



EXECUTIVE CHAMBERS

HONOLULU

BENJAMIN J. CAYETANO
GOVERNOR

September 24, 1998

TO: The Honorable Kazu Hayashida, Director
Department of Transportation

SUBJECT: Acceptance of the Final Environmental Impact Statement
for the Kealakehe Parkway

With this memorandum, I accept the Final Environmental Impact Statement for Kealakehe Parkway, the island of Hawaii, as satisfactory fulfillment of the requirements of Chapter 343, Hawaii Revised Statutes. The economic, social and environmental impacts, which will likely occur should this project be implemented, are adequately described in the statement. The analysis, together with the comments made by reviewers, provides useful information to policymakers and the public.

My acceptance of the statement is an affirmation of the adequacy of that statement under the applicable laws but does not constitute an endorsement of the proposed action.

I find that the mitigation measures proposed in the environmental impact statement will minimize the negative impacts of the project. Therefore, if this project is implemented, the Department of Transportation and/or its agents should perform these or alternative and at least equally effective mitigation measures at the discretion of the permitting agencies. The mitigation measures identified in the environmental impact statement are listed in the attached document.


BENJAMIN J. CAYETANO

Attachment

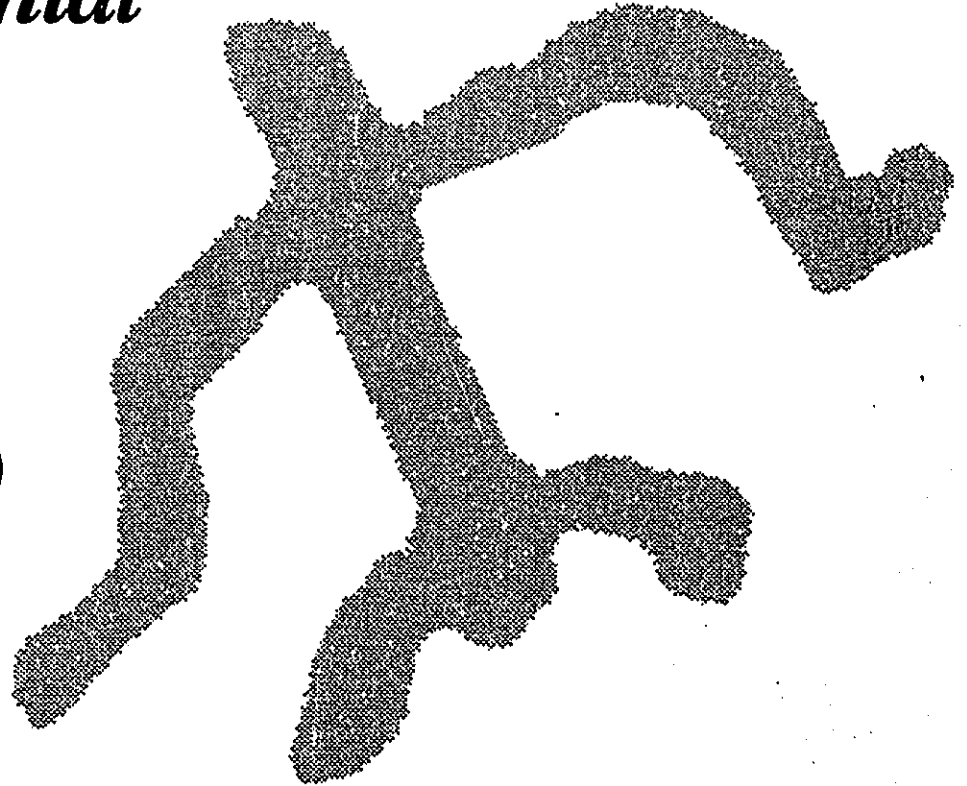
c: Honorable Lawrence Miike
Office of Environmental Quality Control

June 1998 FEIS

Kealahou Parkway

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***Final
Environmental
Impact
Statement
and
Section 4(f)
Evaluation***



Kealahou Parkway

Mamalahou Highway to Queen Kaahumanu Highway, North Kona, Hawaii

*U.S. Department of Transportation
Federal Highway Administration*

*State of Hawaii
Department of Transportation*



June 1998

0330

Office of Environmental Quality Control
235 S. Beretania #702
Honolulu HI 96813
586-4185

DATE DUE

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**KEALAKEHE PARKWAY
MAMALAHOA HIGHWAY TO QUEEN KAAHUMANU HIGHWAY
NORTH KONA, HAWAII**

State Project No. 190 A-01-92

**Final
Environmental Impact Statement
Section 4(f) Evaluation**

Submitted Pursuant to the National Environmental Policy Act (NEPA)
42 U.S.C. 4332 (2)(c), Section 4(f) of the Department of Transportation Act (DOT) 49
U.S.C. 303, and Chapter 343, Hawaii Revised Statutes (HRS)

U.S. Department of Transportation
Federal Highway Administration (FHWA)
and
State of Hawaii Department of Transportation (SDOT)
Highways Division

JUN 25 1998


Date of Approval



**Kazu Hayashida, Director
Department of Transportation**

JUN 26 1998

Date of Approval



**Abraham Wong, Division Administrator
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The proposed completion of Kealakehe Parkway will consist of a 4.0 kilometer (2.5 mile) four-lane divided urban arterial that will connect Mamalahoa Highway and Queen Kaahumanu Highway; a detour road at the eastern (mauka) terminus of Kealakehe Parkway; and construction of new or modified intersections of Mamalahoa Highway, Old Mamalahoa Highway, Palani Road and Kealakehe Parkway. The project will address system linkage needs; existing transportation demand and capacity needs; safety needs; and economic development needs. It will have impacts on land use, socioeconomic conditions, noise levels, traffic conditions, rare and endangered species, and archaeological resources.

NATIONAL ENVIRONMENTAL POLICY ACT STATEMENT

The National Environmental Policy Act (NEPA), 42 U.S.C. 4321-4347, became effective January 1, 1970. This law requires that all federal agencies shall prepare a detailed Environmental Impact Statement (EIS) for every recommendation or report on proposals for legislation and other major federal actions significantly affecting the quality of the human environment. The Federal Highway Administration (FHWA) is, therefore, required to have an EIS prepared on proposals funded under its authority if the proposal is determined to be a major action significantly affecting the quality of the human environment.

EISs are required for many transportation projects as outlined in NEPA. The processing of an EIS is carried out in two stages. Draft EISs are first written and forwarded for review and comment to federal, state and local agencies with jurisdiction by law or special expertise and are made available to the public. This availability to the public must occur at least 15 days before the public hearing and not later than the time of the first public hearing notice or notice of opportunity for hearing. Normally, 45 days, plus mailing time, will be allowed for comments to be made on the Draft EIS unless a time extension is granted by the Hawaii Department of Transportation (HDOT). After this period has elapsed, preparation can begin on the Final EIS.

A Final EIS is prepared to reflect the distribution of the Draft EIS by including the following:

1. Basic Content of the Draft EIS as amended due to internal agency comments, editing, additional alternatives being considered, and changes due to the time-lag between the Draft and Final EIS.
2. Summary of public hearing comments.
3. Summary of comments received on the Draft EIS.
4. Evaluation and disposition of each substantive comment.

Administrative action cannot take place sooner than 90 days after circulation of the Draft EIS to the U.S. Environmental Protection Agency (USEPA) or 30 days after submittal of the Final EIS to the EPA.

Both the Draft and Final EIS are full disclosure documents which provide a full description of the proposed project, the existing environment, and analysis of the anticipated beneficial or adverse environmental effects.

General Reviewer Information

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

Per Section 11-200-18 of the Hawaii Administrative Rules, substantive text changes made for this Final EIS are indicated by double underlines.

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EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

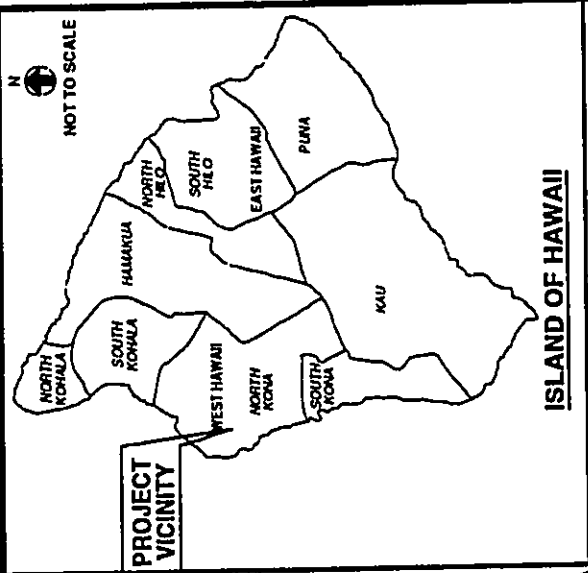
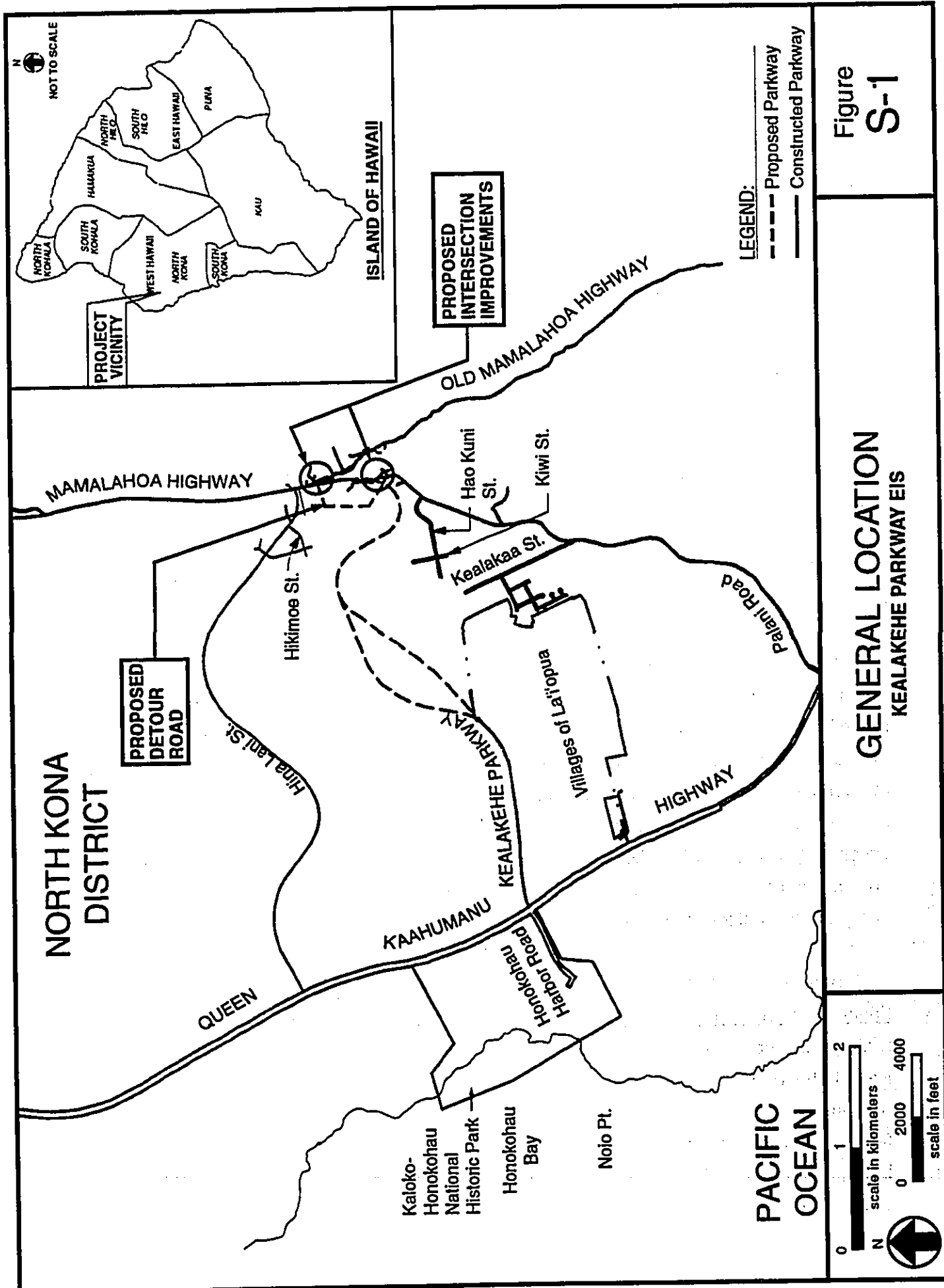
S.1 INTRODUCTION

