added buffer zones between walkways and roadways, although technically, the public would have to somehow be excluded from the buffer zones. The predicted worst-case concentrations in this report are based on a separation distance of 3 m (10 ft) between walkways and roadways. Doubling this distance to about 6 m (20 ft) would reduce maximum concentrations by about 10 to 15 percent.

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10. Hawaii Air Quality Data for the Period of January 1988 to December 1990, State of Hawaii Department of Health.

Table 1
SUMMARY OF STATE OF HAWAII AND NATIONAL
AMBIENT AIR QUALITY STANDARDS

Pollutant	Units	Averaging Time	Maximum Allowable Concentration		
			National Primary	National Secondary	State of Hawaii
Particulate Matter ^a	µg/m ³	Annual	50	50	50
		24 Hours	150 ^b	150 ^b	150 ^b
Sulfur Dioxide	µg/m ³	Annual	80	-	80
		24 Hours	365 ^b	-	365 ^b
		3 Hours	-	1300 ^b	1300 ^b
Nitrogen Dioxide	µg/m ³	Annual	100	100	70
Carbon Monoxide	mg/m ³	8 Hours	10 ^b	-	5 ^b
		1 Hour	40 ^b	-	10 ^b
Ozone	µg/m ³	1 Hour	235 ^b	235 ^b	100 ^b
Lead	µg/m ³	Calendar Quarter	1.5	1.5	1.5
Hydrogen Sulfide	µg/m ³	1 Hour	-	-	35 ^b

^a Particles less than or equal to 10 microns aerodynamic diameter

^b Not to be exceeded more than once per year

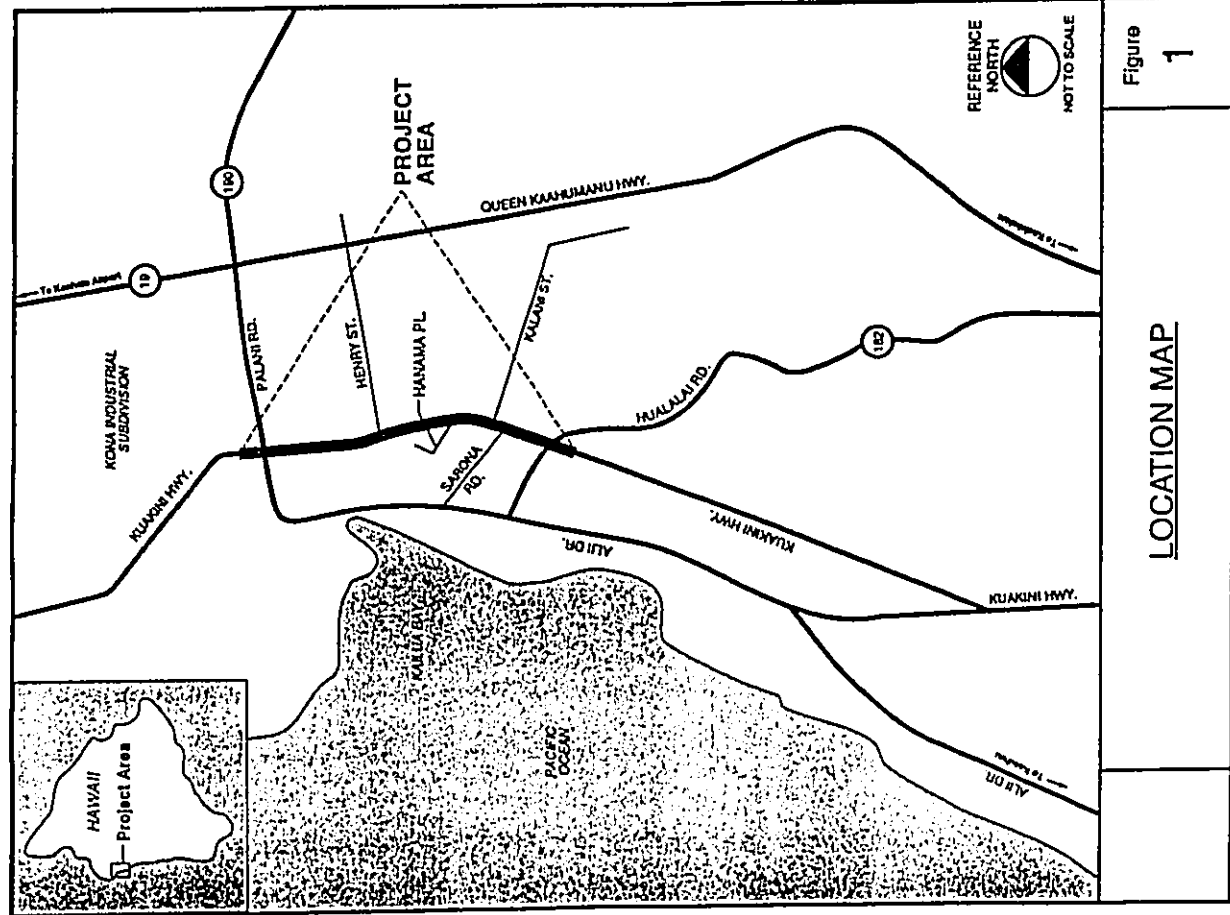


Table 2
 ANNUAL SUMMARY OF AIR QUALITY MEASUREMENTS FOR
 MONITORING STATIONS NEAREST KUKINI HIGHWAY WIDENING PROJECT

Parameter / Location	1985	1986
Sulfur Dioxide / Kealakua, Kona		
Period of Sampling (months)	7	8
No. of 24-Hr Samples	31	40
Range of 24-Hr Values (µg/m ³)	<5-8	<5-12
Average Daily Value (µg/m ³)	<5	<5
No. of State AQOS Exceedances	0	0
Particulate / Kealakua, Kona		
Period of Sampling (months)	7	8
No. of 24-Hr Samples	34	40
Range of 24-Hr Values (µg/m ³)	6-22	4-28
Average Daily Value (µg/m ³)	12	16
No. of State AQOS Exceedances	0	0

Source: State of Hawaii Department of Health, "Hawaii Air
 Quality Data for the Period of January 1985 to
 December 1987"

Table 3
 AVERAGE DAILY TRAFFIC VOLUMES AND VEHICLE MILES TRAVELED
 WITHIN KUKINI HIGHWAY WIDENING PROJECT CORRIDOR

Kukini Hwy: Palani Rd to Hualalai Rd	Segment Length (miles)	1986		2020 Without Project		2020 With Project	
		ADT	VMT	ADT	VMT	ADT	VMT
Southbound	0.5	20,080	10,040	32,800	16,400	32,800	16,400
Northbound	0.5	18,870	9,435	28,400	14,200	28,400	14,200
Total		38,950	19,475	61,200	30,600	61,200	30,600

Notes: ADT = average daily traffic volume
 VMT = vehicle miles traveled

Table 4
 ESTIMATED AVERAGE TRAVEL SPEEDS
 WITHIN KUAKINI HIGHWAY PROJECT CORRIDOR

Kuakini Hwy: Palani Rd to Hualalai Rd	Average Travel Speed (mph)		
	1996	2020 Without Project	2020 With Project
Southbound	19	10	17
Northbound	16	9	16

Table 5
 ESTIMATED TRAVEL SPEEDS ON KUAKINI HIGHWAY
 WITHIN PROJECT CORRIDOR DURING PEAK TRAFFIC PERIODS
 (miles per hour)

Kuakini Highway	1996			2020 Without Project			2020 With Project		
	AM	MID	PM	AM	MID	PM	AM	MID	PM
Southbound	23.3	17.7	15.8	13.3	9.3	8.0	19.8	15.3	15.5
Northbound	19.1	12.7	16.4	12.8	6.8	6.0	19.0	15.3	13.0

Sources: Existing Conditions Report On Kuakini Highway
 Improvements, Parsons Brinckerhoff, July 1996.

Personal communication from Keith Niiya, Parsons
 Brinckerhoff, to Barry D. Neal, B.D. Neal &
 Associates, October 29, 1996.

Table 6

EMISSION FACTORS FOR
KUAKINI HIGHWAY WIDENING PROJECT
(GRAMS PER VEHICLE MILE)

Speed (mph)	1996			2020		
	Hydro- carbons	Carbon Monoxide	Nitrogen Oxides	Hydro- carbons	Carbon Monoxide	Nitrogen Oxides
9	-	-	-	4.49	44.73	1.51
10	-	-	-	4.18	41.72	1.49
16	4.09	33.11	1.82	3.08	31.52	1.40
17	-	-	-	2.97	30.52	1.39
19	3.48	29.27	1.79	-	-	-

Table 7

HYDROCARBONS, CARBON MONOXIDE AND NITROGEN OXIDES EMISSIONS
FOR KUAKINI HIGHWAY WIDENING PROJECT
(TONS PER YEAR)

Kuakini Hwy: Palani Rd to Hualalai Rd	1996			2020 Without Project			2020 With Project		
	HC	CO	NOX	HC	CO	NOX	HC	CO	NOX
Southbound	14	118	7	28	275	10	20	202	9
Northbound	16	126	7	26	256	9	18	180	8
Total	30	244	14	54	531	19	38	382	17

Table 8

ESTIMATED WORST-CASE 1-HOUR CARBON MONOXIDE CONCENTRATIONS
NEAR INTERSECTIONS INCLUDED WITHIN
KUAKINI HIGHWAY WIDENING PROJECT
(milligrams per cubic meter)

Roadway Intersection	Year/Scenario					
	1996/Present		2020/Without Project		2020/With Project	
	AM	PM	AM	PM	AM	PM
Kuakini Highway at Palani Road	13.0	18.9	12.7	15.8	14.1	14.6
Kuakini Highway at Henry Street	9.9	8.5	10.2	9.0	9.8	10.9
Kuakini Highway at Kalani Street	9.2	10.1	10.0	10.8	8.3	11.0
Kuakini Highway at Hualalai Road	10.8	14.4	15.4	12.9	13.2	14.3

Hawaii State AAQS: 10
National AAQS: 40

Table 9

ESTIMATED WORST CASE 8-HOUR CARBON MONOXIDE CONCENTRATIONS
NEAR INTERSECTIONS INCLUDED WITHIN
KUAKINI HIGHWAY WIDENING PROJECT
(milligrams per cubic meter)

Roadway Intersection	Year/Scenario		
	1996/Present	2020/Without Project	2020/With Project
Kuakini Highway at Palani Road	9.5	7.9	7.4
Kuakini Highway at Henry Street	5.0	5.1	5.5
Kuakini Highway at Kalani Street	5.1	5.4	5.5
Kuakini Highway at Hualalai Road	7.2	7.7	7.2

Hawaii State AAQS: 5
National AAQS: 10

Appendix E
Accoustical Study

Appendix E
Accoustical Study

ACOUSTIC STUDY
FOR THE
KUAKINI HIGHWAY IMPROVEMENTS BETWEEN
PALANI AND HUALALAI ROADS
KONA, HAWAII

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CHAPTER I. SUMMARY

The existing and future traffic noise levels along the corridor of the proposed Kuakini Highway Improvement Project from Palani Road to Hualalai Road in North Kona on the island of Hawaii were studied to evaluate potential noise impacts associated with the No Build and Build Alternatives. Noise measurements were obtained, traffic noise predictions developed, and noise abatement alternatives evaluated.

Existing traffic noise levels along Kuakini Highway between Palani and Hualalai Roads do not exceed the U.S. Federal Highway Administration (FHWA) or Hawaii State Department of Transportation, Highways Division (HDOT) noise abatement criteria. Future (CY 2020) traffic noise levels with or without the proposed highway improvement project are also not expected to exceed FHWA or HDOT noise abatement criteria. Therefore, traffic noise mitigation measures should not be required for this highway improvement project.

Potential short term construction noise impacts are possible during the project construction period. However, minimization of these types of noise impacts are possible using standard curfew periods, properly muffled equipment, administrative controls, and construction barriers as required.

CHAPTER II. GENERAL STUDY METHODOLOGY

Noise Measurements. Existing traffic and background ambient noise levels at four locations along the project corridor were measured in July 1996. The traffic noise measurements were used to calibrate the traffic noise model which was used to calculate the Base Year (CY 1996) and future year (CY 2020) traffic noise levels under the No Build and Build alternatives. The background ambient noise measurements were used to define existing noise levels at noise sensitive receptors which may be affected by the project. Also, the measurements were used in conjunction with forecasted traffic noise levels to determine if future traffic noise levels are predicted to "substantially exceed" existing background ambient noise levels at these noise sensitive receptors, and therefore exceed FHWA and HDOT noise standards and criteria.

The noise measurement locations ("A" thru "D") are shown in FIGURE 1. The results of the traffic noise measurements are summarized in TABLE 1 and FIGURES 2 thru 4. In the table and figures, Leq represents the average (or equivalent), A-Weighted, Sound Level, and Lmin and Lmax represent the minimum and maximum recorded sound levels, respectively. L10 and L50 represent the sound levels which were exceeded 10 and 50 percent of the time, respectively. A list and description of the acoustical terminology used is contained in APPENDIX B.

Traffic Noise Predictions. The Federal Highway Administration (FHWA) Traffic Noise Prediction Model (Reference 1) was used as the primary method of calculating Base Year and future traffic noise levels, with model parameters adjusted to reflect terrain, ground cover, and local shielding conditions. At the four traffic noise measurement locations along the project corridor (Locations "A" thru "D", the measured noise levels were compared with model predictions to insure that measured and calculated noise levels for the existing conditions were consistent and in general agreement. As indicated in TABLE 1, spot counts of traffic volumes were also obtained during the measurement periods and were used to generate the Equivalent Sound Level (Leq) predictions shown in the table. The agreement between measured and predicted traffic noise levels was considered good, and sufficiently accurate to formulate the Base Year and future year traffic noise levels.

Base Year traffic noise levels were then calculated along Kuakini Highway using Base Year (1996) traffic volume data for the AM, Mid-Day, and PM peak hours from Reference 2. Traffic mix by vehicle types and average vehicle speeds for the various sections of the existing and future roadway conditions were derived from observations during the noise monitoring periods and from References 2 and 3. Determination of the periods of highest hourly traffic volumes along Kuakini Highway were made after a review of the Base and Future Year AM, Mid-Day, and PM traffic volumes from Reference 2 (see APPENDIX C). The Equivalent (or Average) Hourly Sound Level [Leq(h)] noise descriptor was used to calculate the Base Year and all future year traffic noise levels as required by Reference 4. Aerial photomaps and project plans (where

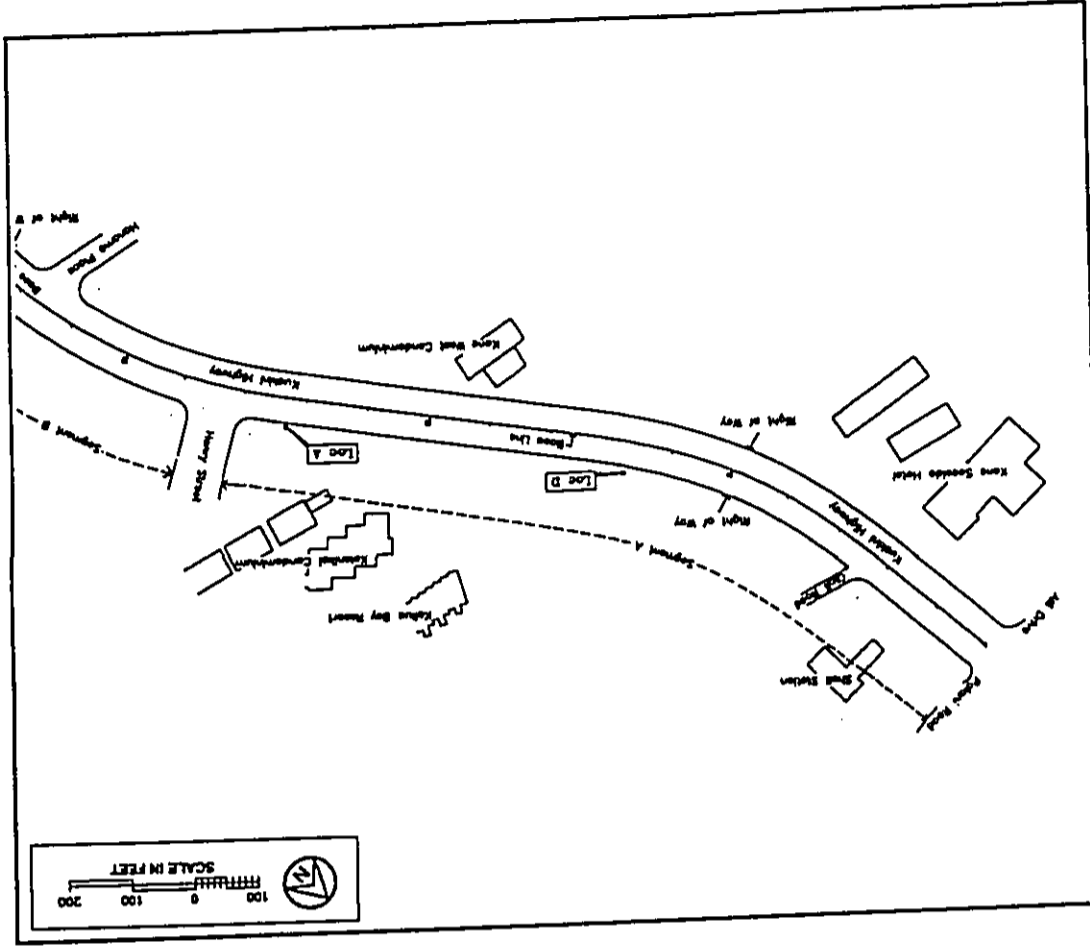


FIGURE 1
(CON'T)