S.1.1 Applicant and Project Summary

The Federal Highway Administration (FHWA) and the Highways Division of the State of Hawaii Department of Transportation (SDOT) are filing this final Environmental Impact Statement (EIS) as the lead federal and local agencies for this project, the proposed completion of Kealakehe Parkway in Hawaii County, Hawaii. Figure S-1 shows the general project location. When completed, Kealakehe Parkway will connect Mamalahoa Highway to Queen Kaahumanu Highway.

An east-west (mauka-makai) road connecting Mamalahoa Highway and Queen Kaahumanu Highway has been included in roadway and land use plans since November 1989. However, more detailed planning of the Parkway was not initiated until the State of Hawaii Housing Finance and Development Corporation (HFDC) developed a project called the Villages of La'i'opua to provide affordable housing units in the West Hawaii region. Additional objectives of the planned community include the provision of necessary infrastructure and facilities to support both the proposed residential units and also regional needs. The planned community roadway system includes the construction of the portion of Kealakehe Parkway within the community, which was completed in August, 1995. However, because the Kealakehe Parkway corridor continues beyond the limits of the HFDC project, HFDC was unable to complete the full length of Kealakehe Parkway.

In September 1990, the Governor accepted the Kealakehe Planned Community Final Environmental Impact Statement. Kealakehe Parkway was one of two proposed regional arterial roadways described in that EIS. However, to fully achieve its goals, Kealakehe Parkway would have to be extended from the HFDC property line east (mauka) to Mamalahoa Highway. Therefore, the SDOT initiated a State-funded feasibility study and the environmental review process for the completing segment. Later, when federal funding was obtained for the completing segment, the EIS became a document subject to both State and federal environmental regulations.



PROPOSED INTERSECTION IMPROVEMENTS

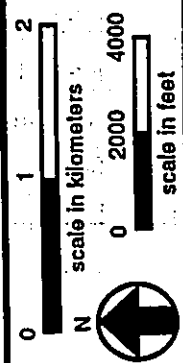
PROPOSED DETOUR ROAD

LEGEND:

- Proposed Parkway
- Constructed Parkway

Figure S-1

GENERAL LOCATION KEALAKEHE PARKWAY EIS



Upon its extension to Mamalahoa Highway, Kealakehe Parkway will satisfy four types of needs:

- system linkage needs;
- existing transportation demand and capacity needs;
- safety needs; and
- economic development needs.

S.1.2 Accepting Authorities

The accepting authorities of the final EIS are the Hawaii Division Administrator of the Federal Highway Administration and the Governor of the State of Hawaii.

S.1.3 Purpose of This Document

This final EIS has been prepared to demonstrate the project's compliance with:

- the National Environmental Policy Act (NEPA);
- Section 4(f) of the Department of Transportation Act;
- Chapter 343, Hawaii Revised Statutes (HRS);
- FHWA guidelines (FHWA Technical Advisory T-6640.8A (October 1987));
- Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, 40 CFR 1500-1508; and
- the Hawaii Administrative Rules [Title 11, Chapter 200 Environmental Impact Statement Rules (August 1996)].

This document identifies and assesses the environmental and social impacts that could result from the completion of Kealakehe Parkway. Preparation of a final EIS requires a detailed analysis of:

- the affected area;
- the purpose of and need for the project;
- alternatives considered;
- the relationship of the proposed action to land use plans, policies, and controls;
- contextual issues;
- required approvals;
- potential impacts;
- comments received and responses to those comments; and

- mitigation and enhancement measures.

The EIS process has been designed to enable project sponsors to develop a well-planned project that is sensitive to the physical, natural and social environment within which it will exist, and ensure that adverse impacts, after appropriate mitigation, do not exceed acceptable levels. Coordination with interested and affected parties is also required and must be documented.

S.2 DESCRIPTION OF THE PROPOSED ACTION

The proposed project consists of three elements:

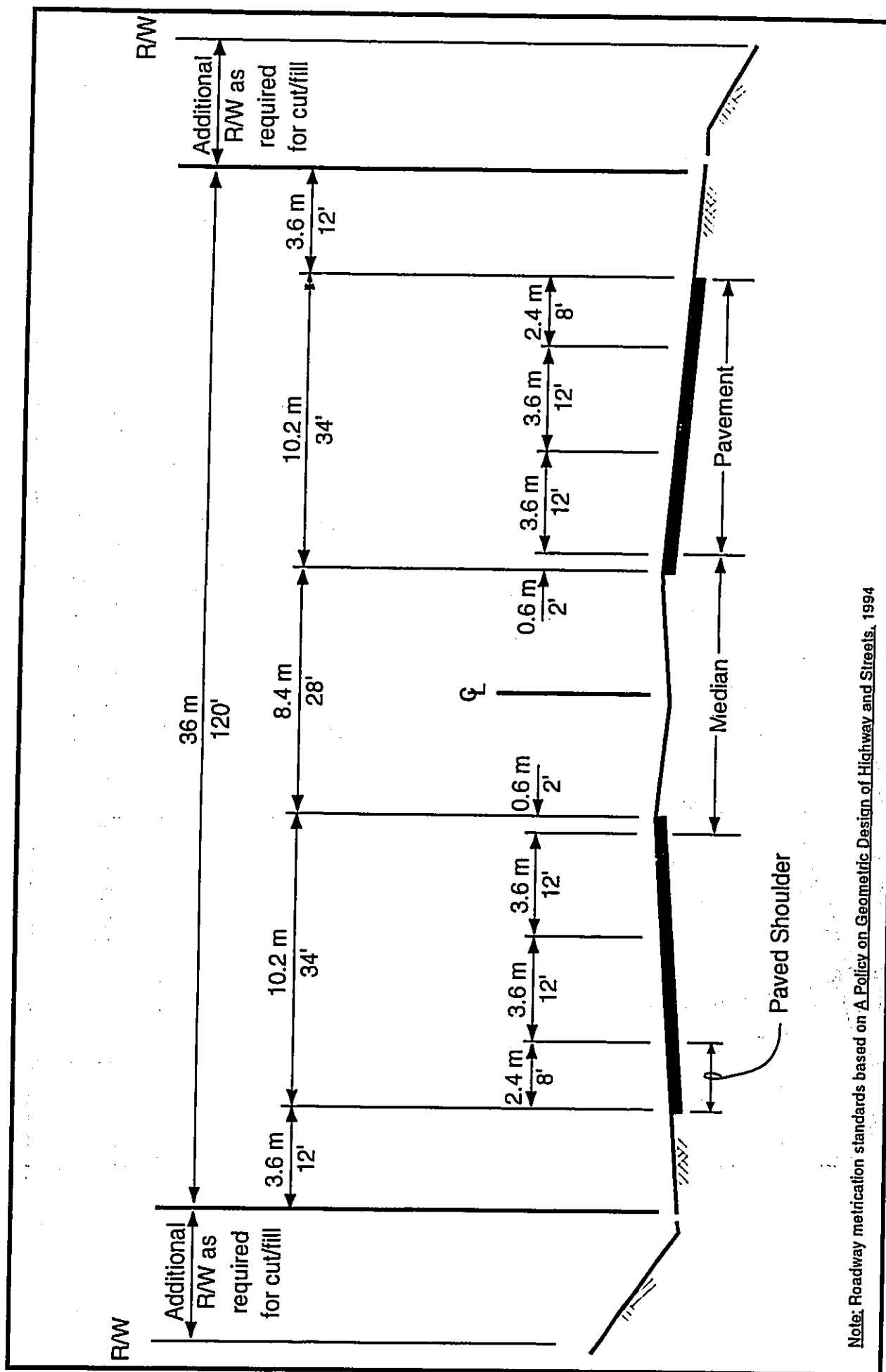
- a four-lane urban arterial (see Figure S-2) that will extend between Mamalahoa Highway and the previously constructed portion of Kealakehe Parkway within the Villages of La'i'opua;
- a construction detour road at the eastern (mauka) terminus of the completing portion of Kealakehe Parkway (see Figure S-3); and
- improvements to the existing and future intersections of Palani Road, Old Mamalahoa Highway, Mamalahoa Highway and Kealakehe Parkway (see Figure S-1).

The detour road will maintain traffic flow during the construction of the eastern (mauka) terminus of the project. After completion of the project, through traffic will travel on Kealakehe Parkway and residential access to a small number of houses at the Parkway's eastern (mauka) terminus will be permanently rerouted to the detour road.

The project description also includes a list of environmental mitigation measures, as described in Section S.5.

S.3 NEED FOR THE PROPOSED ACTION

The proposed Kealakehe Parkway will address four types of needs:



S-5

Note: Roadway metrification standards based on A Policy on Geometric Design of Highway and Streets, 1994

TYPICAL SECTION
KEALAKEHE PARKWAY EIS

Figure
S-2

NOT TO SCALE

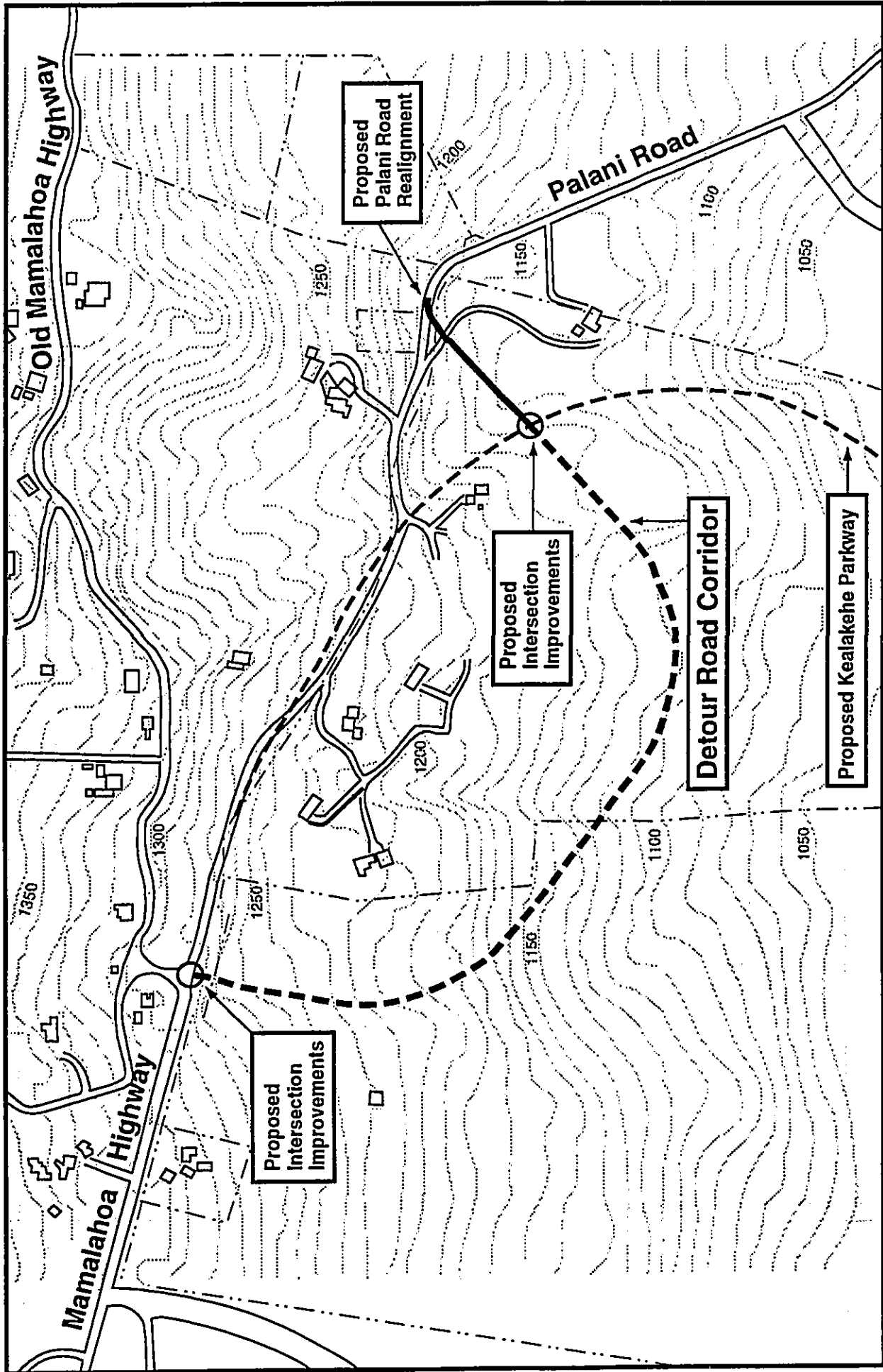
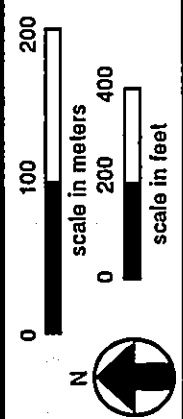


Figure
S-3

PROPOSED DETOUR ROAD CORRIDOR
KEALAKEHE PARKWAY EIS



S.3.1 System Linkage Needs

The area is presently served by two State highways: Queen Kaahumanu Highway and Mamalahoa Highway. Although Queen Kaahumanu Highway extends continuously through the area, the State Route System presently terminates where Mamalahoa Highway becomes Palani Road. Palani Road, a County roadway, connects Mamalahoa Highway with the town of Kailua-Kona. To provide a continuous State Route System, a State roadway that connects Mamalahoa Highway to Queen Kaahumanu Highway is needed.

S.3.2 Existing Transportation Demand and Capacity Needs

Several roadway segments in the area experience Levels-Of-Service (LOS) of E or F during the morning and/or evening peak travel periods. LOS E means that very long traffic delays are experienced. LOS F is worse and is characterized by extreme delays and queuing that may cause severe congestion and affect movements at intersections. (The 1985 Highway Capacity Manual defines six Levels of Service ranging from best "A" to worst "F" conditions.) In part because of existing levels of congestion, Kealakehe Parkway has been identified in various plans, such as the current Island of Hawaii Long Range Highway Plan and the Keahole to Kailua Development Plan (April 1991), to improve existing traffic circulation throughout the Kealakehe area.

S.3.3 Safety Needs

Between 1986 and 1990, there were 165 reported accidents on Palani Road. Kealakehe Parkway will divert traffic from Palani Road, and because of its superior geometrics, Kealakehe Parkway will be safer than Palani Road for the types and volumes of traffic anticipated.

S.3.4 Economic Development Needs

West Hawaii is one of the fastest growing areas in the State of Hawaii. Population growth and urban development is likely to continue, particularly in the Kailua-Kona area in the North Kona District. Kailua-Kona, a designated subregional planning area, is envisioned by both the County and State of Hawaii as the location of substantial

future urban development. Most of this growth is expected to be generated by expansion of the resort industry in the coastal areas of South Kohala and North Kona, creating an increased demand for new housing, schools, shopping areas, and parks.

In conformance with these governmental expectations of future growth, several large-scale development projects in the vicinity of Kealahou Parkway have been announced. Most notably, the HFDC is currently planning to construct the Villages of La'i'opua, a multi-use project which will increase the population of the area by approximately 14,200 people upon completion.

In addition to the Villages of La'i'opua, several other large projects are proposed for the region. These include a West Hawaii branch of the State university (with associated housing and other land uses); development of the Queen Liliuokalani Trust lands; development plans for Department of Hawaiian Home Lands; development plans for Palani Ranch; and expansion of the Kaloko Industrial Park.

The U.S. National Park Service is also developing the Kaloko-Honokohau National Historic Park on lands west (makai) of Queen Kaahumanu Highway and north of Honokohau Harbor. The Kaloko-Honokohau National Historic Park has been established to further the preservation, interpretation, and perpetuation of traditional native Hawaiian activities and culture. The Kaloko-Honokohau National Historic Park is expected to be a major regional attraction which will generate traffic.

S.4 SUMMARY OF ALTERNATIVES CONSIDERED AND IDENTIFICATION OF THE PREFERRED ALTERNATIVE

The No Build alternative, one transportation system management (TSM) and public transit alternative, improvements to existing roadway facilities, and 14 build alternatives have been considered. The build alternatives are numbered 1 through 11, and also include Alternatives 6A, 9A, and 9B.

The No Build alternative is addressed in this final EIS.

The TSM and public transit alternative has been eliminated from further consideration (see Section 2.2.1.2.1).

Evaluation criteria were used to screen the build alternatives. These criteria were:

- consistency with State and County regional plans;
- conformance to the State Route System;
- design speed of 60 km/h (40 mph);
- minimum radius of not less than 135 meters (443 feet);
- maximum grade of not more than 11 percent;
- residences directly affected;
- religious, recreational or educational facilities affected;
- impact on botanical sites; and
- impact on archaeological resources.

Results of early investigations indicated that Alternatives 6A and 8 had the fewest negative impacts, and they were therefore selected initially as the two alternatives to be addressed in more detail in the draft EIS.

However, after a botanical survey and historic and archaeological field reconnaissance was performed along the alignments of Alternatives 6A and 8, it became apparent that these alignments would need to be further refined, and that more detailed botanical and archaeological investigations were required. Alternatives 10 and 11 were then developed as improvements to Alternatives 6A and 8, and Alternatives 10 and 11 were selected for detailed analysis in the draft EIS.

Alternative 11 has been identified as the Preferred Alternative for the completing segment of Kealakehe Parkway. This alternative will be a four-lane State highway extension of Mamalahoa Highway, joining the highway just south of the Palani Road/Old Mamalahoa Highway Junction. It will extend 4.0 kilometers (2.5 miles) in the east-west (mauka-makai) direction and connect with the uppermost part of the previously constructed portion of Kealakehe Parkway, located within the HFDC's Villages of La'i'opua (see Figure S-1).

The identification of Alternative 11 as the Preferred Alternative was based on three factors: potential impacts on endangered and rare species, potential impacts on archaeological resources and cost.