LOCATIONS OF NOISE MEASUREMENT SITES
AND NOISE SENSITIVE BUILDINGS FRONTING
KUAKINI HIGHWAY

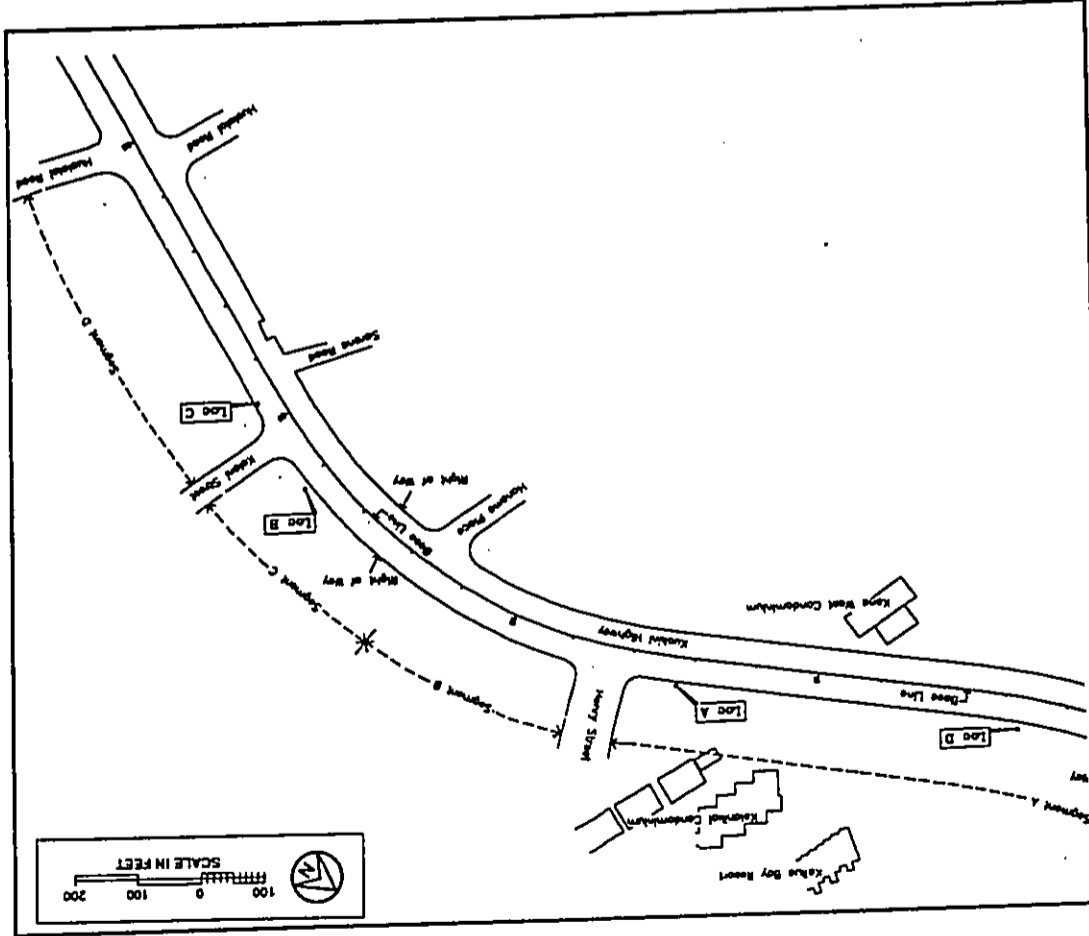


FIGURE
1

LOCATIONS OF NOISE MEASUREMENT SITES
AND NOISE SENSITIVE BUILDINGS FRONTING
KUAKINI HIGHWAY

TABLE 1 (CONTINUED)
TRAFFIC NOISE MEASUREMENT RESULTS

LOCATION	Time of Day (HRS)	Ave. Speed (MPH)	--Hourly Traffic Volume--			Measured Leq (dB)	Predicted Leq (dB)
			AUTO	M.TRUCK	H.TRUCK		
C. 35 FT from the base- line of Kuakini Hwy. (7/22/96)	1600 TO 1700	23	1,287	12	10	64.0	64.7
C. 35 FT from the base- line of Kuakini Hwy. (7/23/96)	1215 TO 1315	23	938	3	9	63.7	63.5
D. 49 FT from the base- line of Kuakini Hwy. (7/23/96)	0945 TO 1045	25	788	15	9	63.8	63.2
D. 49 FT from the base- line of Kuakini Hwy. (7/23/96)	1100 TO 1200	25	928	8	10	64.9	63.4

TABLE 1
TRAFFIC NOISE MEASUREMENT RESULTS

LOCATION	Time of Day (HRS)	Ave. Speed (MPH)	--Hourly Traffic Volume--			Measured Leq (dB)	Predicted Leq (dB)
			AUTO	M.TRUCK	H.TRUCK		
A. 46 FT from the base- line of Kuakini Hwy. (7/22/96)	1000 TO 1100	25	1,165	11	3	63.5	63.0
A. 46 FT from the base- line of Kuakini Hwy. (7/22/96)	1100 TO 1200	25	1,113	3	5	62.0	63.0
B. 49 FT from the base- line of Kuakini Hwy. (7/22/96)	1230 TO 1330	24	1,261	8	9	62.7	64.0
B. 49 FT from the base- line of Kuakini Hwy. (7/22/96)	1330 TO 1430	24	1,368	9	4	62.5	63.3
C. 35 FT from the base- line of Kuakini Hwy. (7/22/96)	1500 TO 1600	23	1,079	6	3	61.2	60.6

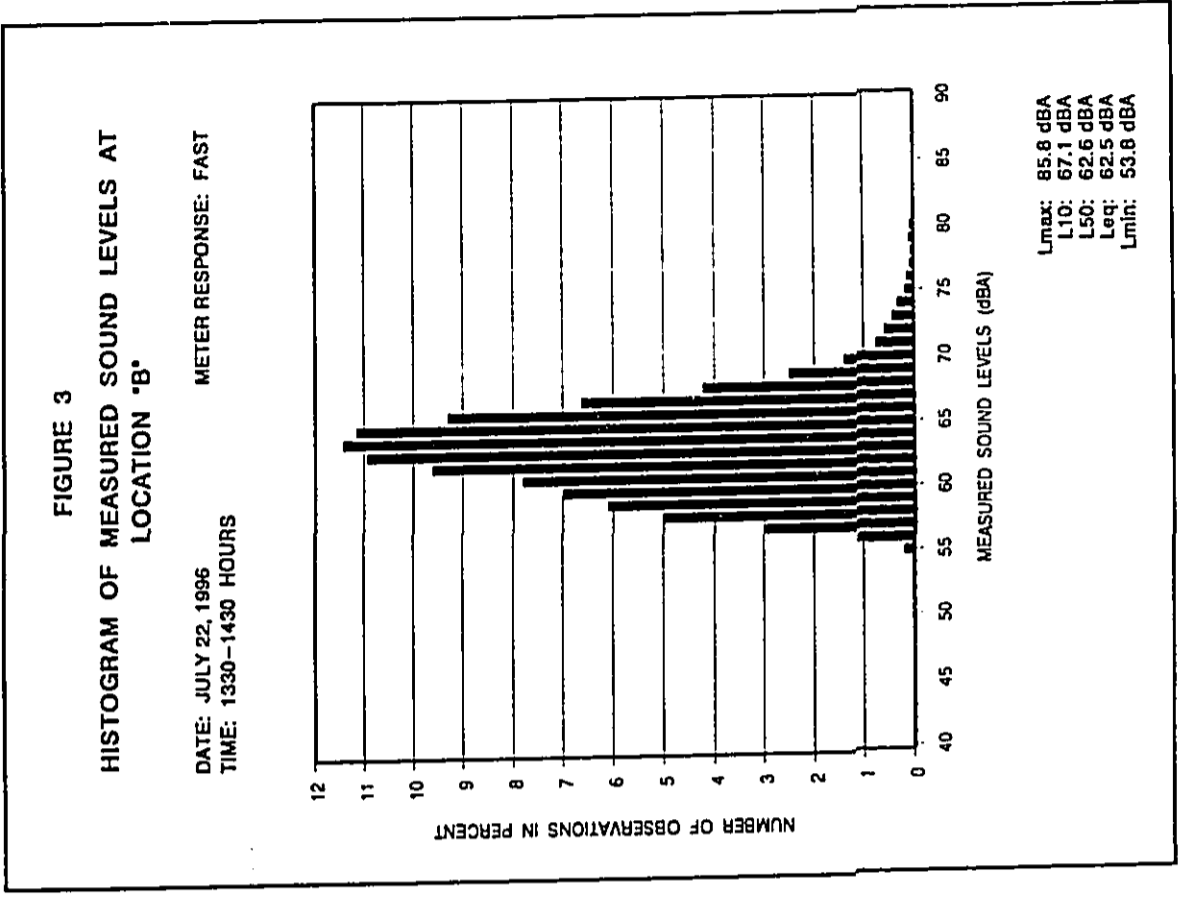
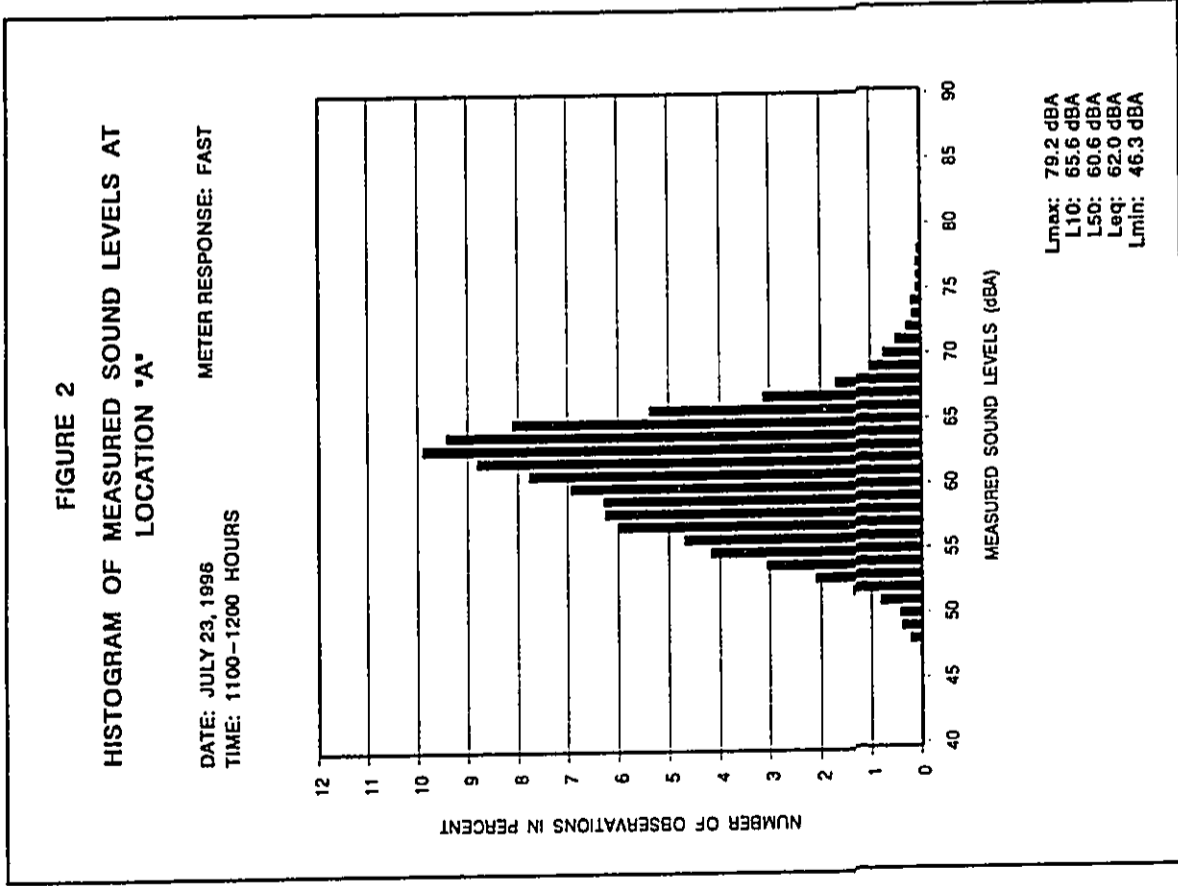
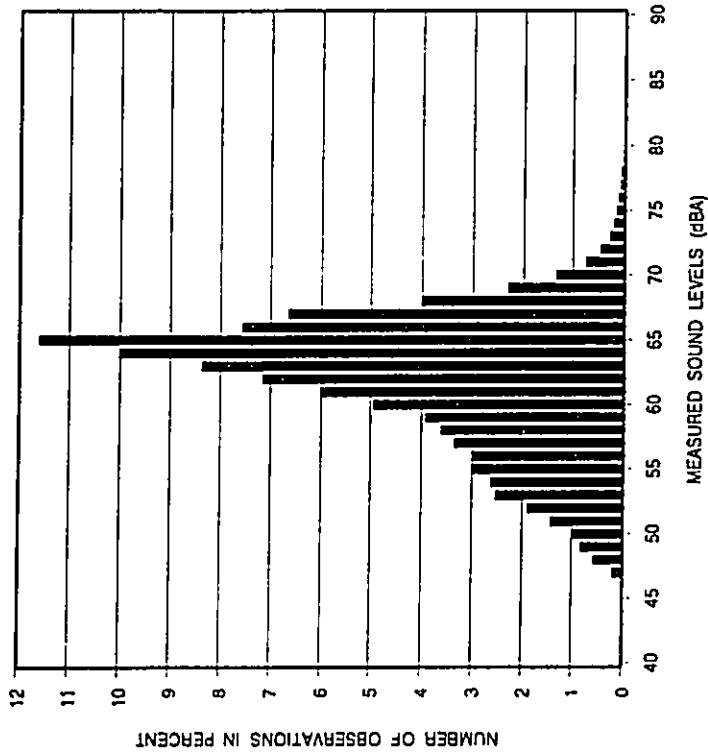


FIGURE 4
HISTOGRAM OF MEASURED SOUND LEVELS AT
LOCATION "D"

DATE: JULY 22, 1996
 TIME: 0945-1045 HOURS
 METER RESPONSE: FAST



Lmax: 78.5 dBA
 L10: 66.6 dBA
 L50: 62.1 dBA
 Leq: 63.8 dBA
 Lmin: 45.7 dBA

available) of the area were used to determine terrain, ground cover, and local shielding effects from building structures, which were entered into the noise prediction model.

Future year (2020) traffic noise levels were then developed for the No Build and Build (roadway improvement) Alternatives using the future traffic assignments and average vehicle speeds of Reference 2, the topographic and existing development features described previously, and the highway alignments and profiles of the Build Alternative.

The CY 2020 traffic assignments for the No Build and Build Alternatives reflected the forecasted traffic volumes along the existing and improved sections of Kuakini Highway during the AM, Mid-Day, and PM peak hours. Future traffic conditions under the No Build Alternative are expected to worsen, with average vehicle speeds declining as a result of increased congestion. Under the Build Alternative, average vehicle speeds are expected to remain the same as, or increase slightly above, current values.

Impact Assessments and Mitigation. Following the calculation of the future traffic noise levels for the No Build and Build Alternatives, comparisons of the future traffic noise levels and impacts between the alternatives were made. Comparisons of predicted future traffic noise levels with FHWA and HDOT noise abatement criteria (see TABLE 2) were made to determine specific locations where noise abatement measures would be necessary. In addition, the HDOT's criteria of "greater than 15 dB increase above existing background noise levels" was also used as a noise abatement threshold for this project (from Reference 5). At the areas along the highway which are currently in open space or vacant, the locations of the 57, 66, and 67 Leq(h) traffic noise contours, without the benefit of shielding from natural terrain or man-made sound barriers, were provided for siting future noise sensitive land uses along the Kuakini Highway Improvement Corridor, and for defining the adequate buffer space between the roadway sections and these land uses. The FHWA 67 Leq(h) standard shown in TABLE 2 and the HDOT "greater than 15 dB increase" criteria were applied to all noise sensitive buildings along the existing sections of Kuakini Highway. In addition, the possibility of exceeding the 66 Leq(h) level was also examined for this study, since the HDOT is planning to replace the FHWA 67 Leq(h) criteria with their 66 Leq(h) criteria (Reference 5). Noise mitigation measures were not required for this project, so it was not necessary to determine if the barriers would be effective in mitigating adverse noise impacts.

TABLE 2
FHWA NOISE ABATEMENT CRITERIA
[Hourly A-Weighted Sound Level - Decibels (dBA)]

<u>ACTIVITY CATEGORY</u>	<u>LEQ (h)*</u>	<u>DESCRIPTION OF ACTIVITY CATEGORY</u>
A	57 (Exterior)	Lands on 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 areas are to continue to serve their intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, activity sports areas, parks, residences, motels, hotels, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	-----	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

* The Hawaii State Department of Transportation, Highways Division, utilizes Leq criteria levels which are 1 Leq unit less than the FHWA values shown.

CHAPTER III. EXISTING ACOUSTICAL ENVIRONMENT

For the purposes of this study, 1996 was used as the Base Year for computing changes in traffic noise levels between the No Build and Build Alternatives. The Base Year noise environment along Kuakini Highway was described by computing the Hourly Equivalent Sound Levels [Leq(h)] along the existing roadway for the 1996 time period. These sound levels, expressed in decibels, represent the average level of traffic noise for a given hour of the day. Due to variations in existing traffic conditions along Kuakini Highway, evaluations of both the AM, Mid-Day, and PM peak hours were necessary to determine the hour with the highest traffic noise levels along individual sections of Kuakini Highway.

TABLE 3A presents the traffic volume, speed, and mix assumptions used to calculate the Base Year noise levels along the various segments of the existing roadway. TABLE 3B identifies the roadway segment numbers and labels used throughout this report. Shown in TABLE 3A are the calculated peak hour Leq(h)'s at a reference distance of 100 FT from the baselines (or midway points between the Highway Rights-of-Way) of the various roadway segments. The calculated distances to the various noise contour lines (57, 66, and 67 Leq) under unobstructed, line-of-sight conditions are shown in TABLE 4. The actual distances to the contour lines will generally be less than indicated in TABLE 4 when intervening structures or walls exist between the highway and a receptor. This reduction (or shrinkage) of the traffic noise contour distances from the highway baseline are the result of noise shielding (or attenuation) effects caused by the intervening structures or walls.

By using the traffic assumptions of TABLE 3A, and drawings of the existing improvements on both sides of Kuakini Highway, the relationship of the existing free-field traffic noise contours to noise sensitive properties along the existing roadway were obtained. The list of noise sensitive and commercial properties where the exterior FHWA noise abatement criteria of 67 Leq and/or the proposed HDOT 66 Leq criteria may be exceeded along Kuakini Highway during the Base Year are provided in TABLE 5 for the peak traffic hours. From TABLE 5, it was concluded that no existing noise sensitive structure currently experiences traffic noise levels greater than the FHWA 67 Leq or the proposed HDOT 66 Leq threshold during the peak traffic hours.

At areas removed from Kuakini Highway, Base Year noise levels are much lower than along the highway Right-of-Way due to distance factors and local shielding effects from buildings. Base Year noise levels in areas removed from Kuakini Highway are typically less than 60 Leq(h), and possibly as low as 57 Leq(h). In these areas removed from the highway, local or distant roadway traffic, birds, dogs, or wind and foliage tend to be the dominant noise sources. Existing noise levels at these more distant areas are typically less than both the FHWA exterior noise abatement criteria of 67 Leq(h) and the proposed HDOT criteria of 66 Leq(h).

stipulate that open-bodied trucks be covered at all times when in motion if they are transporting materials that could be blown away. Haul trucks tracking dirt onto paved streets from unpaved areas is oftentimes a significant source of dust in construction areas. Some means to alleviate this problem, such as road cleaning or tire washing, may be appropriate. Paving and/or establishment of landscaping as early in the construction schedule as possible can also lower the potential for fugitive dust emissions.

On-site mobile and stationary construction equipment also will emit air pollutants from engine exhausts. The largest of this equipment is usually diesel-powered. Nitrogen oxides emissions from diesel engines can be relatively high compared to gasoline-powered equipment, but the standard for nitrogen dioxide is set on an annual basis and is not likely to be violated by short-term construction equipment emissions. Carbon monoxide emissions from diesel engines, on the other hand, are low and should be relatively insignificant compared to vehicular emissions on nearby roadways.

Indirectly, slow-moving construction vehicles on roadways leading to and from the project site could obstruct the normal flow of traffic to such an extent that overall vehicular emissions are increased, but this impact can be mitigated by moving heavy construction equipment during periods of low traffic volume. Likewise, road closures during peak traffic periods should be avoided to the extent possible to minimize air pollution impacts from traffic disruption. Thus, with careful planning and attention to dust control, most potential short-term air quality impacts from project construction can be mitigated.

7.0 LONG-TERM IMPACTS OF PROJECT

After construction is completed, the proposed widening along Kuakini Highway should result in a more efficient flow of motor vehicle traffic on roadways in the project vicinity and, in general, bring about favorable long-term impacts on ambient air quality in the immediate area. To evaluate the potential long-term, ambient air quality impact of the proposed project, both mesoscale and microscale analyses were performed for each of three scenarios. The three scenarios studied included: year 1996 with present conditions, year 2020 without the project (the no-build alternative), and year 2020 with the project. The following two subsections of this report describe in detail the study methodologies and the results of these analyses.

7.1 Mesoscale Analysis

To evaluate the potential mesoscale impact of the proposed project, an "emission burden" analysis was prepared. The emission burden analysis was designed to quantify project-related emissions of carbon monoxide, nitrogen oxides and hydrocarbons occurring within the study area for the existing case and for the future with and without project scenarios.

The mesoscale emission burden estimates were made by first estimating both southbound and northbound average daily traffic (ADT) volumes along the study portion of Kuakini Highway from daily traffic figures provided by the project traffic consultants. The resulting estimates are presented in Table 3 along with the estimated vehicle miles traveled (VMT), obtained by multiplying the 0.5 mile length of the Kuakini Highway study segment by the ADT. In 1996, the VMT per day were estimated to total

approximately 19,475 within the Kuakini Highway study segment. In 2020, it was estimated that the VMT would increase to about 30,600 with or without the project. The average travel speeds (ATS) shown in Table 4 are based on the average of the estimated morning, mid-day and afternoon peak-hour travel speeds which were also provided by the project traffic engineers and are presented in Table 5. Actual average daily travel speeds are probably somewhat higher.

Emission estimates were then prepared for each scenario based on the estimated VMT's, ATS's and U.S. EPA emission factors obtained using the computer model MOBILE5A [3]. MOBILE5A is the most recently released version of the EPA mobile emission model. Aside from vehicle speed, several other key inputs are required by the model. One of these is vehicle mix. Based on recent vehicle registration figures, the present and projected vehicle mix in the project area is estimated to be 91.9% light-duty gasoline-powered vehicles, 5% light-duty gasoline-powered trucks and vans, 0.5% heavy-duty gasoline-powered vehicles, 0.6% light-duty diesel-powered vehicles, 1% heavy-duty diesel-powered trucks and buses, and 1% motorcycles.

Other key inputs to the MOBILE5A emission model are the cold- and hot-start fractions. Motor vehicles operating in a cold- or hot-start mode emit excess air pollution. Typically, motor vehicles reach stabilized operating temperatures after about 4 miles of driving. For traffic operating within the project area, it was assumed that about 21 percent of all vehicles would be operating in the cold-start mode and that about 27 percent would be operating in the hot-start mode. These are typical default (national average) values. Average annual ambient temperature, also a MOBILE5A input, was assumed to be 75 degrees F. This is

based on several years of temperature data for the Old Kona Airport [4].

The resulting emission factors generated by MOBILE5A and used in the mesoscale analyses are presented in Table 6. These are given in terms of grams of hydrocarbons, carbon monoxide and nitrogen oxides emitted per vehicle mile. As suggested by the information presented in the table, hydrocarbon and carbon monoxide emission factors are inversely proportional to vehicle speed. This is also true of nitrogen oxides emission factors when speeds are under approximately 20 mph. However, at speeds above that level they begin to rise slightly as speeds increase. All average travel speeds in the Kuakini project corridor were under 20 mph. It should also be noted that at a given vehicle speed emission factors are generally lower for future years due to the effects of older, more-polluting vehicles being retired.

Based on the calculated emission factors and the current and projected vehicle miles traveled for the Kuakini Highway study segment, annual emissions of hydrocarbons, carbon monoxide and nitrogen oxides were estimated for each of the three scenarios. The final results of this analysis are given in Table 7. It should be mentioned that the emission estimates given in the table may be somewhat overstated since they are based on the averages of the peak-hour average travel speeds and not actual daily average traffic speeds which may be somewhat higher. However, since the same procedures were used for all three scenarios, the validity of comparisons is maintained.

During 1996, it was estimated that hydrocarbon emissions from traffic traveling on Kuakini Highway between Falani and Hualalai Roads amounted to 30 tons. Carbon monoxide emissions were

TABLE 3A

COMPARISONS OF EXISTING (CY 1996) AND FUTURE (CY 2020)
TRAFFIC NOISE LEVELS ALONG KUAKINI HIGHWAY
(PEAK HOUR AND 100 FT FROM ROADWAY BASELINE)

LOCATION	SPEED (MPH)	**** HOURLY LEQ IN dB ****			
		VPH	AUTO	MT	HT ALL VEH
EXISTING (CY 1996) PEAK HR. TRAFFIC:					
Kuakini Highway, Segment (a), Mid-Day	25	1,408	59.1	51.4	58.6
Kuakini Highway, Segment (b), Mid-Day	25	1,729	60.0	52.3	59.5
Kuakini Highway, Segment (c), PM	24	1,773	59.4	51.8	59.2
Kuakini Highway, Segment (d), PM	23	1,489	58.0	50.4	57.9

FUTURE CONDITIONS (CY 2020) PEAK HR. TRAFFIC:

Kuakini Highway, Segment (a), PM	24	1,990	59.9	52.3	59.7
Kuakini Highway, Segment (b), AM	26	1,703	60.6	52.8	59.8
Kuakini Highway, Segment (c), PM	26	2,470	62.2	54.4	61.5
Kuakini Highway, Segment (d), Mid-Day	23	2,228	59.7	52.2	59.7

Note:

The following assumed traffic mix of autos, medium trucks, and heavy vehicles were used for existing and future conditions along Kuakini Highway: 98.0% autos, 1.0% medium trucks, and 1.0% heavy trucks and buses.

TABLE 3B

IDENTIFICATION OF KUAKINI HIGHWAY
ROADWAY SEGMENTS

SEGMENTS	BOUNDING INTERSECTIONS
(a)	Palani Road to Henry Street
(b)	Henry Street to Hanama Place
(c)	Hanama Place to Kalani Street
(d)	Kalani Street to Hualalai Road

TABLE 5

SUMMARY OF EXISTING AND FUTURE TRAFFIC NOISE LEVELS AT COMMERCIAL ESTABLISHMENTS AND NOISE SENSITIVE STRUCTURES

LOCATION	*** EXISTING (CY 1996) *** SETBACK DIST. FROM B.L. (FT)		*** FUTURE (CY 2020) *** SETBACK DIST. FROM B.L. (FT)		Leq (dBA) PEAK HR.
	Leq (dBA) PEAK HR.	Leq (dBA) PEAK HR.	Leq (dBA) PEAK HR.	Leq (dBA) PEAK HR.	
1. Kona Seaside Hotel	105	62.0	105	63.2	
2. Bougainville Plaza	52	65.1	52	66.7	
3. Kona Ranch House Restaurant	45	65.7	45	66.8	
4. Kona Plastic Surgery (Radio Sta./Travel Agn.)	45	65.7	45	66.8	
5. Kona West Condos	56	64.8	56	66.0	
6. Kailua Bay Resort	243	58.4	243	59.3	
7. Kalanikai Condominium	164	60.1	164	61.0	
8. Central Pacific Bank (Kuakini Towers)	66	64.5	66	66.7	
9. Bank of America	56	65.2	56	67.6	
10. First Federal Savings	66	63.1	66	64.8	
11. A'ama Surf & Sport (Retail)	46	64.7	46	66.6	
12. Territorial Savings Bank	61	63.5	61	65.2	
13. Bank of Hawaii	49	64.4	49	66.5	

TABLE 4

EXISTING AND CY 2020 DISTANCES TO 57, 66, AND 67 LEQ CONTOURS (PEAK HOUR TRAFFIC)

STREET SECTION	57 Leq SETBACK (FT)		66 Leq SETBACK (FT)		67 Leq SETBACK (FT)	
	EXISTING	CY 2020	EXISTING	CY 2020	EXISTING	CY 2020
Kuakini Highway, Segment (a)	334	415	46	59	38	49
Kuakini Highway, Segment (b)	410	458	55	62	45	51
Kuakini Highway, Segment (c)	369	664	49	80	40	65
Kuakini Highway, Segment (d)	271	406	37	54	31	45

Notes:

- (1) All setback distances are from the roadway's baseline.
- (2) See TABLE 3A for traffic volume, speed, and mix assumptions.
- (3) Setback distances are for unobstructed line-of-sight conditions.
- (4) Hard ground conditions assumed along all roadway segments.
- (5) See TABLE 3B for identification of roadway segments.

CHAPTER IV. DESCRIPTION OF FUTURE TRAFFIC NOISE LEVELS

The future traffic noise levels along Kuakini Highway within the project limits during CY 2020 were evaluated for the No Build and Build study alternatives. The same methodology that was used to calculate the Base Year noise levels was also used to calculate the Year 2020 noise levels for the two study alternatives.

The future (CY 2020) traffic volume, speed, and mix assumptions used for the Build Alternative are shown in TABLE 3A. Also shown in the table are the future traffic noise levels at a reference distance of 100 FT from the highway baseline and the predicted changes in traffic noise levels along the Kuakini Highway project corridor between CY 1996 and CY 2020 for the Build Alternative. TABLE 4 presents comparisons of the corresponding changes in the setback distances to the 57 thru 67 Leq(h) noise contours for the various highway segments under the Build Alternative. TABLE 6 presents the expected changes in future traffic noise levels along the highway under the No Build and Build Alternatives. It should be noted that forecasted traffic volumes for both the No Build and Build Alternatives are the same, and the differences in traffic noise levels between the two alternatives result from differences in average vehicle speeds. Lower average speeds under the No Build Alternative are expected to result in lower average noise levels during the peak hours (see APPENDIX C). Under the Build Alternative, average vehicle speeds are expected to be higher, with resulting higher average noise levels.

The future traffic noise levels were also calculated at noise sensitive and commercial structures along the section of Kuakini Highway proposed to be improved using preliminary highway plans and profiles and the project's 1:500 scale aerial photomaps. The locations of existing noise sensitive structures along Kuakini Highway are identified in FIGURE 1 and are also listed in TABLE 5 with other commercial buildings which front the highway. At these locations, exceedances of the FHWA 67 Leq and the proposed HDOT 66 Leq criteria were examined. From TABLE 5, the HDOT's >15 dB increase* criteria for substantial change in traffic noise levels will not be exceeded at any noise sensitive structure.

The following general conclusions can be made in respect to the number of impacted structures and lands which can be expected by CY 2020 under both the No Build and Build Alternatives. These conclusions are valid as long as the future vehicle mixes and average speeds do not differ from the assumed values.

A. From TABLE 3A, future average traffic noise levels along Kuakini Highway are expected to increase from 0.5 to 2.5 Leq between CY 1996 and CY 2020 if the highway is improved as proposed. If the highway is not improved and traffic volumes increase as forecasted by CY 2020, future average traffic noise levels are expected to decline by 2 to 4 Leq as a result of lower average vehicle speeds resulting from increased traffic congestion (see TABLE 6). Therefore, the net increase in traffic noise

TABLE 6

CALCULATIONS OF FUTURE (CY 2020) INCREASES IN TRAFFIC NOISE LEVELS (PEAK HOUR TRAFFIC)

STREET SECTION	NOISE LEVEL INCREASE (Leq) DUE TO:	
	AMBIENT TRAFFIC (NO-BUILD)	PROJECT TRAFFIC (BUILD)
Kuakini Highway, Segment (a)	-3.3	4.2
Kuakini Highway, Segment (b)	-3.0	3.5
Kuakini Highway, Segment (c)	-1.6	4.1
Kuakini Highway, Segment (d)	-3.6	5.3

attributable to the project between CY 1996 and CY 2020 is in the order of 3.5 to 5.3 Leq as shown in TABLE 6.

B. Future noise levels at the Kona West Condominium near the north end of the project corridor are expected to equal the HDOT 66 Leq noise abatement criteria by CY 2020. Because the living units of the condominium do not have 180 degree fields of view to the highway, the HDOT 66 Leq criteria is not predicted to be exceeded at these condominium units.

C. Future noise levels at the commercial properties along the highway are not expected to exceed the FHWA 72 Leq noise abatement criteria, and should not require noise mitigation measures.

CHAPTER V. POSSIBLE NOISE MITIGATION MEASURES

Possible noise mitigation measures considered included the following:

A. Restricting the Growth In the Number of Noisy Buses, Heavy Trucks, Motorcycles, and Automobiles with Defective Mufflers. The percentage contribution to the total traffic noise by heavy trucks, buses, and noisy vehicles is currently in the order of 50 percent, and elimination of these noise sources would reduce total traffic noise levels by approximately 3 dB. Restricting the growth rate of these vehicles (to growth rates below passenger automobile growth rates) could produce noise reductions in the order of 1 or 2 dB, which are not considered significant for the level of regulatory efforts required.

B. Alteration of the Horizontal Or Vertical Alignment of the Highway. Major alteration of the horizontal or vertical alignment of the existing highway was not considered appropriate due to the scope of this highway improvement project and due to the Right-of-Way constraints imposed by existing developments on both sides of the project corridor. The Kona West Condominium is the only noise sensitive property where the proposed HDOT noise abatement criteria is predicted to be approached in CY 2020. In order to reduce forecasted CY 2020 traffic noise levels to Base Year levels at this noise sensitive structure, lateral displacement of the highway baseline by approximately 22 FT toward the east will be required. Realignment and displacement of the highway baseline away from the Kona West Condominium by these distances would not be possible without adverse operational impacts on the Texaco Station across the highway. Vertical realignment of the existing highway upward would result in adverse visual impacts, and vertical realignment of the highway via a cut would not be possible without obtaining additional Right-of-Way. For these reasons, realignment of the existing highway was not considered to be an attractive noise mitigation measure.

C. Acquisition of Property Rights for Construction of Noise Barriers, and/or Construction of Noise Barriers Along the Right-of-Way. For single story, noise sensitive buildings, construction of a sound attenuating wall is normally the preferred noise mitigation measure. The 6 to 7 dB of noise attenuation achievable with a 6 FT high wall is normally sufficient for single story structures. Because the Kona West Condominium building is a multistory structure, construction of a sound attenuating barrier will not provide noise reduction benefits at the second through fourth floor levels. For these reasons, and the predictions that CY 2020 noise levels will not exceed the HDOT 66 Leq or the FHWA 67 Leq criteria, construction of sound attenuating barriers is not recommended as a noise mitigation measure.

D. Acquisition of Real Property Interests To Serve As A Noise Buffer Zone. Where tall (or multistory) structures are expected to be impacted by future traffic noise, the use of sound attenuating barriers (see para. C above) will not be practical due to the ex-

cessive heights required to shield the upper levels from traffic noise. In these situations, the only other noise mitigation possibilities are sound insulation of the affected upper level units or acquisition of the property interests. Noise buffer zones extending between 51 to 84 FT from the highway baseline and at substantial cost would be required to meet the HDOT 66 Leq criteria. In general, the acquisition of property for the creation of noise buffer zones or noise mitigation has seldom been applied in Hawaii. Where existing multistory or other tall structures are within the high noise zones, the application of sound insulation treatment should be evaluated prior to consideration of property acquisition for noise mitigation.

E. Noise Insulation of Public Use or Nonprofit Institutional Structures. Public use or nonprofit institutional structures should not be impacted by this project. For this reason, noise insulation of public use or nonprofit institutional structures should not be required.

CHAPTER VI. FUTURE TRAFFIC NOISE IMPACTS AND RECOMMENDED NOISE MITIGATION MEASURES

Future traffic noise levels are not predicted to exceed HDOT or FHWA noise abatement criteria by CY 2020 with or without the project. For this reason, noise mitigation measures should not be required along the project corridor.

On the currently undeveloped or open lots alongside the highway, it is anticipated that potential noise impacts at new noise sensitive receptors located along the highway may be mitigated through the inclusion of sound walls or other noise mitigation measures within the individual lot development plans. In addition, the future noise sensitive land uses which may be planned alongside the highway represent areas of potential adverse noise impacts if adequate noise mitigation measures are not incorporated into the planning of these future projects. It is anticipated that the portions of the Kuakini Highway improvements may be completed prior to the development of the open or vacant lots adjacent to the highway, and that noise abatement measures such as adequate setbacks, sound attenuating walls or berms, or closure and air conditioning will be incorporated into these new developments along Kuakini Highway as required. The predictions of highway noise levels vs. distance from the baseline of Kuakini Highway segments (TABLE 4) may be used to assist the developers in providing the necessary setbacks to the highway.

CHAPTER VII. CONSTRUCTION NOISE IMPACTS

Short-term noise impacts associated with construction activities along the existing highway may occur. These impacts can occur as a result of the short distances (less than 100 FT) between existing noise sensitive receptors and the anticipated construction corridor which cross through residential, resort, and commercial areas. The total duration of the construction period for the proposed project is not known, but noise exposure from construction activities at any one receptor location is not expected to be continuous during the total construction period.