The immediate vicinity of Kealakehe Parkway contains archaeological resources and rare plant species. The level of impact on these resources is minimized by identifying

Alternative 11 over Alternative 10. This determination was made in consultation with the U.S. Department of the Interior, Office of the Secretary, U.S. Fish and Wildlife Service (FWS), and the State Historic Preservation Office. The determinations were made in conformance with Section 106 of the National Historic Preservation Act of 1966, Section 4(f) of the Department of Transportation Act of 1966, and Section 7 of the Endangered Species Act of 1973. In addition, Alternative 11 will be approximately \$6 million less expensive to construct than Alternative 10. This difference in cost is due to the amount of fill and excavation required for Alternative 10.

Although Alternative 11 has been identified as the Preferred Alternative, formal selection of the Preferred Alternative is not made until the Record of Decision (ROD) is issued.

Further discussion is provided in Chapter 4.0.

S.5 IMPACTS AND MITIGATION

Adverse and positive impacts are expected as a result of the completion of Kealakehe Parkway. Adverse impacts will be mitigated wherever possible and offset by project benefits.

S.5.1 Summary of Environmental Impacts and Mitigation

A matrix comparing the construction period and long-term impacts of the No Build, Alternative 10 and the Preferred Alternative is found in Table S-1. A summary of mitigation measures for each adverse impact is also provided.

S.5.2 Short-Term Construction Period Impacts

Short-term construction period impacts include the generation of fugitive dust, temporary disruptions to the flow of traffic along Mamalahoa Highway/Palani Road, noise and vibration from construction activities, interference with agricultural activities in the construction zone, conversion of vegetated areas to a transportation use, impacts on archeological resources, and impacts on endangered and threatened and candidate species.

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

Discipline	No Build Alternative	Alternative 10	Preferred Alternative
TRAFFIC	<p><u>Construction Impacts:</u> None.</p> <p><u>Long-Term Impacts:</u> Continued Levels-of-Service of E and F (heavy traffic delays and congestion).</p> <p><u>Mitigation:</u> None required.</p>	<p><u>Construction Impacts:</u> Disruption to traffic at the Mamalaha Highway/Palani Road intersection. Interference with access to six residential units on Palani Ranch property.</p> <p><u>Long-Term Impacts:</u> Significantly improves vehicular capacity. Provides a missing link in the State Route System. Improves traffic circulation and access throughout area. Improves safety. Improves level of service.</p> <p><u>Mitigation:</u> Maintenance of traffic plan would be developed for implementation during construction. Detour road would be constructed; access to six residential units would be maintained.</p>	<p><u>Construction Impacts:</u> Similar to Alternative 10.</p> <p><u>Long-Term Impacts:</u> Similar to Alternative 10.</p> <p><u>Mitigation:</u> Similar to Alternative 10.</p>
AGRICULTURAL ACTIVITIES	<p><u>Construction Impacts:</u> None.</p> <p><u>Long-Term Impacts:</u> None.</p> <p><u>Mitigation:</u> None Required.</p>	<p><u>Construction Impacts:</u> Agricultural activity would be impaired within the construction zone. Construction could affect access to adjacent agricultural areas.</p> <p><u>Long-Term Impacts:</u> Approximately 26 hectares (64 acres) of agricultural land would be converted to transportation use.</p> <p><u>Mitigation:</u> Stock-proof fencing around construction areas and cattle crossings would be provided. <u>Water infrastructure</u> and access to existing jeep roads would be maintained. Affected fences and stone walls would be restored and repaired.</p>	<p><u>Construction Impacts:</u> Similar to Alternative 10.</p> <p><u>Long-Term Impacts:</u> Similar to Alternative 10.</p> <p><u>Mitigation:</u> Similar to Alternative 10.</p>
LAND USE	<p><u>Construction Impacts:</u> None.</p>	<p><u>Construction Impacts:</u> Would require the relocation of one residence.</p>	<p><u>Construction Impacts:</u> Similar to Alternative 10.</p>

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

<u>Discipline</u>	<u>No Build Alternative</u>	<u>Alternative 10</u>	<u>Preferred Alternative</u>
LAND USE (cont.)	<u>Long-Term Impacts.</u> None.	<u>Long-Term Impacts.</u> A new transportation corridor would be placed in proximity to existing residential areas. No long-term impacts to land use trends and plans. Would be supportive of development projects in the vicinity. One residence displaced.	<u>Long-Term Impacts.</u> Similar to Alternative 10.
	<u>Mitigation.</u> None required.	<u>Mitigation.</u> Provide relocation assistance consistent with the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, as amended.	<u>Mitigation.</u> Similar to Alternative 10.
<u>CUMULATIVE AND SECONDARY IMPACTS</u>	<u>Construction Impacts.</u> None.	<u>Construction Impacts.</u> None.	<u>Construction Impacts.</u> None.
	<u>Long-Term Impacts.</u> Present and future actions in project area can have severe cumulative impacts to infrastructure and the environment, if unmitigated.	<u>Long-Term Impacts.</u> Cumulative impacts similar to the No Build Alternative. Can cause induced development in adjacent parcels and its concomitant environmental and social impacts.	<u>Long-Term Impacts.</u> Similar to Alternative 10.
	<u>Mitigation.</u> None proposed.	<u>Mitigation.</u> No mitigation proposed for cumulative impacts. To mitigate secondary development impacts, access to adjacent parcels will not be provided as part of this project.	<u>Mitigation.</u> Similar to Alternative 10.
SOCIAL AND ECONOMIC	<u>Construction Impacts.</u> None.	<u>Construction Impacts.</u> The detour road would enclose a six-unit residential area and be close to another existing residential area.	<u>Construction Impacts.</u> Similar to Alternative 10.
	<u>Long-Term Impacts.</u> None.	<u>Long-Term Impacts.</u> A new transportation corridor would be placed in proximity to existing residential areas.	<u>Long-Term Impacts.</u> Similar to Alternative 10.
	<u>Mitigation.</u> None required.	<u>Mitigation.</u> Access to existing residences would be maintained. Following construction, a portion of the detour road to remain in place to facilitate access to the six-unit residential area.	<u>Mitigation.</u> Similar to Alternative 10.

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

Discipline	No Build Alternative	Alternative 10	Preferred Alternative
AIR QUALITY	<u>Construction Impacts.</u> None	<u>Construction Impacts.</u> Fugitive dust from construction activities and increase in CO concentrations from construction equipment and traffic delays. <u>Long-Term Impacts.</u> No violation of the federal and State 1- and 8-hour carbon monoxide standards are predicted adjacent to the Kealahou Parkway corridor. <u>Mitigation.</u> During construction employ fugitive dust control measures such as water spraying to control dust; covering trucks when hauling materials; and revegetating any disturbed land not used.	<u>Construction Impacts.</u> Similar to Alternative 10. <u>Long-Term Impacts.</u> Similar to Alternative 10. <u>Mitigation.</u> Similar to Alternative 10.
NOISE	<u>Construction Impacts.</u> None. <u>Long-Term Impacts.</u> None.	<u>Construction Impacts.</u> Increased noise and vibrations from construction equipment and possibly blasting. Increased ambient noise levels due to traffic diverted from Mamalahoa Highway/ Palani Road onto the detour road. <u>Long-Term Impacts.</u> Would increase noise levels and exceed NAC at one sensitive receptor, two units of a six-unit residential area enclosed by the detour road. Noise levels at 7 other sensitive receptors would not violate NAC. <u>Mitigation.</u> A noise wall with visual mitigation would be provided beside the roadway at the location where noise levels would otherwise exceed NAC.	<u>Construction Impacts.</u> Similar to Alternative 10. <u>Long-Term Impacts.</u> Similar to Alternative 10; however, the proposed high school and neighborhood parks are predicted to experience slightly more noise with the Preferred Alternative. <u>Mitigation.</u> Similar to Alternative 10.
WATER RESOURCES	<u>Construction Impacts.</u> None. <u>Long-Term Impacts.</u> None.	<u>Construction Impacts.</u> Potential impacts would be related to erosion from disturbed areas. <u>Long-Term Impacts.</u> Since there are no surface water bodies or wetlands along the project alignment, no long-term impacts are expected. Groundwater impacts would be minimal.	<u>Construction Impacts.</u> Similar to Alternative 10. <u>Long-Term Impacts.</u> Similar to Alternative 10.

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

Discipline	No Build Alternative	Alternative 10	Preferred Alternative
WATER RESOURCES (cont.)	<u>Mitigation</u> . None required.	<u>Mitigation</u> . Erosion would be mitigated by the use of Best Management Practices, approved by DOH before construction begins. A landscaping program would also be implemented.	<u>Mitigation</u> . Similar to Alternative 10.
GEOLOGY, PHYSIOGRAPHY, AND SITE CONTAMINATION	<u>Construction Impacts</u> . None	<u>Construction Impacts</u> . Grading would affect the landform within the project's construction zone. Accidents during construction could release hazardous materials.	<u>Construction Impacts</u> . Similar to Alternative 10.
	<u>Long-Term Impacts</u> . None.	<u>Long-Term Impacts</u> . Embankments could affect drainage patterns in the area.	<u>Long-Term Impacts</u> . Similar to Alternative 10.
	<u>Mitigation</u> . None Required.	<u>Mitigation</u> . Impacts would be mitigated through a roadway design that preserves existing contours as much as possible. Cuts and fills would be balanced. If hazardous spills occur, they would be handled in accordance with applicable requirements.	<u>Mitigation</u> . Similar to Alternative 10.
VOLCANOLOGY AND EARTHQUAKES	<u>Construction Impacts</u> . None.	<u>Construction Impacts</u> . None.	<u>Construction Impacts</u> . None.
	<u>Long-Term Impacts</u> . None.	<u>Long-Term Impacts</u> . The Parkway would provide an evacuation route for residents and access for emergency vehicles and supplies.	<u>Long-Term Impacts</u> . Similar to Alternative 10.
	<u>Mitigation</u> . None Required.	<u>Mitigation</u> . None required.	<u>Mitigation</u> . Similar to Alternative 10.
FLORA	<u>Construction Impacts</u> . None.	<u>Construction Impacts</u> . Approximately 26 hectares (64 acres) of vegetation would be cleared for the Parkway.	<u>Construction Impacts</u> . Similar to Alternative 10.
	<u>Long-Term Impacts</u> . None.	<u>Long-Term Impacts</u> . No additional impact after construction.	<u>Long-Term Impacts</u> . Similar to Alternative 10.