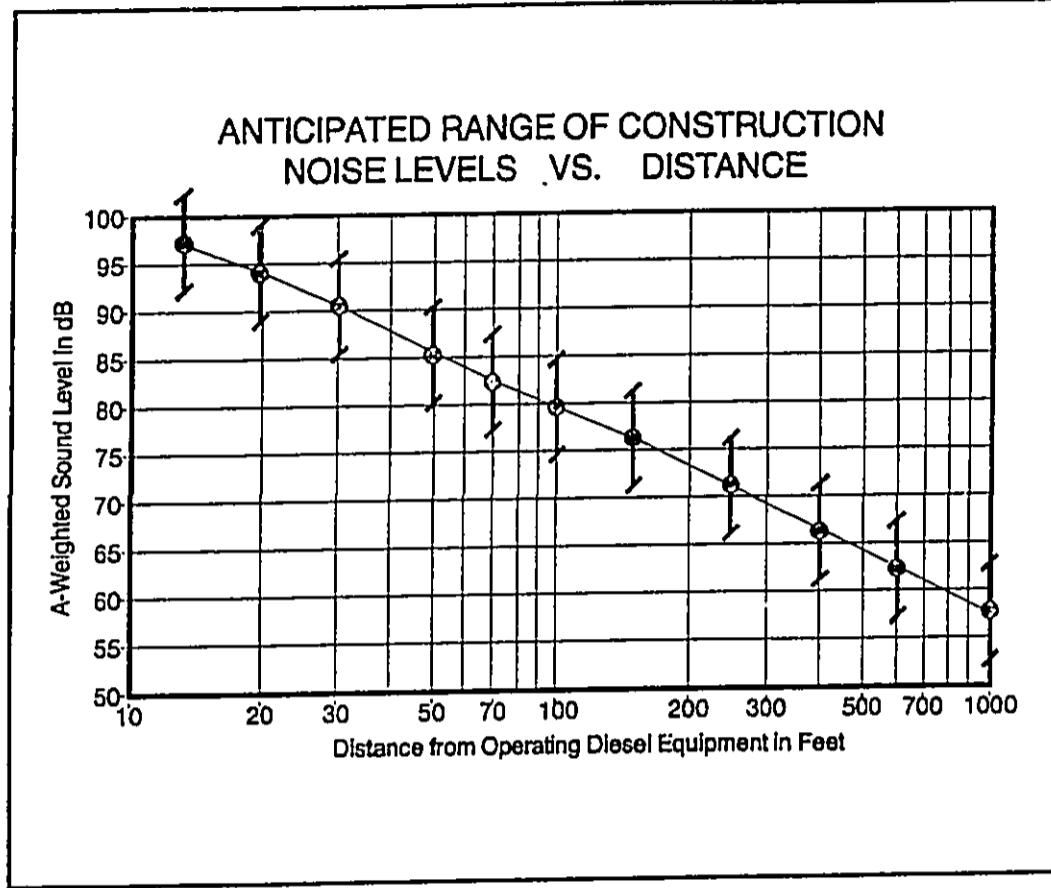
Noise levels of diesel powered construction equipment typically range from 80 to 90 dB at 50 FT distance. Typical levels of noise from construction activity (excluding pile driving activity) are shown in FIGURE 5. Adverse impacts from construction noise are not expected to be in the "public health and welfare" category due to the temporary nature of the work and due to the administrative controls available for its regulation. Instead, these impacts will probably be limited to the temporary degradation of the quality of the acoustic environment in the immediate vicinity of the project site.

Construction noise levels at existing structures can intermittently exceed 90 dB when work is being performed at close distances in front of these structures. Along the major portion of the highway improvement project, distances between the construction sites and receptors are expected to be between 10 and 100 FT, and construction noise levels may intermittently exceed 90 dB. The State Department of Health currently regulates noise from construction activities under a permit system (Reference 6). Under current permit procedures (see TABLE 7), noisy construction activities are restricted to hours between 7:00 AM and 6:00 PM, from Monday through Friday, and exclude certain holidays. Noisy construction activities are normally restricted to the hours of 9:00 AM to 6:00 PM on Saturdays, with construction not permitted on Sundays. These restrictions minimize construction noise impacts on noise sensitive receptors along the highway project corridor and its connector roads, and have generally been successfully applied. In this way, construction noise impacts on noise sensitive receptors can be minimized.

In addition, the use of quieted portable engine generators and diesel equipment should be specified for use within 500 FT of noise sensitive properties. Heavy truck and equipment staging areas should also be located at areas which are at least 500 FT from noise sensitive properties whenever possible. Truck routes which avoid residential communities should be identified wherever possible. The use of 8 to 12 FT high construction noise barriers should also be used where close-in construction work to noise sensitive structures is unavoidable.

CONSTRUCTION NOISE LEVELS VS. DISTANCE

FIGURE 5



HAWAII
STATE LANDFILL REPORT

Map Point: LOCATION UNKNOWN

EDI #: 18LF

Facility: KAILUA KONA
KAILUA KONA HI
HAWAII County

Contact:
Operator Address:

HAWAII
PERMITTED CLEAN AIR FACILITY REPORT

Map Point: LOCATION UNKNOWN

EDI #: 53A

Facility: GRACE PAC CORP. PAV
HONOKOHAI
NORTH KONA HI 000000000
HAWAII County

Plant ID: 00011
Region: 09

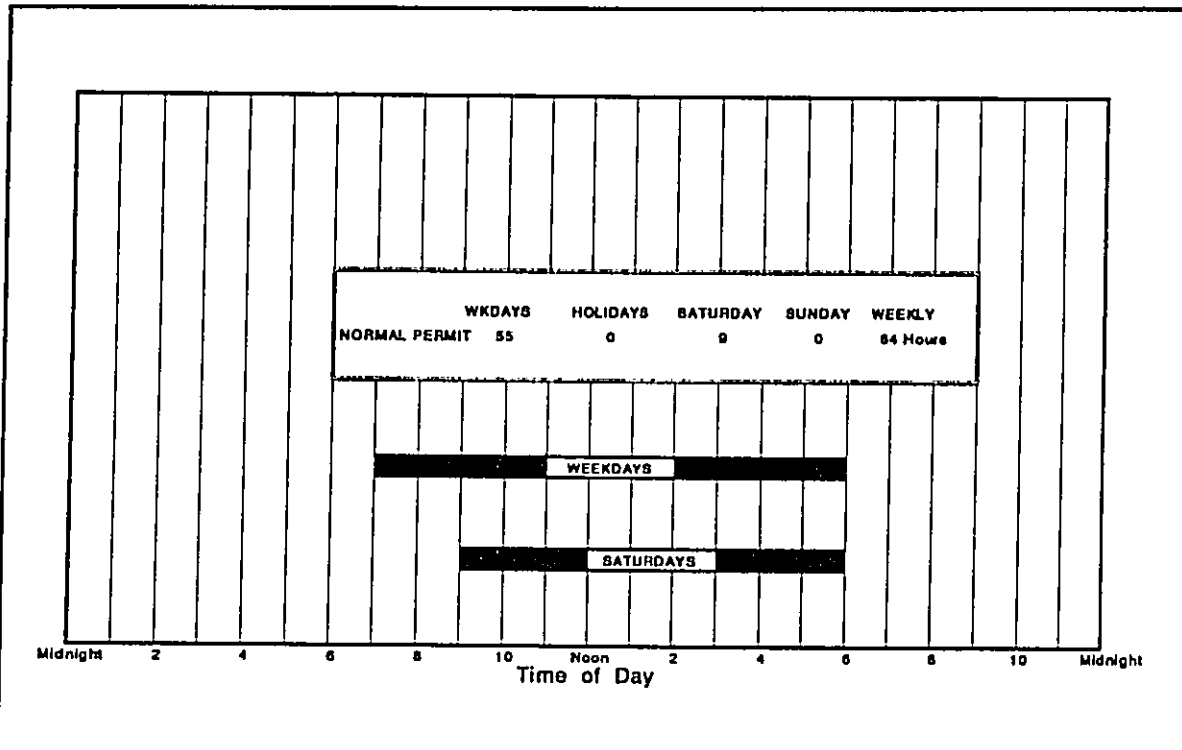
Air Quality Control Region: 060
Operating Status: Operating
Compliance Status: In compliance - inspection
EPA Classification Code: Actual or potential emissions are above the applicable major source thresholds

Pollutant(s):
TOTAL PARTICULATE MATTER EES1 2.300000
TOTAL PARTICULATE MATTER P 2.300000

STATE LANDFILLS: This list tracks the active and closed landfills and waste disposal sites reported by each state agency.
EDI JOB #: 12076
Report Date: 06/26/96
Environmental Database, Inc.

Estimated with emissions valuations
EPC1 Potential control emissions valuations
EPU1 Potential uncontrolled emissions valuations
EAU1 Actual uncontrolled emissions valuations
EDI JOB #: 12076
Report Date: 06/26/96

A Actual or estimated actual
I Incomplete source load information
P Potential controlled per Alabama Power decision
Environmental Database, Inc.



AVAILABLE WORK HOURS UNDER DOH PERMIT PROCEDURES FOR CONSTRUCTION NOISE

TABLE 7

APPENDIX A. REFERENCES

- (1) Barry, T. and J. Reagan, "FHWA Highway Traffic Noise Prediction Model," FHWA-RD-77-108, Federal Highway Administration; Washington, D.C.; December 1978.
- (2) CY 1996 and CY 2020 traffic assignments and forecasts for the Kuakini Highway Improvement Project; Transmittals from Parsons Brinckerhoff of August 6, 1996 and October 16, 1996.
- (3) Hawaii State Department of Transportation Traffic Counts and Vehicle-Type Classifications for Stations B-E and 8-K; July 1994.
- (4) Federal Highway Administration; "Procedures for Abatement of Highway Traffic Noise and Construction Noise," 23 CFR Chapter I, Subchapter J, Part 772; April 1, 1995.
- (5) February 1, 1995 Letter from Ron Tsuzuki, State DOT to AMFAC/JMB Hawaii, Inc.; HWY-PA 2.4400 and discussions with State DOT.
- (6) Title 11, Administrative Rules, Chapter 46, Community Noise Control; Hawaii State Department of Health; September 23, 1996.

APPENDIX B (CONTINUED)

APPENDIX B
EXCERPTS FROM EPA'S ACOUSTIC TERMINOLOGY GUIDE

Descriptor-Symbol Usage

The recommended symbols for the commonly used acoustic descriptors based on A-weighting are contained in Table 1. As most acoustic criteria and standards used by EPA are derived from the A-weighted sound level, almost all descriptor symbol usage guidance is contained in Table 1.

Since acoustic nomenclature includes weighting networks other than "A" and measurements other than pressure, an expansion of Table 1 was developed (Table 11). The group adopted the ANSI descriptor-symbol scheme which is structured into three stages. The first stage indicates that the descriptor is a level (i.e., based upon the logarithm of a ratio), the second stage indicates the type of quantity (power, pressure, or sound exposure), and the third stage indicates the weighting network (A, B, C, D, E, ...). If no weighting network is specified, "A" weighting is understood. Exceptions are the A-weighted sound level and the A-weighted peak sound level which require that the "A" be specified. For convenience in those situations in which an A-weighted descriptor is being compared to that of another weighting, the alternative column in Table 11 permits the inclusion of the "A". For example, a report on blast noise might wish to contrast the L_{dn} with the L_{dn}A.

Although not included in the tables, it is also recommended that "L_{pn}" and "L_{spn}" be used as symbols for perceived noise levels and effective perceived noise levels, respectively.

It is recommended that in their initial use within a report, such terms be written in full, rather than abbreviated. An example of preferred use is as follows:

The A-weighted sound level (LA) was measured before and after the installation of acoustical treatment. The measured LA values were 85 and 75 dB respectively.

Descriptor Nomenclature

With regard to energy averaging over time, the term "average" should be discouraged in favor of the term "equivalent". Hence, L_{eq} is designated the "equivalent sound level", for L_d, L_n, and L_{dn}, "equivalent" need not be stated since the concept of day, night, or day-night averaging is by definition understood. Therefore, the designations are "day sound level", "night sound level", and "day-night sound level", respectively.

The peak sound level is the logarithmic ratio of peak sound pressure to a reference pressure and not the maximum root mean square pressure. While the latter is the maximum sound pressure level, it is often incorrectly labelled peak. In that sound level meters have "peak" settings, this distinction is most important.

"Background ambient" should be used in lieu of "background", "ambient", "residual", or "indigenous" to describe the level characteristics of the general background noise due to the contribution of many unidentifiable noise sources near and far.

With regard to units, it is recommended that the unit decibel (abbreviated dB) be used without modification. Hence, dBA, PndB, and EPndB are not to be used. Examples of this preferred usage are: the Perceived Noise Level (PNL) was found to be 75 dB, L_{pn} = 75 dB. This designation is based upon the recommendation of the National Bureau of Standards, and the policies of ANSI and the Acoustical Society of America, all of which disallow any modification of but except for prefixes indicating its multiples or submultiples (e.g., deci).

Noise Impact

In discussing noise impact, it is recommended that "level weighted population" (LWP) replace "equivalent noise impact" (ENI). The term "Relative Change of Impact" (RCI) shall be used for comparing the relative differences in LWP between two alternatives.

Further, when appropriate, "Noise Impact Index" (NII) and "Population Weighted Loss of Hearing" (PWL) shall be used consistent with CHMA Working Group 69 report Guidelines for Reporting Environmental Impact Statements (1977).

A-WEIGHTED RECOMMENDED DESCRIPTOR LIST

TABLE 1

TERM	SYMBOL
1. A-Weighted Sound Level	L _A
2. A-Weighted Sound Power Level	L _{WA}
3. Maximum A-Weighted Sound Level	L _{max}
4. Peak A-Weighted Sound Level	L _{Apk}
5. Level Exceeded x% of the Time	L _x
6. Equivalent Sound Level	L _{eq}
7. Equivalent Sound Level over Time (T) (1)	L _{eq(T)}
8. Day Sound Level	L _d
9. Night Sound Level	L _n
10. Day-Night Sound Level	L _{dn}
11. Yearly Day-Night Sound Level	L _{dn(Y)}
12. Sound Exposure Level	L _{SE}

(1) Unless otherwise specified, time is in hours (e.g. the hourly equivalent level is L_{eq(1)}). Time may be specified in non-quantitative terms (e.g., could be specified a L_{eq(WASH)} to mean the washing cycle noise for a washing machine).

SOURCE: EPA ACOUSTIC TERMINOLOGY GUIDE, BNA 8-14-78, NOISE REGULATION REPORTER.

APPENDIX B (CONTINUED)

TABLE II
RECOMMENDED DESCRIPTOR LIST

TERM	ALTERNATIVE(1)		OTHER(2)	
	A-WEIGHTING	A-WEIGHTING	WEIGHTING	UNWEIGHTED
1. Sound Level (Pressure) (3)	L _A	L _{pA}	L _B , L _{pB}	L _p
2. Sound Power Level	L _{WA}		L _{WB}	L _w
3. Max. Sound Level	L _{max}	L _{Amax}	L _{Bmax}	L _{pmax}
4. Peak Sound Level (Pressure)	L _{Apk}		L _{Bpk}	L _{pk}
5. Level Exceeded x% of the time	L _x	L _{Ax}	L _{Bx}	L _{px}
6. Equivalent Sound Level	L _{eq}	L _{Aeq}	L _{Beq}	L _{peq}
7. Equivalent Sound Level Over Time(T) (4)	L _{eq(T)}	L _{Aeq(T)}	L _{Beq(T)}	L _{peq(T)}
8. Day Sound Level	L _d	L _{Ad}	L _{Bd}	L _{pd}
9. Night Sound Level	L _n	L _{An}	L _{Bn}	L _{pn}
10. Day-Night Sound Level	L _{dn}	L _{Adn}	L _{Bdn}	L _{pdn}
11. Yearly Day-Night Sound Level	L _{dn(Y)}	L _{Adn(Y)}	L _{Bdn(Y)}	L _{pdn(Y)}
12. Sound Exposure Level	L _S	L _{SA}	L _{SB}	L _{Sp}
13. Energy Average value over (non-time domain) set of observations	L _{eq(e)}	L _{Aeq(e)}	L _{Beq(e)}	L _{peq(e)}
14. Level exceeded x% of the total set of (non-time domain) observations	L _{x(e)}	L _{Ax(e)}	L _{Bx(e)}	L _{px(e)}
15. Average L _x value	L _x	L _{Ax}	L _{Bx}	L _{px}

(1) "Alternative" symbols may be used to assure clarity or consistency.
 (2) Only B-weighting shown. Applies also to C,D,E,.....weighting.
 (3) The term "pressure" is used only for the unweighted level.
 (4) Unless otherwise specified, time is in hours (e.g., the hourly equivalent level is Leq(t)). Time may be specified in non-summative terms (e.g., could be specified as Leq(WASH)) to mean the washing cycle noise for a washing machine.

APPENDIX C
SUMMARY OF BASE YEAR AND CY 2020
TRAFFIC ASSUMPTIONS

STREET SEGMENT	***** CY 1996 *****			***** CY 2020 *****		
	AM VPH	MID VPH	PM VPH	AM VPH	MID VPH	PM VPH
A (North)	501	737	699	815	985	990
A (South)	356	671	636	570	985	1,000
Two-Way	856	1,408	1,335	1,385	1,970	1,990
B (North)	546	891	871	838	1,203	1,193
B (South)	572	838	805	865	1,198	1,243
Two-Way	1,117	1,729	1,676	1,703	2,400	2,435
C (North)	632	899	887	858	1,223	1,195
C (South)	597	844	886	818	1,150	1,275
Two-Way	1,229	1,742	1,773	1,675	2,373	2,470
D (North)	560	713	741	790	1,093	1,035
D (South)	454	690	748	803	1,135	1,248
Two-Way	1,014	1,402	1,489	1,593	2,228	2,283
STREET SEGMENT	** CY 2020 (W/O PROJECT) **			* CY 2020 (WITH PROJECT) *		
	AM MPH	MID MPH	PM MPH	AM MPH	MID MPH	PM MPH
A (North)	22	19	18	23	19	20
A (South)	24	19	19	29	26	27
Two-Way	23	19	19	26	23	24
B (North)	20	19	18	26	24	23
B (South)	21	20	18	26	22	23
Two-Way	21	20	18	26	23	23
C (North)	21	18	18	27	24	24
C (South)	25	21	20	28	26	26
Two-Way	24	20	19	27	25	26
D (North)	20	17	17	26	22	22
D (South)	18	17	15	23	23	20
Two-Way	20	17	16	25	23	21

Appendix F
Archaeological and Historical Assessments

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ARCHAEOLOGICAL AND HISTORICAL ASSESSMENT
AND RECONNAISSANCE SURVEY OF
THE OLOLI ROAD RIGHT-OF-WAY AND
A PORTION OF THE KUAKINI HIGHWAY RIGHT-OF-WAY
IN THE AHUPUA'A OF LANIHAAU, MOEAUOA, KEOPU AND HONUUA'ULA,
KAILUA TOWN, NORTH KONA, ISLAND OF HAWAII

by

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Prepared for

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CULTURAL SURVEYS HAWAII
September 1996

ABSTRACT

At the request of Parsons Brinckerhoff Quade & Douglas, Inc., Cultural Surveys Hawaii completed an archaeological and historical assessment and a reconnaissance survey of the Ololi Road right-of-way and a 2800-foot long portion of the Kuakini Highway right-of-way - between Palani Road and Hualalai Road - in the ahupua'a of Lanihau 1 and 2, Moenuoa 1 and 2, Keopu 1, 2 and 3, and Honuua'ula, in Kailua Town on the island of Hawaii.

No archaeological or historic surface sites were located within the Kuakini Highway and Ololi Road rights-of-way. None of the existing buildings along the rights-of-way are older than fifty years and of historical significance.

At least two possible traditional Hawaiian burials are located within an undeveloped parcel - TMK 7-5-07:28 - on the makai side of the Kuakini Highway at the junction with Sarona Road. Remnants of a heiau complex may be present in a parcel - TMK 7-5-04:24 - on the south side of the Ololi Road right-of-way. Planning for the improvement of Ololi Road and the Kuakini Highway should take into consideration the existence of these two site areas to ensure that direct or indirect impact to these site areas is avoided.

The State Historic Preservation Division burials program should be consulted concerning any possible impact to the burial site. To our knowledge, at present no lineal descendants have been identified. If the burial site is to be impacted in any way, an attempt should be made to identify lineal descendants and they should be consulted. All other provisions of State laws relating to treatment of Hawaiian burials should be followed.

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I. INTRODUCTION

A. Project Area Description

At the request of Parsons Brinckerhoff Quade & Douglas, Inc., Cultural Surveys Hawaii has completed an archaeological and historical assessment and a reconnaissance survey of a 2800-foot (854-meter) long portion of the Kuakini Highway right-of-way and the Ololi Road right-of-way in the *ahupua'a* of Lanihau 1 and 2, Moeauoa 1 and 2, Keōpū 1, 2 and 3, and Honua'ula, in Kailua on the island of Hawai'i (Figures 1 & 2). The portion of the Kuakini Highway right-of-way under study commences approximately 200 feet (61 meters) northwest (toward Kohala) of the highway's junction with Palani Road and extends southeast (toward Ka'u), terminating at the Keōpū channel improvement approximately 200 feet (61 meters) past the highway's junction with Hualalai Road. The highway right-of-way is 80 feet (24 meters) wide. The Ololi Road right-of-way under study commences at the road's junction with the Kuakini Highway, extends 500 feet (152.4 meters) northeast and terminates at, but does not connect to, Kopiko Street. The road right-of-way is 25 feet (7.7 meters) wide.

B. Scope of Work

The scope of work included:

- 1) historic research on the properties adjacent to the Ololi Road right-of-way and the portion of the Kuakini Highway right-of-way, including review of existing archaeological reports, historic maps and other records;
- 2) historic and archival research to identify and locate any buildings of historic value (over 50 years old) adjacent to the road and highway rights-of-way, and to present preliminary evaluations of the significance of these buildings and the appropriateness for further investigation;
- 3) fieldwork consisting of inspection of land adjacent to the road and the highway rights-of-way that are presently undeveloped;
- 4) preparation of a report detailing the results of the historical investigation and the fieldwork, with emphasis on defining areas which are archaeologically sensitive and which may be impacted by development within the rights-of-way. Preliminary recommendations will be made on further actions, if sensitive areas are located.

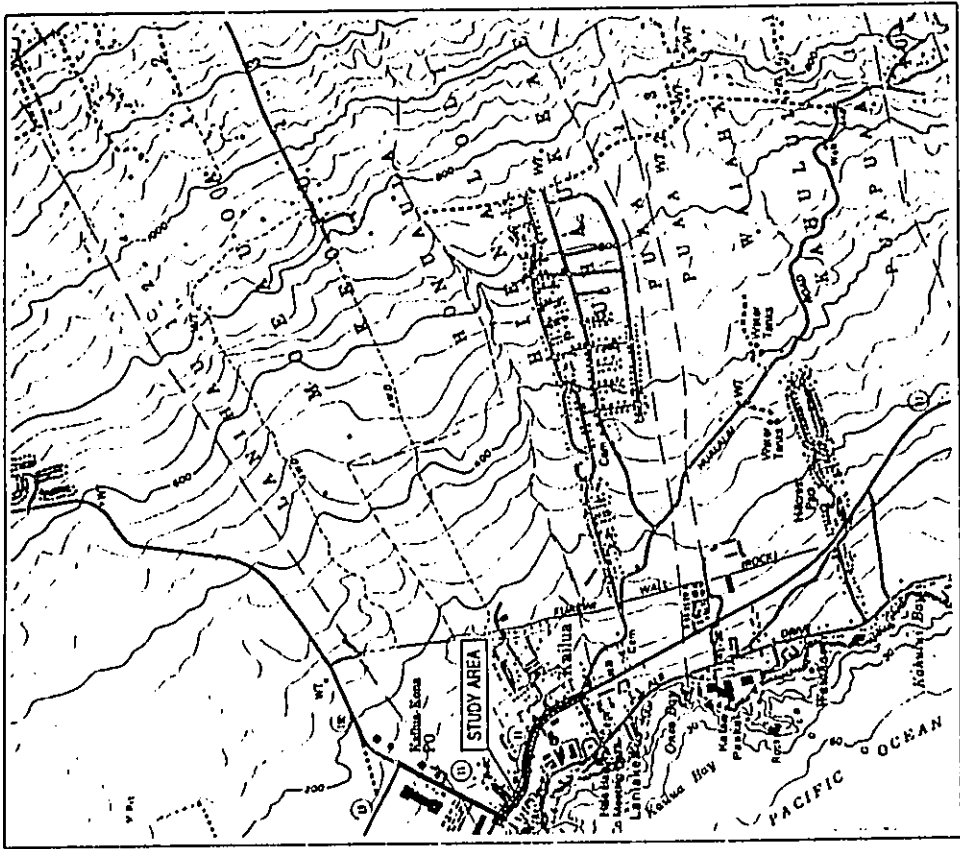


Figure 1 Portion of USGS 7.5 Minute Series Topographical Map, Kailua Quadrangle, showing study area (hatched)

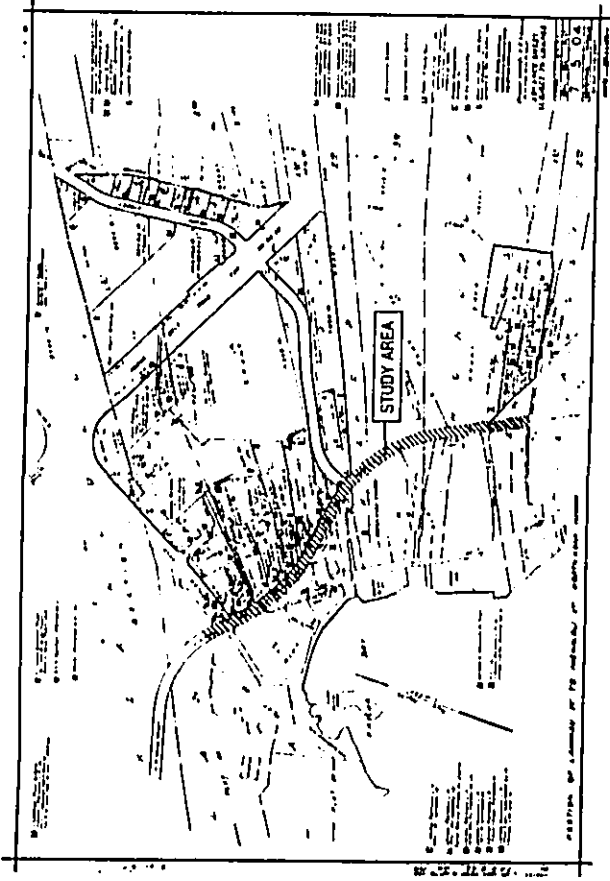


Figure 2 Tax map showing study area (hatched)

C. Work Accomplished

Reconnaissance survey fieldwork was conducted on August 22 and 23, 1996. The portion of the Kuakini Highway right-of-way and the Olohi Road right-of-way were traversed on foot. Photogrammetric maps (see Figures 16-18 below) and plan maps of the study area provided by Parsons Brinckerhoff Quade & Douglas, Inc. facilitated identification of specific areas of concern during fieldwork. Because permissions to enter undeveloped parcels adjacent to the road and highway rights-of-way were not obtained prior to the fieldwork, inspection of these parcels was limited to general observation from the rights-of-way of areas immediately adjacent to the parcel boundaries.

Background research included: a review of previous archaeological studies on file at the State Historic Preservation Division of the Department of Land and Natural Resources; review of documents at Hamilton Library of the University of Hawaii, the Hawaii State Archives, the Mission Houses Museum Library, the Hawaii Public Library, and the Archives of the Bishop Museum; study of historic photographs at the Hawaii State Archives and the Archives of the Bishop Museum; and study of historic maps at the Survey Office of the Department of Land and Natural Resources.

II. ARCHAEOLOGICAL AND HISTORICAL DOCUMENTATION

The Olohi Road right-of-way and the portion of the Kuakini Highway right-of-way comprising the present study area are located within *ahupua'a* (land divisions) of the North Kona district: Lanihau 1 and 2, Moeauoa 1 and 2, Keopu 1.2 and 3, and Honua'uia.

Historical accounts and old Hawaiian tradition identify the *ahupua'a* of the Kona District as the residence of chiefs and the center of political consolidations in late pre-historic and early historic times. The focus of this chiefly activity stretched from Kailua to Keauhou. Some of the *ali'i* associated with the Kona area in pre-contact times were: 'Ehu-kai-malino, 'Umi-a-Laloa, Alapa'i-nui, and Kalani'opu'u. Traditions record that the *ali'i* favored Kona because of the abundance of agricultural produce and its many good surfing areas.

Indicative of this chiefly favor is the documented residency of Kamehameha I on the shore of Kailua Bay in the *makai* portion of Lanihau *ahupua'a*. In 1812 Kamehameha returned to Hawaii island from O'ahu to make what was to be his final home - until his death in 1819 - at Kamakahonu on Kailua Bay. If a substantial population of *ali'i* and their followers was established at Kailua Bay, the present study area - on land between 600 and 1200ft. (183 to 366 meters) from the coast, may have represented - until the early contact period - the "outsirts" of Kailua village where coastal settlement gives place to *mauka* agricultural work areas.

By the first decades of the 19th century, however, the inhabitants of Kailua and Kona would have long experienced the social pressures and consequences of western contact. "As early as 1788, Hawaiians begin enlisting as seamen on the foreign ships that stopped at Island ports, and their number increased rapidly with the growth of whaling in the Pacific" (Schmitt 1973:16). As harbor facilities were developed at Kailua, Kawaihae and Kealahou during the early 1800s, these burgeoning ports - supplying food stuffs, water and fuel to foreign trading ships - became centers of a population drawn from increasingly isolated -

economically and socially - areas of the island.

Early western visitors to Kailua Bay and the village along its shoreline give a picture of patterns of land use and population distribution. The missionary William Ellis described Kailua in 1823:

They enjoyed a fine view of the town and adjacent country. The houses, which are neat, are generally erected on the sea-shore, shaded with cocoa-nut and kou-trees, which greatly enliven the scene. The environs were cultivated to a considerable extent; small gardens were seen among the barren rocks on which the houses are built, wherever soil could be found sufficient to nourish the sweet potato, the water-melon, or even a few plants of tobacco, and in many places these seemed to be growing literally in the fragments of lava collected in small heaps around their roots. (Ellis 1969:60)

Ellis elsewhere records "3,000 inhabitants" at Kailua village (Ellis 1963:ix). One source estimated a population of perhaps 20,000 people residing in a 30-mile radius of the village during the 1920s (Winne 1928).

Missionary reports and censuses of the 1830s chart the diminishing population of Kona. One factor - inter-island migration - reducing the population of Kona was specifically noted by missionaries in 1832:

We have been sensible for some time that the number of inhabitants in this island is on the decrease. There is an almost constant moving of the people to the leeward islands, especially since the removal of the governor [Kuaikini] to Oahu. Some leave by the order of the chiefs, and others go on their own responsibility. At a late census of this district [Kona] the number of inhabitants fell short of 13,000. (Thurston and Bishop 1833:236)

In the 1834 census, a total North Kona population of 5,957 was recorded (Schmitt 1873:31).

As the native population diminished in the 1830s, the physical landscape of Kailua changed as western-style buildings were constructed at the bay. The earliest structures were built at the behest of the missionary population and the western-influenced *ali'i*. A stone and mortar house was built for Rev. Artemas Bishop in 1831. Moku'aikaua Church was dedicated in 1837 (it replaced the original thatched meeting house that had burnt down two years earlier). Hulihe'e Palace, the residence of Kuaikini, Governor of Hawai'i island, was

completed in 1838. These were all constructed along the government road at Kailua Bay, likely representing the continuing focus of the Kailua population at the bay.

Records generated during the 1840s for Land Commission Awards (LCAs) conferred at the mid-century document the disposition of population and land use that had evolved since western contact within the *ahupua'a* through which the two rights-of-way under study traverse. At the *Makale* of 1848, Lanihau 1 - comprising 302 acres - was awarded to William C. Lunaliilo (LCA 8559-B:11). Lanihau 2 was retained by the government, as was Moeauoa 1. Moeauoa 2 - comprising 130 acres - was awarded to William Pitt Leleiohoku. Keopū 1 was awarded to Miriam Keahikuni Ke-kau-'onohi, a granddaughter of Kamehameha I (LCA 11,216:39). Keopū 2 was retained by the government and Keopū 3 was awarded to Victoria Kamāmālu, sister of Kamehameha IV and Kamehameha V (LCA 7713 5).

Subsequently, *kuleana* claims - by commoners claiming to occupy and/or to be cultivating land parcels - were made in these *ahupua'a*. Among the crops mentioned in testimonies for these land claims are taro, sweet potato, coffee, banana, sugar cane, and breadfruit. The Kona farming practices noted in 1823 by the missionary Ellis - "small gardens...among the barren rocks...wherever soil could be found sufficient to nourish the sweet potato, the water-melon, or even ...tobacco...in many places...growing literally in the fragments of lava collected in small heaps around their roots" - appear to have continued 25 years later. An 1883 map of North Kona (Figure 3) shows the disposition of some of the land claims awarded within the *ahupua'a* under study, with the future Olo'i Road and Kuaikini Highway corridors indicated. These parcels, except for awards and grants to *ali'i* and the Protestant Mission, are mostly claimed as house lots in the *Makale* records. The present Kuaikini Highway corridor appears to traverse four LCA parcels, three of which have been identified as houselots. LCA 7426 to Kahue in Lanihau 2 is recorded as a houselot with 2 houses on 2 acres. LCA 3541 to Kanewalawala in Moeauoa 2 is recorded as a houselot on .18

acre. LCA 7338 in Moeauoa 2 is recorded as 1 houselot in 5 sections on 2.07 acres. The map thus suggests that, at mid-19th century, the present study area continued to represent the *mauka* habitation fringe of the "village" at Kailua.

During the second half of the 19th century, the population of Kailua and North Kona continued to diminish, as documented in Hawaiian government censuses: in 1853 the total North Kona population was recorded as 4,110, in 1872 it was 2,218, and by 1890 the total population was only 1,753 (Schmitt 1977:12-13). The 1883 map above (Figure 3), based on surveys of North Kona by J.S. Emerson for the Hawaiian government in the 1880s, shows the then "new road to Kohala" (which includes the present Ololi Road corridor) and the "new road to Hooluaea" (the present Hualalai Road). The map also indicates that construction of western-style structures associated with the Kailua population was concentrated along the government road (the present Ali'i Drive alignment) near the coast and, except for two structures indicated in Keopū 1, had not yet approached the vicinity of the present Kuakini Highway corridor under study. Two historic photographs - ca. 1890s - show these structures at the coast, defining the village of Kailua near the end of the 19th century (Figures 4 & 5).

After 1890, the North Kona population would rise from 3,061 in 1896 to 4,728 in 1930 (*Ibid.*:13-14). This growth reflects the influx of immigrants and entrepreneurs drawn to the commercial agricultural pursuits (including coffee, sugar, cotton, tobacco and sisal), ranching (cattle and sheep), and mercantile enterprises that had by then replaced the traditional Hawaiian subsistence practices. Into the 1920s and 1930s, growth of Kailua town continued to be concentrated at the *makai* government road (the present Ali'i Drive). A 1927 fire insurance map of North Kona (Figure 6) shows clusters of residential and commercial structures at Kailua at the coast and, along the *mauka* government road (the present Mamalahoe Highway), at Captain Cook, Kealakokua, Kainaiu and Hooluaea. A second 1927 fire insurance map (Figure 7) records the layout of the Kailua buildings. Among the

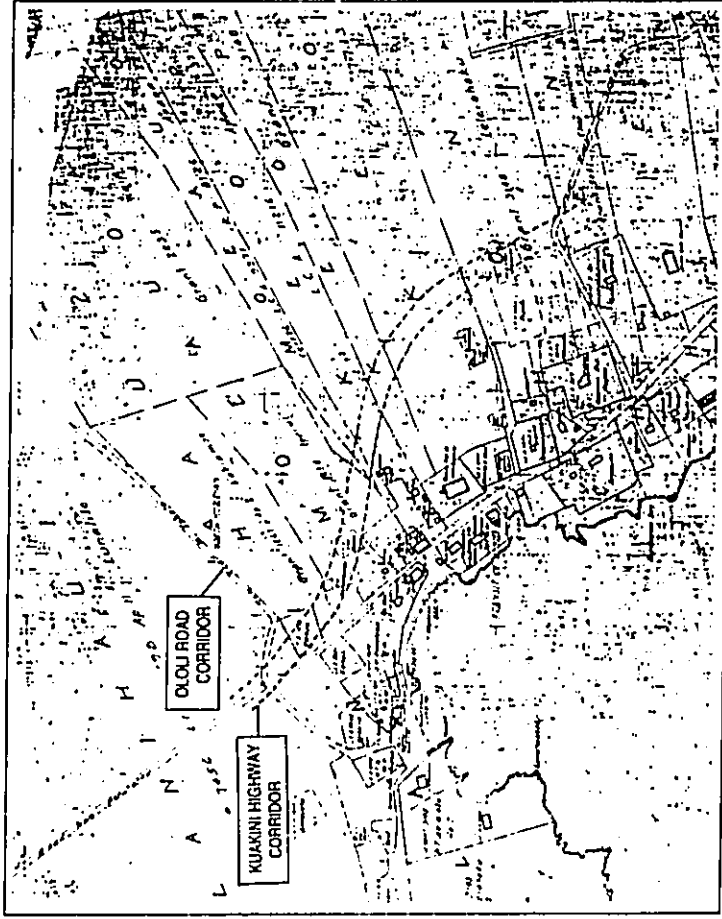


Figure 3 Portion of 1883 map "Kailua Town and Vicinity North Kona-Hawaii" by J.S. Emerson and S.M. Kanakanui (1926 tracing) with locations of Ololi Road and Kuakini Highway corridors indicated

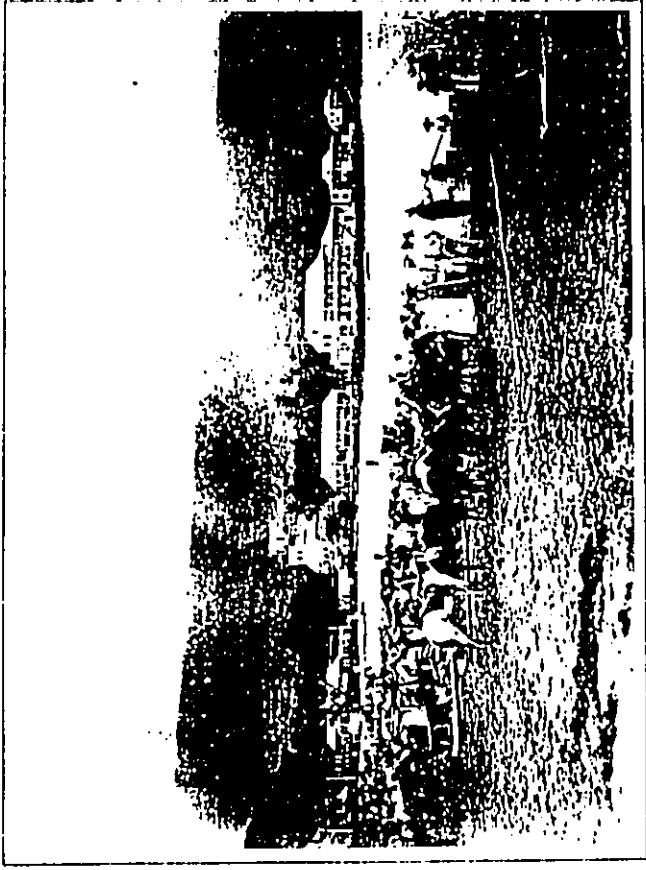


Figure 4 "Steamer Day", Kailua, Hawaii, with Mokuaukaia Church and Hulihee Palace on the opposite shore. ca. 1890s. Bishop Museum Archives.