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

Discipline	No Build Alternative	Alternative 10	Preferred Alternative
FLORA (cont.)	<u>Mitigation</u> . None required.	<u>Mitigation</u> . Impacts would be minimized by roadway landscaping.	<u>Mitigation</u> . Similar to Alternative 10.
FAUNA	<u>Construction Impacts</u> . None.	<u>Construction Impacts</u> . May affect some existing terrestrial fauna through habitat removal. However, the faunal community is characterized by exotic and feral species common in the area.	<u>Construction Impacts</u> . Similar to Alternative 10.
	<u>Long-Term Impacts</u> . None.	<u>Long-Term Impacts</u> . No additional impact after construction.	<u>Long-Term Impacts</u> . Similar to Alternative 10.
	<u>Mitigation</u> . None required.	<u>Mitigation</u> . Project landscaping would reestablish some habitat areas.	<u>Mitigation</u> . Similar to Alternative 10.
ENDANGERED SPECIES	<u>Construction Impacts</u> . None.	<u>Construction Impacts</u> . Would affect endangered Loulu Palm and Ko'oko'olau, a species that is vulnerable, but not yet formally proposed as an endangered species.	<u>Construction Impacts</u> . Would affect endangered Loulu Palm (<i>Pritchardia affinis</i>). Potential bird impacts similar to Alternative 10.
	<u>Long-Term Impacts</u> . None.	<u>Long-Term Impacts</u> . Could indirectly affect a population of uhihi trees (<i>Caesalpinia kavatensis</i>), an endangered species.	<u>Long-Term Impacts</u> . No additional impact after construction.
	<u>Mitigation</u> . None required.	<u>Mitigation</u> . Implementation of translocation and fire protection plans; shielding of roadway lighting to minimize impacts to seabirds.	<u>Mitigation</u> . Similar to Alternative 10.
SOLID AND HAZARDOUS WASTE	<u>Construction Impacts</u> . None.	<u>Construction Impacts</u> . Minimal, since excavated material is expected to be free of contamination and would be used elsewhere on the project as fill material.	<u>Construction Impacts</u> . Similar to Alternative 10.
	<u>Long-Term Impacts</u> . None.	<u>Long-Term Impacts</u> . Solid wastes would not be generated by the operation of the Parkway.	<u>Long-Term Impacts</u> . Similar to Alternative 10.

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

Discipline	No Build Alternative	Alternative 10	Preferred Alternative
SOLID AND HAZARDOUS WASTE (cont.)	<u>Mitigation</u> . None required.	<u>Mitigation</u> . Hazardous materials involved in construction would be managed in accordance with all applicable requirements. Accidents, if any, would be reported to the Hazard Evaluation and Emergency Response Officer.	<u>Mitigation</u> . Similar to Alternative 10.
HISTORIC AND ARCHAEOLOGICAL RESOURCES	<u>Construction Impacts</u> . None. <u>Long-Term Impacts</u> . None.	<u>Construction Impacts</u> . No historic sites found. <u>Would have an adverse effect on 67 archaeological sites.</u> <u>Long-Term Impacts</u> . No additional impact after construction.	<u>Construction Impacts</u> . No historic sites found. <u>Would have an adverse effect on 54 archaeological sites.</u> <u>Long-Term Impacts</u> . Similar to Alternative 10.
PARKLAND	<u>Mitigation</u> . None required. <u>Construction Impacts</u> . None.	<u>Mitigation</u> . Data recovery, burial treatment, and mitigation plans would be prepared and implemented prior to construction. Details contained in a Section 106 Memorandum of Agreement. <u>Construction Impacts</u> . None.	<u>Mitigation</u> . Similar to Alternative 10. <u>Construction Impacts</u> . Similar to Alternative 10.
VISUAL AND AESTHETIC	<u>Long-Term Impacts</u> . None. <u>Mitigation</u> . None required. <u>Construction Impacts</u> . None. <u>Long-Term Impacts</u> . None.	<u>Long-Term Impacts</u> . Access to nearby Katoko-Honokohau National Historic Park would be enhanced. <u>Mitigation</u> . None required. <u>Construction Impacts</u> . Some visual disruption during construction. <u>Long-Term Impacts</u> . Highly localized but severe adverse impacts to some residents immediately adjacent to future roadway. Minor impact for those not immediately adjacent to the roadway. Viewshed would be created for Parkway users traveling west (makai).	<u>Long-Term Impacts</u> . Similar to Alternative 10. <u>Mitigation</u> . Similar to Alternative 10. <u>Construction Impacts</u> . Similar to Alternative 10. <u>Long-Term Impacts</u> . Similar to Alternative 10.
	<u>Mitigation</u> . None required.	<u>Mitigation</u> . A landscaping program would be implemented.	<u>Mitigation</u> . Similar to Alternative 10.

S.5.3 Long-Term Impacts

Potential long-term environmental impacts of the proposed project include:

- Land Use. The completion of Kealakehe Parkway will convert nearly 26 hectares (64 acres) of open space presently in agricultural use to a paved roadway. These impacts will be localized and acceptable within a regional framework since the project will affect only 0.0004 percent of the total agricultural acreage in the North Kona District. The soil types affected are not highly ranked for agricultural purposes. Both alternatives will require the relocation of one residence. A transportation corridor will be placed in proximity to some existing residential areas. The project will be supportive of development projects in the vicinity without modifying current land use trends and plans.
- Social and Economic. Social and economic impacts will be mostly beneficial, including the expenditure locally of construction funds and enhanced access in the region which will contribute to overall economic activity. Residential access to a small number of homes at the eastern (mauka) terminus of the project will be permanently rerouted to the detour road. The project will, however, displace one residence. No businesses will be displaced.
- Infrastructure and Public Facilities. The impacts of both alternatives will be beneficial, particularly on the roadway system. The proposed action will:
 - relieve traffic congestion on Palani Road;
 - establish access to and improve mobility for existing and proposed developments within the Keahole to Kailua area;
 - facilitate access to and the provision of community services; and
 - allow traffic generated by the Villages of La'i'opua and other existing and proposed Kealakehe communities to travel directly between Queen Kaahumanu Highway and Mamalahoa Highway/Palani Road.
- Air and Noise. Studies performed for this project indicate that air impacts from future traffic volumes on the proposed roadway will meet applicable standards. Noise levels, however, if not mitigated, would exceed the Noise Abatement Criteria (NAC) at a small number of homes at the eastern (mauka) terminus of the project. A noise wall would provide a substantial benefit and meets the criteria for

reasonableness and feasibility. Therefore, a noise wall with visual mitigation will be provided at the eastern (mauka) terminus of the project.

- Geology, Physiography, and Site Contamination. The proposed action will affect the landform only within the project's construction zone. Embankments could affect the drainage characteristics of the affected area. An accident on Kealakehe Parkway could result in the release of hazardous materials which would be handled in accordance with applicable requirements.
- Volcanology and Earthquakes. The proposed action will provide an evacuation route for area residents and access for emergency vehicles and supplies.
- Water Resources. Since there are no surface water bodies or wetlands within the project site, adverse impacts to surface waters are not expected. Groundwater impacts are also expected to be minimal.
- Terrestrial Flora. Approximately 26 hectares (64 acres) of vegetational communities will be cleared for the roadway. The types of vegetational communities which will be affected are abundant in the region.
- Terrestrial Fauna. The faunal community which will be affected is characterized by exotic and feral species common in the area.
- Endangered and Threatened Species. Both the Preferred Alternative and Alternative 10 will directly affect two endangered Lulu Palms (*Pritchardia affinis*). Alternative 10 would also directly affect a population of Ko'oko'ulau (*Bidens micranthra ssp. ctenophylla*), a "Candidate 1" plant species, and indirectly affect two endangered Uhihi trees (*Caesalpinia kawaiensis*). Kealakehe Parkway could have secondary impacts on the Ko'oko'ulau and Uhihi trees.
- Historic and Archaeological Resources. The Preferred Alternative will affect 54 archaeological sites, including one burial and four trails. Alternative 10 would affect 67 sites. A Memorandum of Agreement as required by Section 106 of the National Historic Preservation Act of 1966, Section 4(f) of the Department of Transportation Act of 1966, and Chapter 6E, HRS, has been executed and stipulates the resources affected and the mitigation process (see Appendix C).

- Parklands. The proposed action will have no impact on parklands, including Kaloko-Honokohau National Historic Park, other than to enhance accessibility.
- Visual Resources. Kealakehe Parkway and the detour road will permanently block existing western (makai) vistas of eleven residences. For those not immediately adjacent to the roadway, however, visual impacts will be minimal.

S.5.4 Cumulative and Secondary Impacts

A cumulative impact is the impact on the environment produced by the proposed action, when added to other past, present, and reasonably foreseeable future actions regardless of proponent.

Other actions, such as a University of Hawaii branch, HFDC's Villages of La'i'opua, new schools, and other infrastructure projects, are proposed for the area near Kealakehe Parkway. If unmitigated, the cumulative impacts of these and other actions in the study area have the potential to be severe, affecting such areas as:

- transportation, water supply and other infrastructure;
- archaeological resources; and
- endangered and threatened species.

However, other actions will be completed regardless of whether the proposed action is constructed. Therefore, since development plans for the area are not predicated on the completion of Kealakehe Parkway, cumulative impacts will be very similar between the No Build and Build scenarios.

Secondary impacts are impacts that have the potential to occur later in time or farther removed in distance, but are still reasonably foreseeable. The construction of Kealakehe Parkway has the potential to induce development in vacant and unplanned areas adjacent to the Parkway. Furthermore, environmental and social impacts can occur as a result of the induced development. Therefore, the potential secondary impacts of the proposed action are induced development and its concomitant environmental and social impacts.

S.5.5 Mitigation Commitments

This section summarizes commitments to minimize adverse environmental and social impacts. Positive and minor adverse impacts do not require mitigation. Additional details of the mitigation measures will be developed during the project's design phase (e.g., agriculture and noise mitigation).