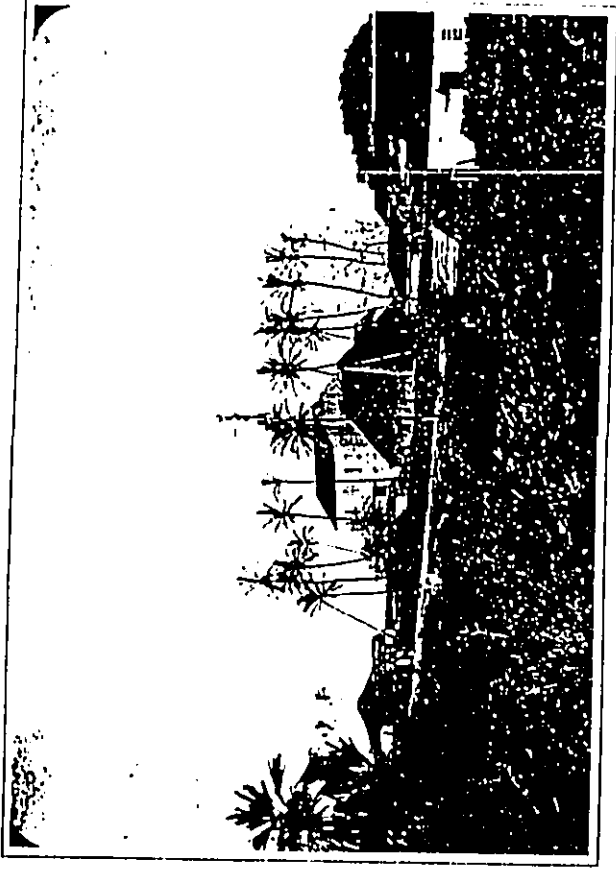


Figure 5 Kailua, Kona. Princess Ruth's grass house and Hulihee Palace in background. ca. 1890s. Bishop Museum Archives.

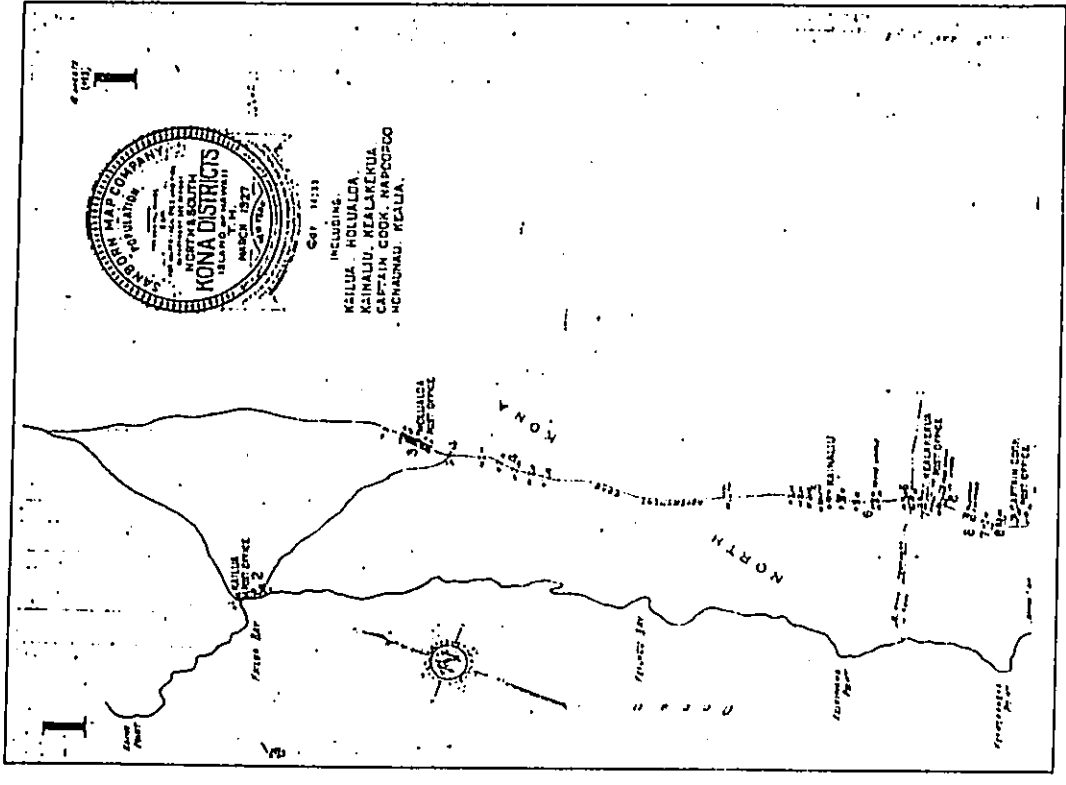


Figure 6 1927 Sanborn fire insurance map showing centers of residential and commercial building between Captain Cook and Kailua, North Kona

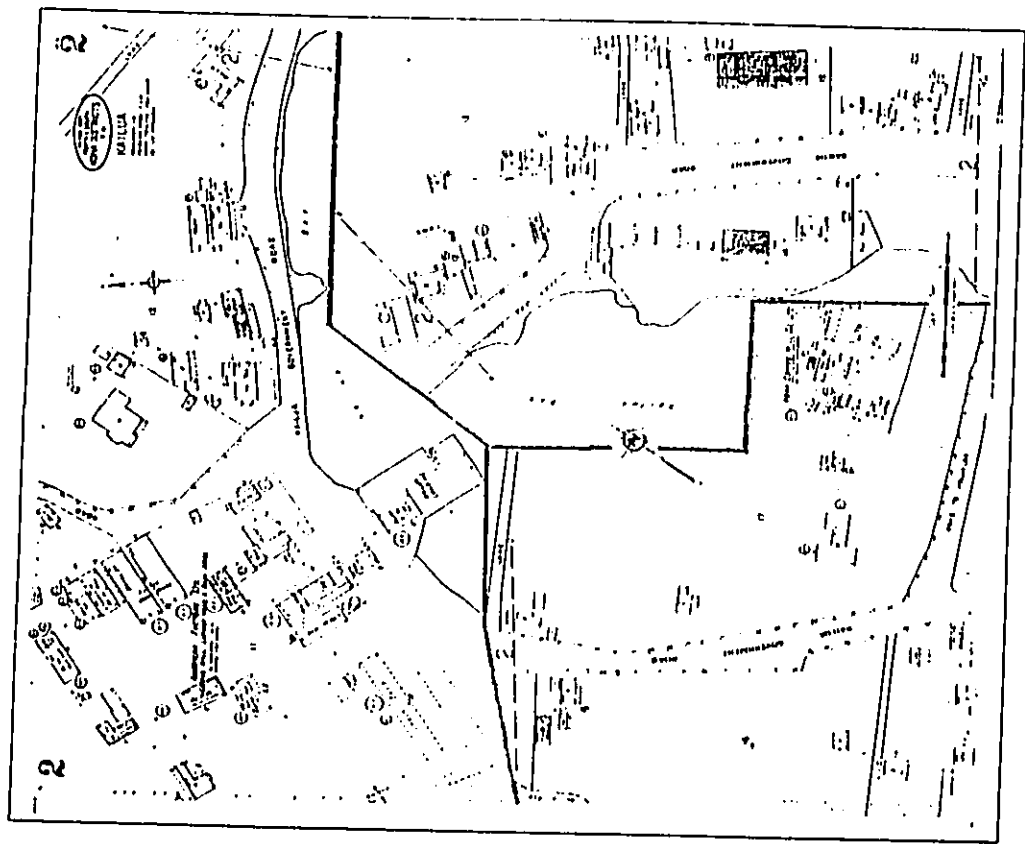


Figure 7 1927 Sanborn fire insurance map showing commercial and residential structures at Kailua along the government road (present Ali'i Drive alignment)

structures shown are coffee mills and warehouses, lumber yard sheds, a sugar warehouse, restaurants, residences, and commercial lodgings.

Aerial photographs from the early 1930s reveal changes to the Kailua landscape (Figures 8 & 9). While the spire of Moku'aikaua Church continues to dominate the town, new buildings hint at the direction - figuratively and literally - of Kailua's future growth: at the coast is the Kona Inn and other buildings are now seen well *mauka* of the coast road.

After the end of World War II, major steps in the development of Kailua would commence. The Kona Airport was constructed at the northwest edge of the town between 1948 and 1950 (The airport would close in 1970, replaced by the new Keāhole Airport, and its site converted into a state park). In the late 1940s, plans were made for the "Kailua-Keaou Road" (Project No. S-229 (1)) connecting the *mauka* government road to Palani Road and the new airport road (Figure 10); this road, when constructed in the early 1950s, would be named for Kuakini, 19th-century governor of Hawai'i Island.

An aerial photograph shot just before the new road's construction and a plan for the road comprising the present study area provide clues to understanding current conditions in the study area. The 1949 photograph (Figure 11) shows that the future Kuakini Highway route between Hualalai and Palani roads followed no existing trail or roadway. The only structures within or adjacent to the highway corridor appear to be isolated residential structures located *mauka* of the commercial structures clustered just above the coast. Similar residential structures line the route previously identified on the 1863 map (see Figure 3 above) as the "new road to Kohala" and which will come to be named Olohi Road.

The plan - dated August 5, 1949 - for the Kailua portion of the Kailua-Keaou Road (Figure 12) shows "existing stonewall fences" - none of which line the right-of-way, and notes: "All existing Stonewall Fences within three Right-of-Way shall be removed and reconstructed at locations as indicated." The plan also indicates reconstructed and new "stonewall fences"



Figure 8 - Aerial view of Kailua town in 1949. Photo: Bishop Museum Archives



Figure 9 Aerial view of Kailua town from foreground of Bishop Museum Avenue.

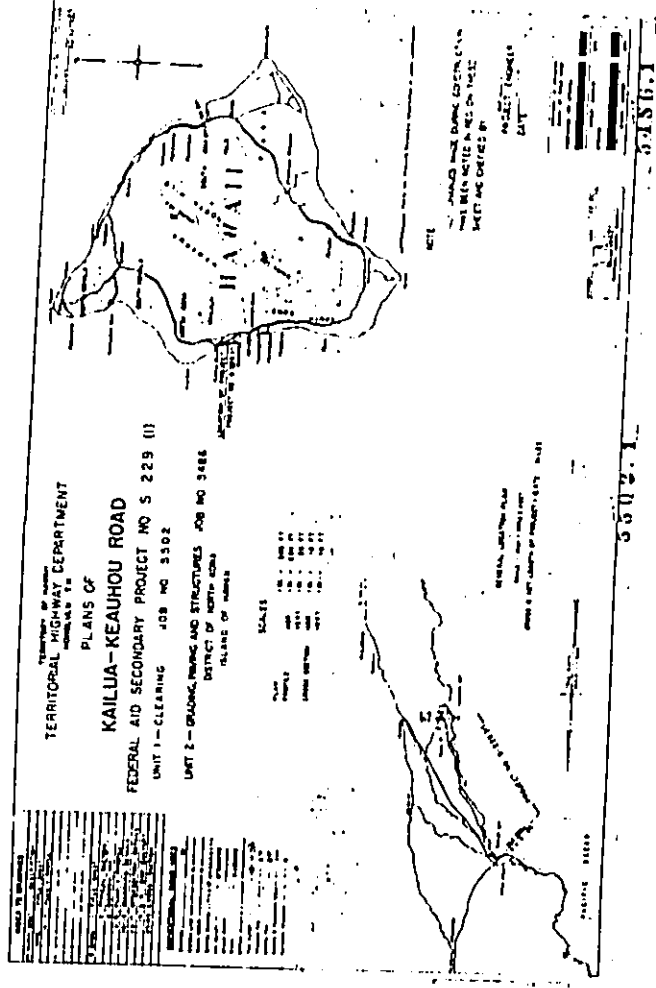


Figure 10 General location plan of "Kailua-Keauhou Road" (Project No. S 229 (I))

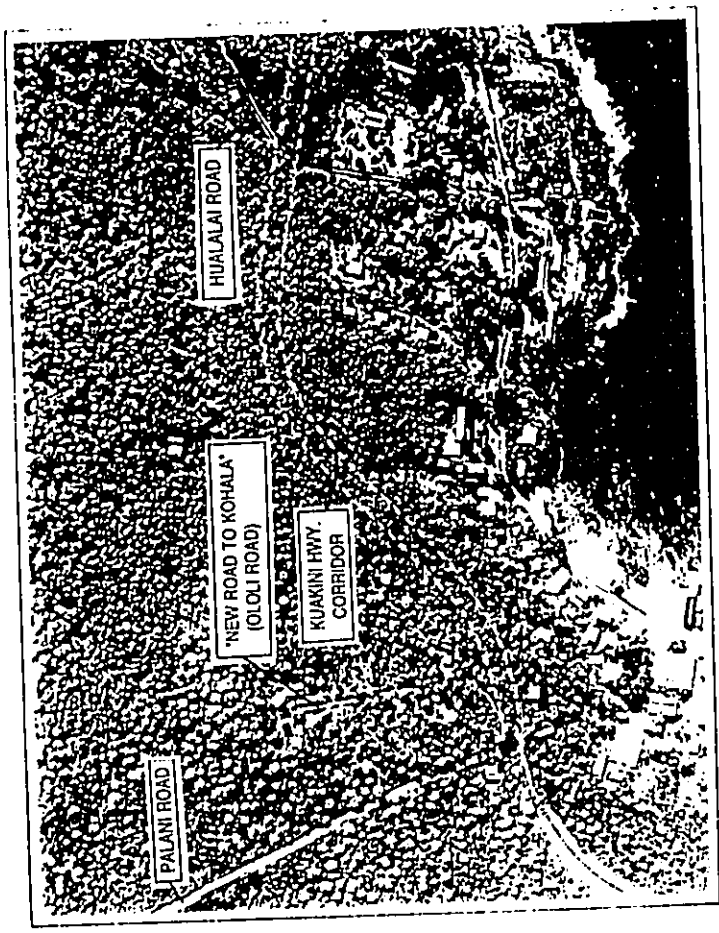


Figure 11 1949 aerial photograph showing future "Kailua-Keaunohou Road" (Kuakini Highway) corridor and Ololi Road alignment

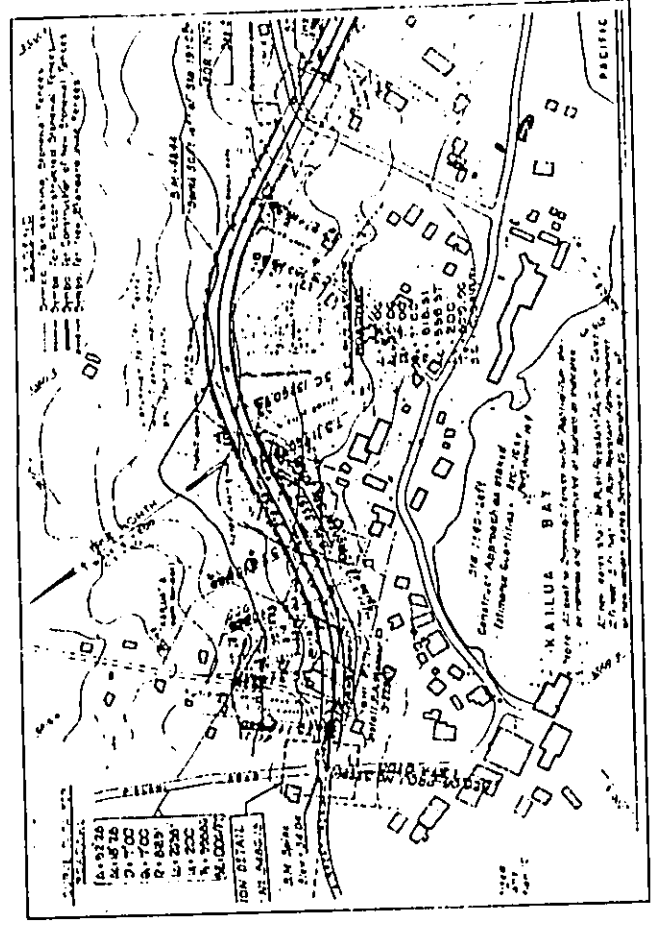


Figure 12 1949 plan for the Kailua portion of the "Kailua-Keaunohou Road" (Kuakini Highway) right-of-way showing existing stone walls and stone walls to be constructed

on both sides of the right-of-way for most of the corridor's length between Hualalai and Palani roads.