S.5.5.1 Short-Term Mitigation Measures

Temporary construction impacts will be mitigated by the following measures. Additional mitigation measures may be implemented if construction activity produces greater than anticipated impacts.

- Traffic. A maintenance of traffic plan will be developed during the design phase. This plan will include the detour road that will convey through traffic on Mamalahoa Highway/Palani Road during construction. The maintenance of traffic plan will also address access to parcels adjacent to construction activities, such as the residential area located west (makai) of Palani Road on lands owned by Palani Ranch.

- Air Quality. Fugitive dust control measures will include:
 - minimizing land disturbance;
 - using watering trucks and covered trucks;
 - stabilizing the surface of dirt piles;
 - minimizing unnecessary vehicular and machinery activities;
 - using windbreaks effectively;
 - limiting vehicular paths and stabilizing temporary roads;
 - grading roads and parking areas adjacent to the construction site to prevent dirt from washing onto paved roadways;
 - restoring any disturbed land not used to original conditions;
 - removing unused materials;
 - removing dirt piles; and
 - restoring all vehicular paths to original conditions and preventing future off-road vehicular activities.

- Noise and Vibration. Measures to minimize construction noise impacts will include limiting construction activities to daylight hours and requiring construction

equipment to have mufflers in good working order. Should blasting be required, it would be conducted in accordance with all applicable standards.

- Agricultural Activities. During construction:
 - stock-proof fencing will be placed around the construction site to safeguard and secure livestock;
 - cattle crossings and access to existing jeep roads will be provided;
 - existing water distribution infrastructure will be maintained as much as possible;
and
 - fences and stone walls affected by construction will be restored and repaired.

Additional details of agricultural mitigation will be developed during project design.

- Water Resources. Erosion during construction will be mitigated by the use of Best Management Practices (BMPs) established before construction begins, and a landscaping program to be implemented in conjunction with construction. Sanitary waste generated during construction will be collected from portable units as required.
- Endangered and Threatened Species. A fire plan to reduce the loss of vulnerable species and habitat in the event of a fire, and a translocation plan for the endangered Loulu Palm (*Pritchardia affinis*) and Uhiuhi Tree (*Caesalpinia kavaiensis*) will be prepared and implemented for the Preferred Alternative and Alternative 10. Roadway luminaries will be designed to minimize impacts on migrating birds.
- Historic and Archaeological Resources. Approved plans addressing data recovery, interim and long-term preservation, and burial treatment will be developed and implemented prior to roadway construction. Plans will be discussed with the SHPO, the Hawaii Island Burial Council, the Advisory Council on Historic Preservation, the Office of Hawaiian Affairs, and other affected parties. Plans will be prepared in accordance with the Section 106 Memorandum of Agreement (MOA).

S.5.5.2 Long-Term Mitigation Measures

Long-term adverse impacts will be mitigated by the following measures:

- Land Use and Agricultural Activities. Relocation assistance consistent with the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, as amended, will be provided for the one residence that will have to relocate. Other mitigation measures described in this section will lessen the impact of the roadway on adjacent residential areas. Measures to mitigate impacts on ranching and other agricultural activities include:
 - provision of stock-proof fencing;
 - access from Kealakehe Parkway to existing jeep roads;
 - maintenance or replacement of affected east-west (mauka-makai) water lines;
 - maintenance of existing paddocks, corrals, water systems, and roads;
 - preservation of beehives and orchard-related activities; and
 - maintenance of access to existing ranch employee houses.
- Secondary Development. The project will not include the planning or construction of intersections that would provide access to adjacent parcels.
- Social and Economic Activity. After construction, the detour road will remain in place to facilitate residential access.
- Infrastructure and Public Facilities. Kealakehe Parkway is itself a measure to mitigate existing and future traffic conditions.
- Noise. A noise wall will provide a substantial benefit and meets the criteria for reasonableness and feasibility. Therefore, a noise wall with visual treatment will be provided at the eastern (mauka) terminus of the project where noise levels would otherwise exceed the NAC in 2015.
- Geology, Physiography, and Site Contamination. Impacts to the physiography of the area will be mitigated through a roadway design that preserves existing contours as much as possible. Cut and fill will be balanced to the maximum degree practical.

- Volcanology and Earthquakes. Kealakehe Parkway is itself a mitigation measure for volcanic and earthquake hazards in the area. In case of emergency, the Parkway could be used as an evacuation route.
- Terrestrial Flora. Impacts to the terrestrial flora will be reduced by roadway landscaping.
- Terrestrial Fauna. Project landscaping will help mitigate impacts to the regional fauna.
- Endangered and Threatened Species. After roadway construction, implementation of mitigation measures will continue, including on-going activities associated with the translocation and fire plans. In addition, roadway lighting will be designed to minimize the effect of light spread on the migratory patterns of the endangered Hawaiian petrel (*Pterodroma phaeopygia sandwichensis*), the threatened Newell's shearwater (*Puffinus auricularis*), and the "Candidate 1" band-rumped storm petrel (*Oceanodroma castro cryptoleucura*).
- Historic and Archaeological Resources. The FHWA and SDOT will ensure that the provisions of the MOA are implemented to mitigate impacts on the archaeological sites affected by Kealakehe Parkway.
- Visual and Aesthetic Resources. Adverse visual impacts created by embankments will be mitigated by landscaping.

S.6 MAJOR ACTIONS PROPOSED BY GOVERNMENTAL AGENCIES IN THE PROJECT VICINITY AND COMPATIBILITY WITH LAND USE PLANS AND POLICIES

Kealakehe Parkway will be consistent with governmental plans, policies and projects in the area. Specifically:

- The Hawaii County General Plan (November 1989) and the Keahole to Kailua Development Plan (April 1991) anticipated major growth in the area surrounding the Kealakehe Parkway corridor. Among the larger of these developments is the HFDC's Villages of La'i'opua, a project which is expected to increase the population by 14,200 people over the next 20 years. Other projects of similar scale

are proposed for the general area. Proposed developments are discussed in greater detail in Section 3.1.3.

- The State land use designation for some large parcels within the Keahole to Kailua area has been changed from Agricultural to Urban, including State-owned lands supporting the development of the Villages of La'i'opua. The County land use designation is also Urban.
- Kealakehe Parkway was identified in the State's Transportation Functional Plan (1991), the Island of Hawaii Long Range Highway Plan and the Keahole to Kailua Development Plan (April 1991) as an important, high priority, necessary improvement to the road network in this area. Kealakehe Parkway will also be consistent with the Hawaii State Plan (June 1991) and its priority guidelines.
- The County has just completed a new waste water treatment plant in anticipation of population growth in the area.
- SDOT is planning the widening of Queen Kaahumanu Highway to better serve existing and future transportation demand in the area.

The relationship of Kealakehe Parkway to land use plans, policies and controls for the affected area is described in more detail in Section 4.1.3.

S.7 UNRESOLVED ISSUES

Environmental and construction permits remain to be acquired.

S.8 NECESSARY APPROVALS AND PERMITS

The following permits or approvals may be required prior to construction of Kealakehe Parkway. Additional permits and approvals may also be necessary.

State

- DLNR, Hawaii Island Burial Council - Burial Treatment Plan Approval
- Department of Health - National Pollutant Discharge Elimination System (NPDES) Permit (storm water discharges from a construction site)

- Department of Health - Noise Permit

County

- Department of Public Works - Permit for Excavation of Highway
- Department of Public Works - Grading, Grubbing, Stockpiling and Excavation Permit

CHAPTER 1.0
PURPOSES OF AND NEED FOR ACTION

CHAPTER 1.0

PURPOSE OF AND NEED FOR ACTION

1.1 BACKGROUND

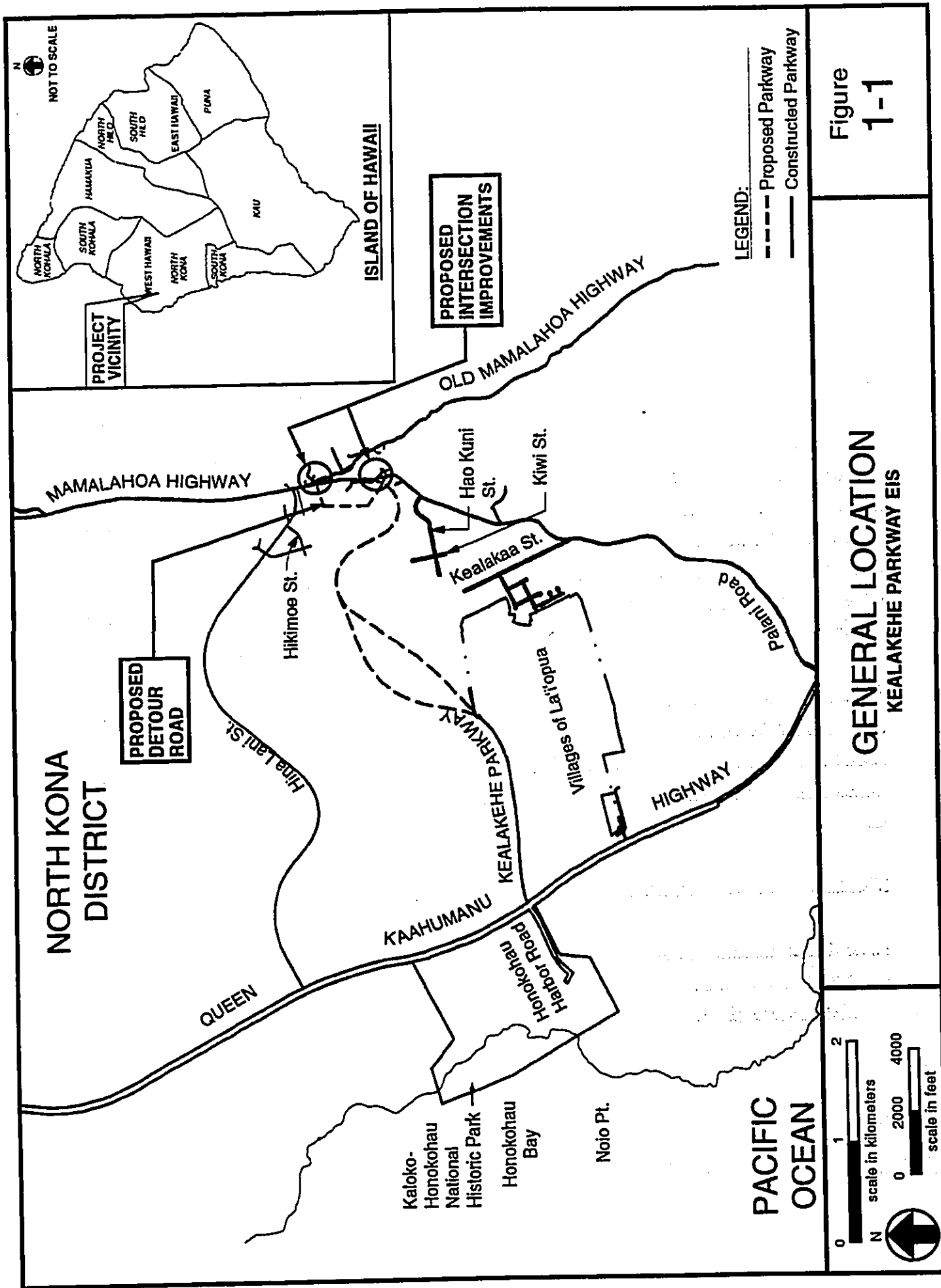
1.1.1 General Description Of The Project