In the early 1950s, a pioneering Hawaiian preservationist, Henry P. Kekahuna, began a project of mapping *heiau* sites on Hawaii's Island. In August of 1950, Kekahuna "painstakingly explored and sketched" the remnants of a complex comprising two *heiau* named "Pa-o-Umi" and "Opunui" (Figure 13). A map drawn by Kekahuna in 1953 shows the two *heiau* adjacent to the "old government road", i.e. the present Ololi Road corridor (Figure 14). In 1964, Kekahuna and Theodore Kelsey published a series of articles on "Kamehameha in Kailua" in the *Hilo Tribune Herald*. The article of April 3rd included Kekahuna's descriptions of the two *heiau*:

HEIAU OF PA-O-'UMI

This heiau is situated just south of "Kilo Hoku" (see Figure 14 map), in the land section ('ahu-pue'a) of Lanihau 'Elua (or II). Its floor was 126 feet long by 55 wide. It is said that this particular temple was for the replenishment of the land with wauke, or paper-mulberry (a bush of the genus *morus*), used for the making of tapa, and with a similar bush known as po'aha'aha, which has a somewhat thicker cortex, and is also used for making tapa. Po'aha'aha tapa was especially used for wrapping bodies before depositing them in burial caves. The [area] surrounding this heiau was the place of residence of chiefs and priests in olden days.

When King 'Umi-a-Li-iloa first came to Kailua, where he landed on Pa-o-'Umi Point, he lived temporarily by this heiau, which was renamed in his honor, and the former name forgotten. It is said that its first high-priest was Ku, and that his wife was Hina, a maker of beautiful tapas. Their names did them honor, for they are those of the male and female forest dieties whose permission was requested before greenery or medicinal herbs were gathered. The best of the rocks of this temple were removed by Governor Kua-kini in 1835 for the building of Moku-'ai-kaua Church and other projects.

I painstakingly explored and sketched the remnants of this temple on August 16, 1950.

HEIAU OF 'OPU-NUI

[Opunui heiau (temple), 126 feet long by 59 wide, lies just south of that of Pa-o'Umi, in the land of Moe-au-ou 'Ekahi (or I). It was constructed

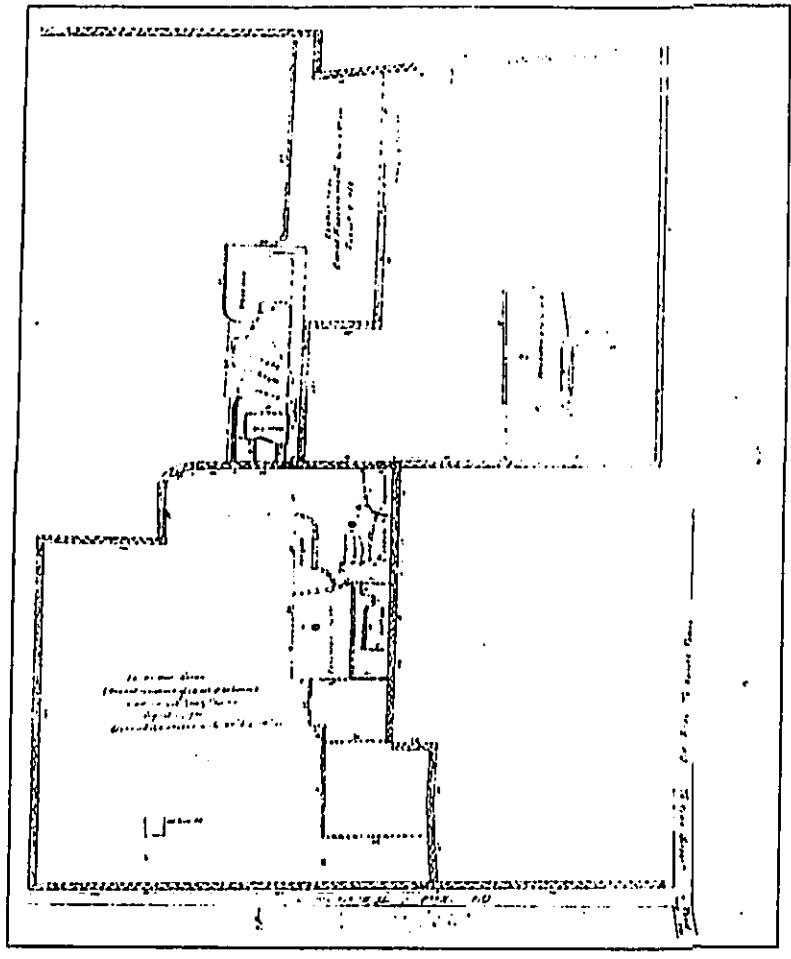


Figure 13 1950 sketch by Henry P. Kekahuna of Pa-o-Umi and Opunui heiau (Bishop Museum Archives)

with large rocks, a considerable quantity of which was taken by Governor Kuakini for his many building projects. The heiau special purposes are said to have been the replenishment of the land with food-crops, and of the sea with fish (heiau ho'oulu 'ai a me ka 'ie).

The house-foundation of the high-priest was situated 40 feet west of the heiau. The sketch of the remnants of this heiau was made by me August 18, 1950.

Measurements recorded on Kekahuna's 1950 sketch locate a portion of the heiau complex in a parcel (TMK 7-5-04:24) immediately adjacent to the Ololi Road right-of-way.

An aerial photograph of the 1960s shows the Kuakini Highway corridor during the second decade of its existence (Figure 15). While the expanding urbanization of Kailua is evident, the majority of the parcels along the highway right-of-way then remained undeveloped.

Beginning in the 1970s, because of federal and state mandates, archaeological surveys of some of these undeveloped parcels along the Kuakini Highway were initiated.

In 1981, two contiguous parcels in Kailua were surveyed by Athens and Schilt of the Bishop Museum (Schilt 1981). One of the parcels - TMK 7-5-04:9 - adjoins the mauka side of the Kuakini Highway corridor between Ololi Road and Henry Street. The survey located an L-shaped alignment (Site D8-71) within 5 meters of the parcel's boundary along the Kuakini Highway; the report noted:

This site will not be recommended for preservation, but archaeological testing is advised. A total of 2 square meters should be excavated, and the relationship of the alignment to any subsurface deposits should be determined. (Schilt 1981:12)

Within the mauka half of the parcel, the survey located a "platform complex" (Site 50-Ha-D8-69) described as consisting of "a series of platforms and walls extending the width of [the parcel] and going beyond it to the northwest and southeast" (*ibid.*:2). The report suggests:

It appears quite possible that the D8-69 complex may be equivalent to portions of the structures that were recorded and roughly sketched as Pa'o'umi and 'Opunui heiau in 1950 by Henry E.P. Kekahuna. (*ibid.*:4)

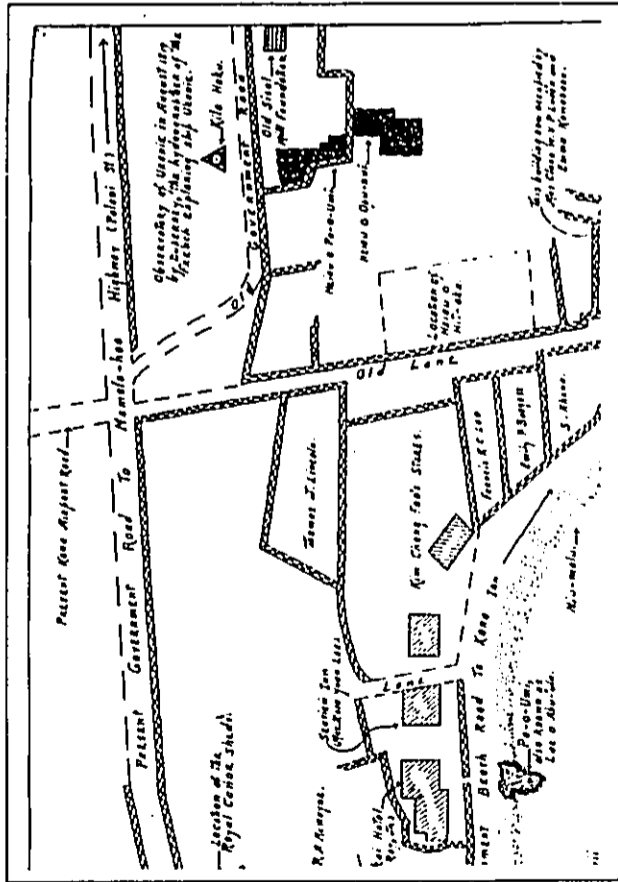


Figure 14 Portion of a 1953 map of Kailua by Henry P. Kekahuna showing Pa-o-Umi and Opunui heiau adjacent to the "old government road" (Ololi Road corridor)

Feature 1 of the D8-69 complex is described:

Only the eastern end of this large platform, c. 45 meters long and 8 to 14 meters wide, is situated within the project area. The *makai* edge of the structure is faced with cobbles and boulders to a height of 1.2 meters, and the platform is paved to create a fairly flat surface. This part of Feature [1] was not carefully explored or mapped due to its occurrence beyond the boundary of [the parcel], where permission had not been obtained for entry on the property. A secondary and smaller (possibly older) platform is within the large one at its east end. It measures c. 7.5 by 12 meters and the alignment forming its *makai* edge is clearly visible in the pavement of the large platform. (*ibid.*:3)

The report's site map shows Feature 1 - the outline of which generally resembles that the two *heiau* in Kekahuna's 1950 sketch - located in the parcel - TMK 7-5-04:24 on Ololi Road - adjoining to the northwest. The current tax map shows a sewer line now running across that parcel in the same location as Feature 1 on the Schilt site map, suggesting that the feature may have been destroyed since the Schilt survey in 1981.

In 1989, Paul H. Rosendahl, Inc. (PHRI) surveyed (reconnaissance level) two parcels - TMK 7-5-04:6 & 13 - for the then-proposed Henry Street corridor between the Kuukini Highway and the Hawaii Belt Road (Queen Ka'ahumanu Highway) (Walker and Rosendahl 1990). At the *makai* end of the study area, above its boundary at the Kuukini Highway corridor, three sites were recorded: a midden scatter, an enclosure (habitation/possible agriculture) and a boundary wall along the boundary at the Kuukini Highway corridor (Walker and Rosendahl 1990:5-6).

Beginning in 1989, Cultural Surveys Hawaii conducted archaeological investigations of a project area slated for expansion of the Lanihau Shopping Center (Hammatt *et al.* 1993). The project area included a parcel, currently designated TMK 7-5-04:55, located along the *maka* boundary of the Kuukini Highway right-of-way, next to the present Henry Street junction. No sites were recorded in the near vicinity of the parcel boundary at the right-of-way.



Figure 15 - Aerial Photo showing Hualalai Highway - street between Hualalai and Feun Roads. Boxed Areas are Vertical

III. SURVEY RESULTS

The project area was surveyed on August 22 and 23, 1996. Investigation of areas outside the Olohi Road and Kuakini Highway rights-of-way was limited to general observation from the rights-of-way as no permissions to enter adjoining parcels had been obtained prior to commencement of field work. Photogrammetric maps (Figures 16-18) provided by Parsons Brinckerhoff Quade & Douglas, Inc. were utilized to identify specific areas of concern during fieldwork.

A. Kuakini Highway Right-of-way

As was noted in the in the previous section of this report, according to the evidence of historic maps and photographs, the Kuakini Highway corridor within Kailua does not follow the route of any pre-20th century trail or roadway (Figures 19 & 20). The highway alignment is a function of post-World War II planning and modern construction capabilities. Excavation and grading for the highway's construction throughout the right-of-way (but especially toward the Palani Road end of the study area) was noted during the present survey. No evidence of any archaeological surface site was observed within the right-of-way.

As was also noted previously, only a few apparently wooden residential structures were standing in the late 1940s in areas immediately adjacent to the future highway corridor. No evidence of any of these structures was observed during the survey. Inspection of the commercial buildings currently on the parcels adjacent to the highway right-of-way confirms the evidence of the background research that their construction post-dates the mid-1950s.

Of special concern is a "grave" site the current tax map indicates on a parcel - TMK 7-5-07:28 - adjacent to the highway right-of-way at the southwest corner of the intersection with Sarona Road (Figures 18, 21-24). The design of the right-of-way fronting the parcel deliberately excludes the burial site. The parcel - currently undeveloped - is a knoll rising approximately 6 ft. (1.8 meters) above the highway, retained by stone walls along the

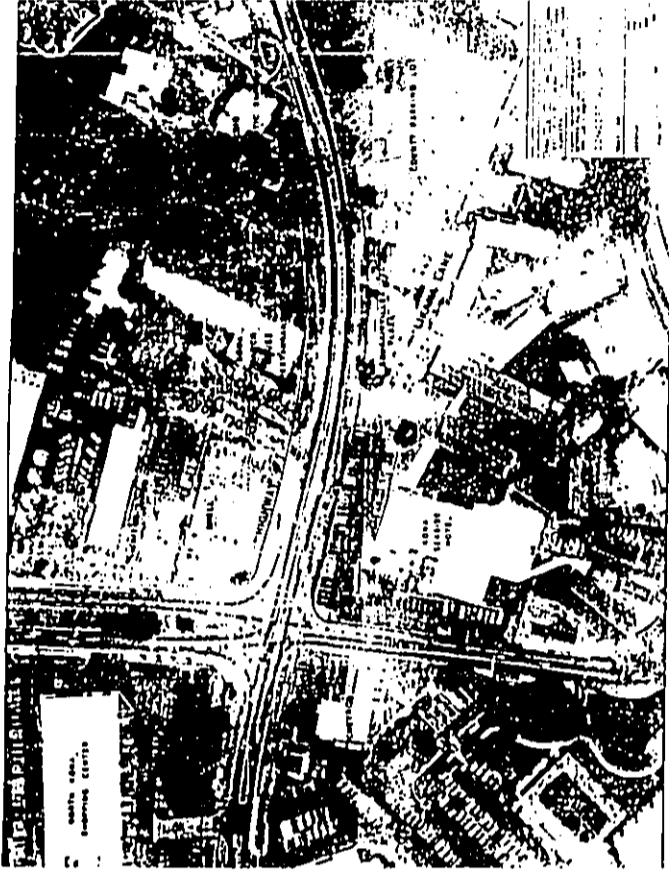


Figure 16 Photogrammetric map showing Olohi Road and northwest portion of Kuakini Highway right-of-way

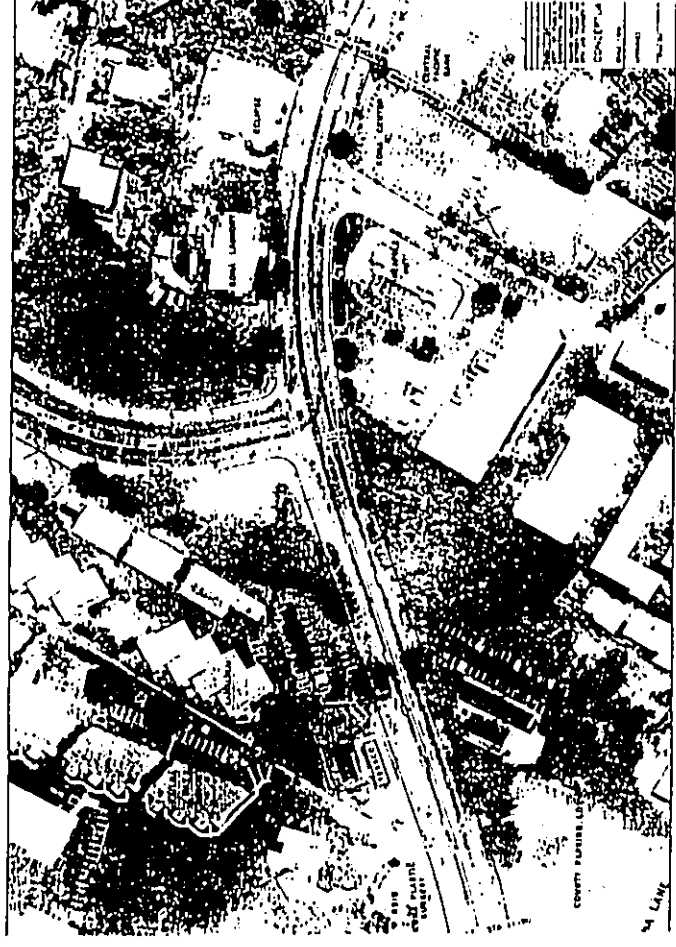


Figure 17 Photogrammetric map showing central portion of Kuakini Highway right-of-way



Figure 18 Photogrammetric map showing southeast portion of Kuakini Highway right-of-way

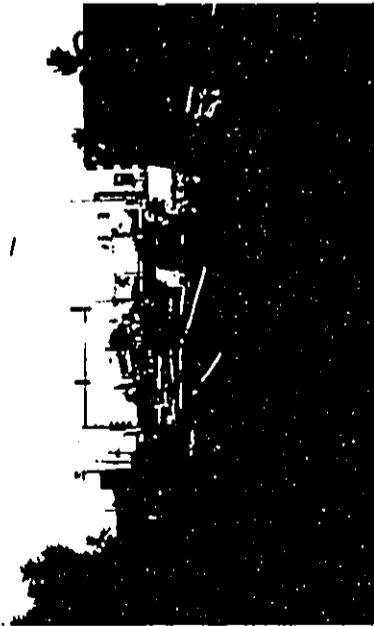


Figure 19 Kuakini Highway right-of-way, view to southwest from Palani Road junction



Figure 20 Kuakini Highway right-of-way, view to northwest from Hualalai Road junction



Figure 21 Retaining wall along Kuakini Highway right-of-way at parcel - TMK 7-5-07-28 - with burial site, view to north



Figure 22 Retaining walls along Kuakini Highway right-of-way (left) and Sarona Road (right) at parcel - TMK 7-5-07-28 - with burial site, view to south

high and Sarona Road. Brief inspection during the present survey confirmed the presence of at least two traditional Hawaiian mounds probably containing burials at the top of the knoll, one oriented toward Kuakini Highway, the other toward Sarona Road. (Subsequent inquiry by Cultural Surveys Hawaii confirmed that no lineal descendants of these burials have yet been identified.)

All the remaining undeveloped parcels along the highway right-of-way were only observed from the right-of-way (Figures 25 & 26). Dense vegetation hampered visibility. However, it appears that no surface structures of archaeological or historic significance are located within these parcels near the right-of-way. Stone walls mark the boundaries of some of the undeveloped parcels with the right-of-way. However these walls are indicated on the highway plan map of 1949 (see Figure 12 above) as structures to be built along with the highway; they were thus not in place prior to the 1950s.