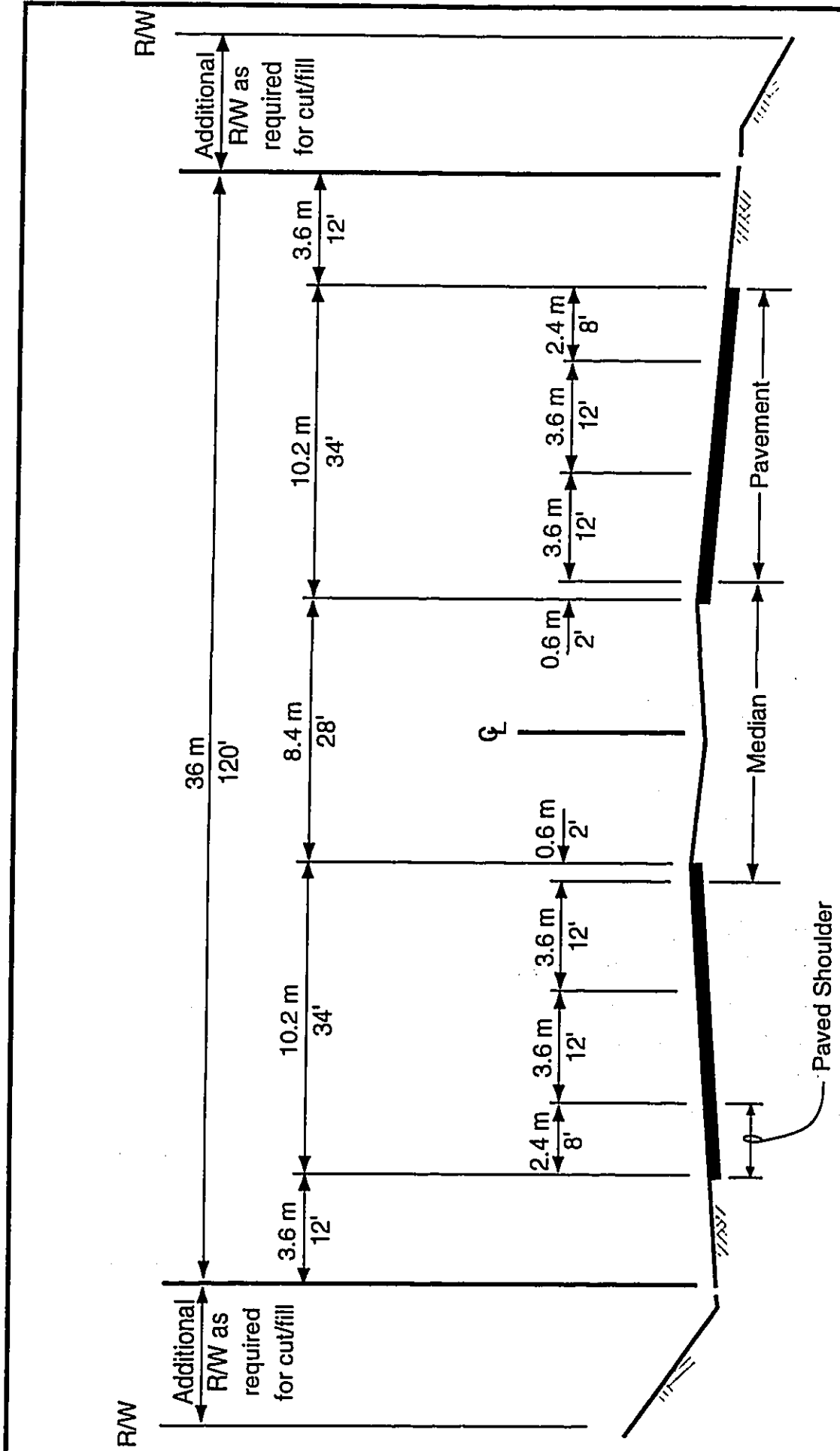
The proposed Kealakehe Parkway will be a four-lane urban arterial in the North Kona District of Hawaii County, Hawaii, extending east (mauka) from Queen Kaahumanu Highway and Honokohau Harbor Road to a point near the intersection of Mamalahoa Highway and Old Mamalahoa Highway (see Figure 1-1). As shown in Figure 1-1, the western portion of the Parkway was completed by the State of Hawaii Housing Finance and Development Corporation (HFDC) in August, 1995 as part of their Villages of La'i'opua project. The State of Hawaii Department of Transportation (SDOT) and the Federal Highway Administration (FHWA) propose to extend the Parkway eastward (mauka) to Mamalahoa Highway.

The width of a typical section of the roadway will be 36 meters (120 feet) (see Figure 1-2). (Roadway metrication standards have been based on A Policy on Geometric Design of Highway and Streets (1990)). The necessary right-of-way will be wider, depending on the specifics of the topography and the required roadway profile at that point.

Other elements of the proposed action include:

- a detour road at the eastern (mauka) terminus of Kealakehe Parkway; and
- construction of new or modified intersections of Mamalahoa Highway, Old Mamalahoa Highway, Palani Road and Kealakehe Parkway.





Note: Roadway metrication standards based on A Policy on Geometric Design of Highway and Streets, 1994

Figure 1-2

TYPICAL SECTION
KEALAKEHE PARKWAY EIS

NOT TO SCALE

1.1.2 History

An east-west (mauka-makai) road extending from Mamalahoa Highway to Queen Kaahumanu Highway has been included in roadway and land use plans since November 1989. However, more detailed planning of the Parkway was not initiated until priority was placed on addressing the existing and future housing needs of West Hawaii. Because of projected population growth in this area, there is an acute need for affordable housing.

In response to this need, the HFDC developed a project called the Villages of La'i'opua, or "Kealakehe Planned Community." The Villages of La'i'opua is intended to implement the Governor's Comprehensive State Housing Plan in West Hawaii. The primary objective of this planned community is to provide affordable housing units in the West Hawaii region. Sixty percent of the units developed will be targeted to those meeting the income criteria for affordable housing, and 40 percent of the housing units will be sold at market prices. Additional objectives of the planned community include the provision of necessary infrastructure and facilities (including roadways, sewers and a new high school) to support the proposed residential units, and also regional needs. The Villages of La'i'opua roadway system includes the constructed portion of Kealakehe Parkway. However, because the Kealakehe Parkway corridor extends beyond the limits of the HFDC project, HFDC was unable to complete Kealakehe Parkway.

Therefore, for Kealakehe Parkway to fully achieve its goals, including the enhancement of access to Kealakehe High School (which is scheduled to open in September, 1997 and is within the Villages of La'i'opua), Kealakehe Parkway will need to be extended from the HFDC property line to Mamalahoa Highway/Palani Road. The project addressed in this final EIS is this completing roadway segment. The HFDC portion of Kealakehe Parkway was completed in August 1995. Therefore, the roadway segment now proposed will connect a previously constructed segment of Kealakehe Parkway to Mamalahoa Highway, thereby establishing a through route.

In September 1990 the Governor accepted the Kealakehe Planned Community Final Environmental Impact Statement in accordance with Chapter 343, Hawaii Revised Statutes (HRS) and the rules and regulations of the State of Hawaii Office of Environmental Quality Control (OEQC). This environmental impact statement (EIS)

identified and assessed the environmental and social impacts that could result from the Kealakehe Planned Community, including the roadway infrastructure that the HFDC proposed to construct as part of the planned community. Kealakehe Parkway was one of two proposed regional arterial roadways described in the EIS.

With the environmental process completed for the HFDC's planned community and associated infrastructure, the SDOT then initiated a State-funded feasibility study and the environmental review process for the completing segment of Kealakehe Parkway to Mamalahoa Highway/Palani Road. Since federal funding was later obtained for this completing segment, both State and federal environmental procedures (pursuant to the National Environmental Policy Act (NEPA) 42 U.S.C. 4332 (2)(c), Section 4(f) of the Department of Transportation Act (DOT) 49 U.S.C. 303, and Chapter 343, Hawaii Revised Statutes (HRS)) are being followed.