B. Ololi Road Right-of-way

As noted in the previous section of this report, the Ololi Road right-of-way (Figures 27 & 28) follows the route of a former roadway identified in 1883 as the "new road to Kohala". Historic maps and photographs indicate structures along this roadway into the late 1940s. However, as with the Kuakini Highway right-of-way, the Ololi Road right-of-way has borne decades of modern traffic and commercial development. No archaeological or historical surface site were observed within the right-of-way during the survey.

Only one remaining undeveloped parcel - TMK 7-5-04:24 - adjoins the right-of-way. A stone wall demarcates the parcel boundary along the right-of-way (Figures 29 & 30). The 1949 aerial photograph (see Figure 11 above) shows a stone wall along the southwest-Ka'u side of the road corridor. The present stone wall is likely a remnant of that wall and is thus the only remaining structure along the right-of-way of historic age.

The work by Henry Kekahuna in the 1950s and subsequent investigations of adjacent



Figure 23 Burial on TMK 7-5-07:28 oriented toward Kuakini Highway; view to northeast



Figure 24 Burial on TMK 7-5-07:28 oriented toward Sarona Road; view to northwest



Figure 25 Stone wall remnant along *maka* boundary of Kuakim Highway right-of-way view to south



Figure 26 Vegetation beyond collapsed stone wall remnant on *maka* side of Kuakim Highway right-of-way view to northwest



Figure 27 Ololi Road right-of-way view northeast (*mauka*)



Figure 28 Mauka end of Ololi Road right-of-way below Kopiko Street in background view to northeast

parcels (Schilt 1981) suggests that two *heiau* may be present within the undeveloped parcel (TMK 7-5-04:24). However, the current tax map indicates a sewer line running through the parcel in the area where the *heiau* were positioned on Kokahuna's and Schilt's maps, suggesting they may have been destroyed. Because prior permission to enter the parcel was not available, no investigation of the parcel attempted during the present survey. Dense vegetation within the parcel limited viewing of it from the right-of-way.



Figure 29
Stone wall at the boundary of the Ololi Road right-of-way and undeveloped parcel (TMK 7-5-04:24), view to northeast



Figure 30
Stone wall and vegetation within undeveloped parcel (TMK 7-5-04:24) adjoining Ololi Road right-of-way; view to south

IV. SUMMARY AND RECOMMENDATIONS

A. Summary

1) Kuakini Highway Right-of-way

The present Kuakini Highway was constructed in the early 1950s. Study of historic photographs and maps indicate that none of the existing buildings along the highway right-of-way study area are older than fifty years and of historical significance. The 1949 plan for the highway indicates that the remaining stonewalls marking the highway corridor were built in the 1950s as a component of the highway construction. These wall remnants are therefore of no archaeological or present historical significance.

Construction of the highway and forty years of its use and development have obliterated traces of any archaeological surface sites within the right-of-way.

The present configuration of the highway right-of-way excludes a "grave" site noted on the current tax map at TMK 7-5-07:28, an undeveloped parcel at the southwest corner of Sarona Road and Kuakini Highway. An inspection of the parcel confirmed the presence of at least two traditional Hawaiian mounds probably containing burials.

Limited investigation of the remaining undeveloped parcels suggests that no archaeological sites are present in the near vicinity of the highway right-of-way.

2) Ololi Road Right-of-way

Background research indicates that the present Ololi Road follows the alignment of a route identified in 1883 as the "new road to Kohala." No archaeological surface sites or historical sites associated with the 1880s road Kohala were observed within the right-of-way. Only the stone wall demarcating the boundary of the right-of-

way fronting an undeveloped parcel - TMK 7-5-04:24 - predates the 1950s. Within that parcel itself may be the remnants of two *heiau*.

B. Recommendations

Since no archaeological or historical sites were identified within the rights-of-way, no further archaeological investigation is recommended for the present project area.

There are two areas of potential concern in undeveloped parcels adjacent to the project area. One is the possible presence of a *heiau* complex in a parcel - TMK 7-5-04:24 - on the south side of the Ololi Road right-of-way. The other is the presence of traditional Hawaiian burials in a parcel - TMK 7-5-07:28 - on the *makai* side of the Kuakini Highway right-of-way. Neither of these parcels was investigated in depth for this study since they were outside the project area. However, planning for the improvement of Ololi Road and the Kuakini Highway widening should take into consideration the existence of these two site areas to ensure that direct or indirect impact to these site areas is avoided.

The State Historic Preservation Division burials program should be consulted concerning any possible impact to the burial site. To our knowledge, at present no lineal descendants have been identified. If the burial site is to be impacted in any way, an attempt should be made to identify lineal descendants and they should be consulted. All other provisions of State laws relating to treatment of Hawaiian burials should be followed.

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Addendum to an Archaeological and Historical Assessment
and Reconnaissance Survey of
the O'leli Road Right-of-way and
a Portion of the Kuaikini Highway Right-of-way
in the Ahupua'a of Laniihau, Moeavaa, Keoua and Honua'ula,
Kailua Town, North Kona, Island of Hawaii

by

Hallett H. Hammatt, PhD.
and
Tony Bush, B.Ed.

Prepared for
Parsons Brinckerhoff Quade & Douglas, Inc.

CULTURAL SURVEYS HAWAII
January 1998

Since September 1996 when the draft report was completed for the proposed widening of the Kuaikini Highway in Kailua-Kona, Hawaii, pertinent information that may or may not affect the project has emerged in the form of a letter from Mr. William R. Halliday regarding the Laniihau Cave. To preface the letter, a history of the site follows.

According to information received by the missionary visitors of 1823, the Laniihau Cave had been a refuge cave with its entrance within a heavily walled enclosure called an "old military fortification" by William Ellis (1963:62). By 1823 only part of the fortification remained standing. This report is the only mention of what must have been an ancient *pu'ukaha* and *pu'uhouua* (fortification and refuge) in the Kailua area. It is assumed that the stones of the fortification were taken to build the enclosure for the Asa Thurston house lot. Ellis and party explored the Laniihau cave in 1823 by way of a "small aperture" and found a brackish pool approximately 1200 feet in the seaward direction. The pool was estimated to be 50 to 60 feet below the surface of the ground. Historian James Jarves explored the cave in 1840, swam in the pool and gave a similar description (Jarves 1844:215-216). Further exploration of the cave by Chester Smith Lyman in 1846 (1924:130) and Albert Baker in 1915 produced no further details of the cave. As of 1980 (Soehren) various sections of the tube had collapsed and the entrance was partially blocked with debris (Kelly 1983:10-14).

In the early 1970's, "Laniihau", the residence of the Thurston's was inspected. The homestead was allotted State Site Number 56-10-28-7428. The only mention of the cave within the Hawaii Register of Historic Places occurs in the description of the Thurston Laniihau house lot. "An unusual aspect of the [Laniihau house-] site is the presence of cave openings said to have been used by warring natives."

On July 21, 1997, Mr. William R. Halliday, the recently retired chairperson of the Hawaii Speleological Survey and still an active spelunker of Hawaii caves and lava tubes sent a letter (See Figure 1) to Mr. Clyde Shimizu of Parsons Brinckerhoff, giving more information that he personally furnished regarding Laniihau Cave. Excerpts from *The Journal of William Ellis*, as well as a map made by himself and Professor Stephen Kempe on August 6, 1995 of Laniihau Cave using Sistine compasses and cloth tape (See Figure 2) were included in the correspondence to Mr. Shimizu. Based on Mr. Halliday's map it appeared that the cave may have extended into the Kuaikini Highway widening project area. Mr. Halliday also commented that to his knowledge, no archaeological, biological or geological studies have been done on the cave to date.

To address the cave issue, a meeting was set for July 31, 1997 between Ms. Jan Reichelderfer of Parsons Brinckerhoff and Mr. William Halliday to further discuss the possible repercussions of the highway widening project. Dr. Hallett Hammatt, consulting archaeologist from Cultural Surveys Hawaii, was also in attendance at the July 31 meeting. The meeting included discussions of map reference points and the possibility that the highway widening project may somehow affect the historically significant cave. Cultural Surveys Hawaii, Inc. was

asked to further examine the evidence and try to match the cave survey map (Figure 2) to above-ground features mentioned on the map.

In September 1997 Mr. Douglas Borthwick and Mr. Tony Bush examined the project area, above ground, and located the "skylight", referenced on the Halliday Laniakea Cave map. The skylight from above ground (See Kuakini Highway Conceptual Layout Plan, Figure 3) is covered by metal bars to prevent entry and sits approximately 5 feet from Hualalai Road, adjoining a parking area for a few shops on the makai side of the road. A protective rock wall borders the skylight on the Hualalai road-side. The skylight is approximately 140 feet from the intersection of Hualalai Road and Kuakini Highway. According to Mr. Halliday's map the cave extends at least 275 feet more to the "impenetrable drain", thus suggesting that the cave does intercept the project area. Existing above-ground conditions being what they are (i.e. a major intersection, Kuakini Highway turning lanes and large buildings on either side of the roads) and no major damage sustained to the cave to date suggest that no further damage will be caused by surface roadwork.

Based on this new information provided by Mr. Halliday and on our own Cultural Surveys Hawai'i assessment, as well as the present impact evaluation and the assumption that no major subsurface work will be conducted over this cave, we anticipate no adverse effects to the Laniakea Cave related to the highway widening project.

Address ref: 28 July 1997:
101 Aupuni Street #511
Hilo, HI 96720

Address 1 August-1 January 1998:
5530 Corvalli Court
Nashville, TN 37205

16 July 1997

Mr. Clyde Shimizu
Parsons Brinckerhoff
1001 Bishop Street #3050
Honolulu HI 96812

Dear Mr. Shimizu:

re: protection of Laniakea Cave
I recently retired as chairman of the Hawaii Speleological Survey but continue to be very active in Hawaiian speleology. Mr. Tom Pack of Hawaii County Public Works Department has kindly informed me that you are his department's consultant in the Kuakini Highway upgrade between Zalani Street and Hualalai Road. Therefore I am writing you about Laniakea Cave. It appears that this exceptionally historic cave -- in 1923 the first cave in Hawaii to be termed "celebrated" -- runs beneath Kuakini Highway between Kalani Street and Hualalai boulevard. Thus it may or may not be at risk from highway upgrading operations.

Enclosed is a copy of a map made by Prof. Dr. Stephan Kenpe and myself in 1995, using Siateco compasses and cloth tape, together with photocopies of relevant excerpts from The Journal of William Ellis, documenting the historic and cultural significance of this notable cave. To the best of my knowledge, no archaeological, biological, or geologic studies have ever been made in it. Although the main entrance area is commonly used by what used to be called "hobos", formal permission to enter the main entrance is rarely granted. (Ours was kindly arranged by Miss Judy Thurston, whose forebears formerly lived at the site.) I do not know who owns the pit entrance, shown on the map as a skylight.

I have an appointment to meet with Mr. Pack and possibly others in his office next week, and I hope to work with him in protecting this notable cave. I am enclosing also a relevant paper by a British professor of civil engineering bearing on the subject (although he has an erroneous idea about the thickness of the roofs of lava tube caves), and also a recent paper of mine on environmental assessment of areas of this type in Hawaii. Copies of these also will be sent to Mr. Pack.

I will be in Honolulu at the end of the month, en route to the Mainland. I cannot firm up a schedule for some time yet, but I would like to meet with you on July 30 or 31 if our schedules mesh. It is likely that you would have perhaps 30 minutes free on either of these days.

Sincerely yours, *W. R. Halliday*

William R. Halliday SS, T. Pack, ESS, NZS, RNS, FCC

FIGURE 1: Mr. William Halliday Laniakea Letter

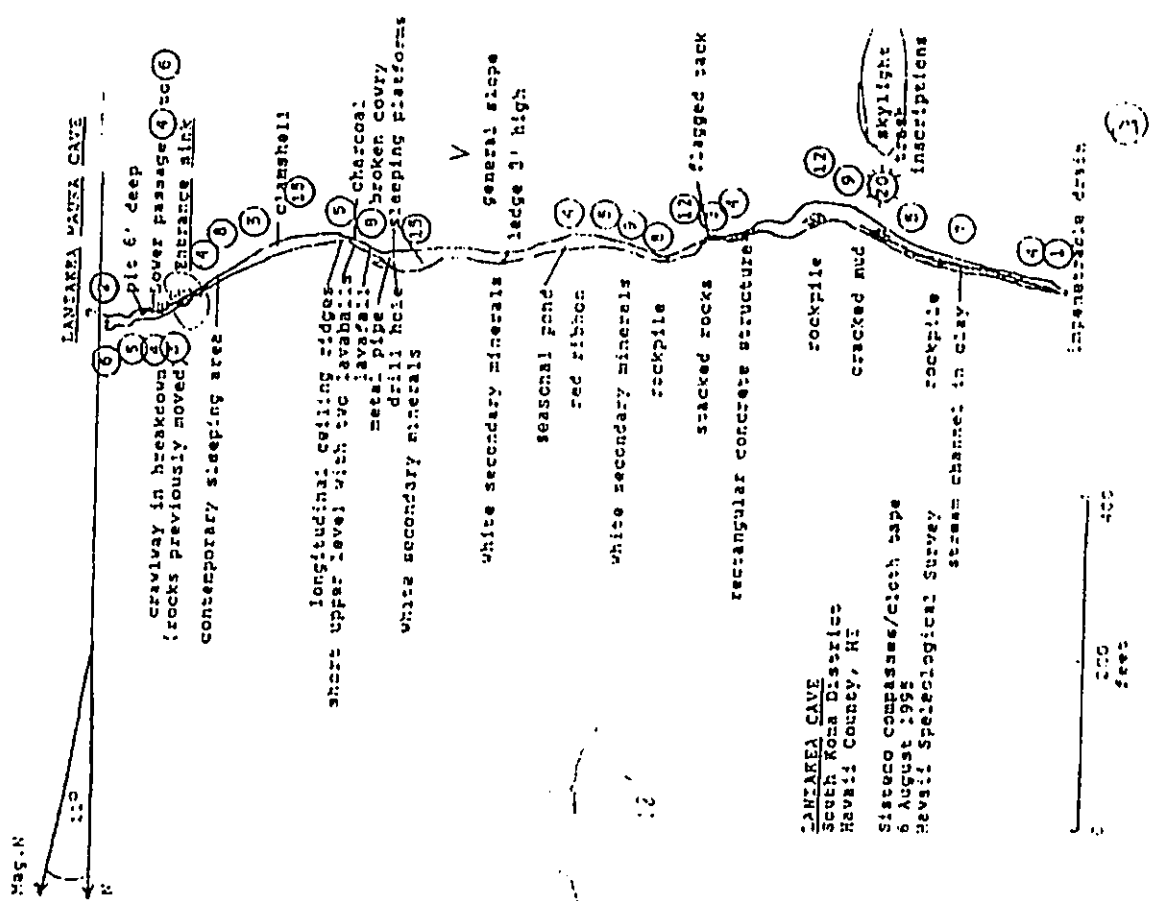
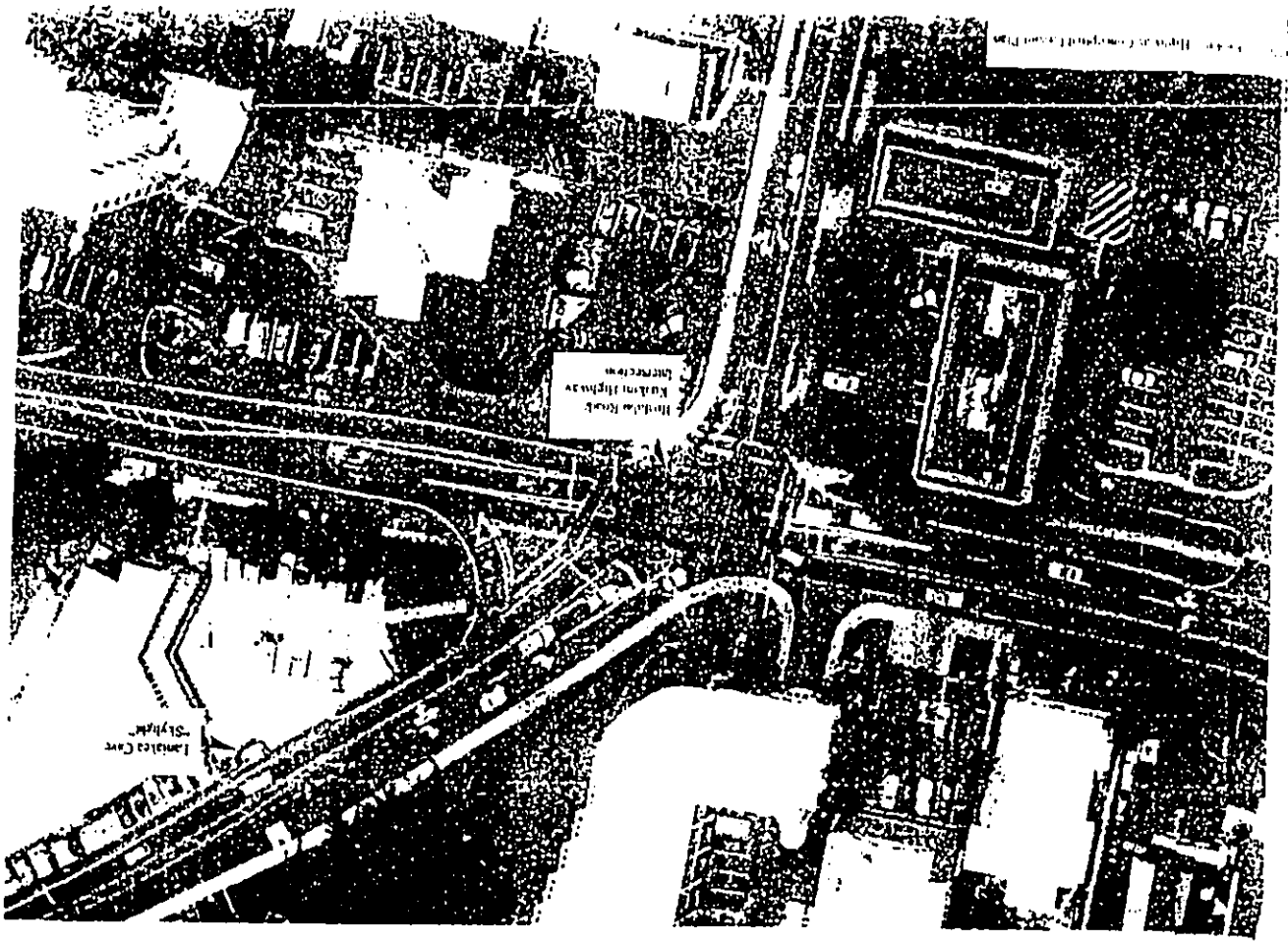


FIGURE 2. Mr. William Halliday Lanikaia cave map