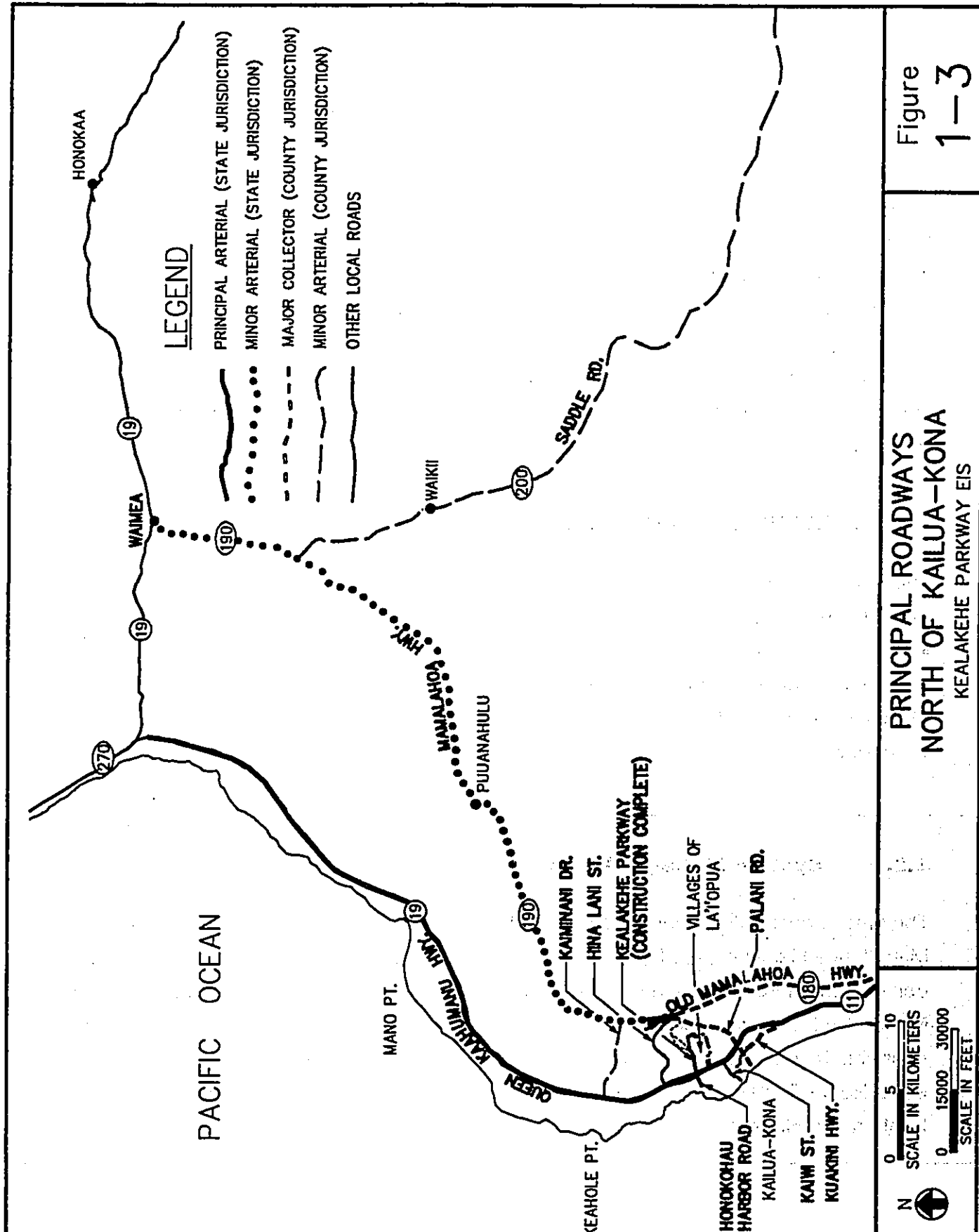
1.2 PURPOSE OF AND NEED FOR THE PROJECT

The purpose of the project ("the proposed action") is to address needs and demands of the following types:

- system linkage needs;
- existing transportation demand and capacity needs;
- safety needs; and
- economic development needs.

1.2.1 System Linkage Needs

The area is presently served by two State highways: Queen Kaahumanu Highway and Mamalahoa Highway (see Figure 1-3). Although Queen Kaahumanu Highway extends continuously through the area, the State Route System presently terminates where Mamalahoa Highway becomes Palani Road. Palani Road, a County roadway, connects Mamalahoa Highway with the town of Kailua-Kona. To provide a continuous State Route System, a State roadway that connects Mamalahoa Highway to Queen Kaahumanu Highway is needed.



1.2.2 Existing Transportation Demand and Capacity Needs

Existing traffic is frequently congested on several of North Kona's roadway segments. As shown in Tables 1-1a and 1-1b, several roadway segments experience Levels-Of-Service of E or F during the morning and/or evening peak travel periods. (The 1985 Highway Capacity Manual defines six Levels-Of-Service, ranging from best to worst conditions, which are labeled A through F. The proposed Kealakehe Parkway is expected to achieve LOS C.) In part because of existing levels of congestion, Kealakehe Parkway has been identified in various plans, such as the Island of Hawaii Long Range Highway Plan (May 1991) and the Keahole to Kailua Development Plan (April 1991), as necessary to improve existing traffic circulation throughout the Kealakehe area.

The completion of Kealakehe Parkway, which will be designed to a higher speed than Palani Road, will provide an improved, alternative route to Palani Road for the transportation of people and goods within North Kona and between North Kona and other regions of the island. It will aid in alleviating existing traffic congestion on Palani Road by being able to convey larger volumes of traffic at higher speeds.

1.2.3 Safety Needs

Between 1986 and 1990, there were 165 reported accidents on Palani Road. Kealakehe Parkway will divert through traffic from Palani Road, and because of its superior geometrics, Kealakehe Parkway will be safer than Palani Road for the types and volumes of traffic anticipated.

1.2.4 Economic Development Needs

West Hawaii is one of the fastest growing areas in the State of Hawaii. Although the State's population only increased by 15 percent from 1970 to 1990, the population of West Hawaii tripled during this same period, increasing from 14,472 to 43,373. Population in the North Kona District alone increased 62 percent between 1980 and 1990, from 13,648 to 22,248. The number of housing units in West Hawaii increased 115 percent between 1980 and 1990.

**Table 1-1a
SELECTED EXISTING AND FUTURE NO-BUILD TRAFFIC CONDITIONS
A.M. PEAK**

Roadway Segment	Existing (1993)		Year 2015		Percent Increase
	Volume (veh/hr)	LOS	Volume (veh/hr)	LOS	
Mamalahoa Highway: between Kaiminani Dr. and Old Mamalahoa Hwy.	658	E	705	E	7.14
Palani Road: between Old Mamalahoa Hwy. and Kealakaa St.	630	E	880	F	39.68
between Kealakaa St. and Queen Kaahumanu Hwy.	445	F	550	F	23.60
Queen Kaahumanu Hwy.: south of Kaiminani Dr.	462	D	870	*B	88.31
between Honokohau Harbor Rd/ Kealakehe Pkwy and Palani Rd	214	E	400	*B	86.92

*assumes Queen Kaahumanu Highway is widened to four lanes.

**Table 1-1b
P.M. PEAK**

Roadway Segment	Existing (1993)		Year 2015		Percent Increase
	Volume (veh/hr)	LOS	Volume (veh/hr)	LOS	
Mamalahoa Highway: between Kaiminani Dr. and Old Mamalahoa Hwy.	331	D	420	E	26.89
Palani Road: between Old Mamalahoa Hwy. and Kealakaa St.	349	E	540	F	54.73
between Kealakaa St. and Queen Kaahumanu Hwy.	340	F	525	F	54.41
Queen Kaahumanu Hwy.: south of Kaiminani Dr.	815	E	1040	*B	27.61
between Honokohau Harbor Rd/ Kealakehe Pkwy and Palani Rd	449	E	680	*C	51.45

*assumes Queen Kaahumanu is widened to four lanes.

Source: Parsons Brinckerhoff, Kealakehe Parkway Feasibility Study and Environmental Impact Statement, Traffic Impact Report, November 1993.

Population growth and urban development is likely to continue in West Hawaii, and particularly in the Kailua-Kona area in the North Kona District. Kailua-Kona, a designated subregional planning area, is envisioned by both the County and State of Hawaii for substantial future urban development. For example, in the County's Land Use Pattern Allocation Guide (LUPAG) map, the region that encompasses Kealakehe Parkway is designated for urban expansion. Keahole to Kailua has been reclassified from agricultural land use to urban land use. Most of this growth is expected to be generated by expansion of the resort industry in the coastal areas of South Kohala and North Kona.

In conformance with these governmental expectations of future growth, several large-scale development projects in the vicinity of Kealakehe Parkway have been announced. Most notably, the HFDC is presently planning to construct the Villages of La'i'opua (see Figure 1-1). HFDC's project is an attempt to reduce the island's affordable housing shortage by providing over 4,000 residential dwelling units for approximately 14,200 persons within the next 20 years. The Villages of La'i'opua will accommodate a variety of non-residential uses as well, including new elementary and high schools. The high school is expected to open in September 1997. One of the most important purposes of the proposed completion of Kealakehe Parkway is to convey traffic originating at or destined for the Villages of La'i'opua, including traffic generated by the high school. Kealakehe Parkway will provide the Villages of La'i'opua with access to both Queen Kaahumanu Highway and Mamalahoa Highway/Palani Road so that the new traffic volumes associated with the Villages of La'i'opua will be accommodated without affecting the existing residential areas of Kealakehe.

In addition to the Villages of La'i'opua, several other large projects have been proposed for the region. These include a West Hawaii branch of the State university, with associated housing and other land uses; development of the Queen Liliuokalani Trust lands; development plans for Department of Hawaiian Home Lands; development plans for Palani Ranch; and expansion of the Kaloko Industrial Park.

The U.S. National Park Service is also proposing to develop the Kaloko-Honokohau National Historic Park on lands west (makai) of Queen Kaahumanu Highway and north of Honokohau Harbor. The Kaloko-Honokohau National Historic Park has been established to further the preservation, interpretation, and perpetuation of traditional

Native Hawaiian activities and culture. The Kaloko-Honokohau National Historic Park is expected to be a major regional attraction which will generate traffic.

Levels-Of-Service are already poor for many roadway segments in the area, even without the future growth that is expected. Traffic volumes will only increase as the population in the region continues to grow, producing increasing congestion. Tables 1-1a and 1-1b provide a comparison of existing and future traffic volumes. Kealakehe Parkway will help provide new capacity to convey traffic associated with future growth in the Kailua-Kona area.

1.2.5 Proposed Intersection Improvements and New Intersections

New intersections will be constructed at the eastern (mauka) terminus of Kealakehe Parkway. These intersections are necessary to accommodate the future volumes of traffic and traffic movements associated with Mamalahoa Highway, Old Mamalahoa Highway, Palani Road and Kealakehe Parkway converging within a relatively short distance of each other.

Because of projected traffic volumes expected on Kealakehe Parkway after it is completed, improvements to the intersection of Kealakehe Parkway and Queen Kaahumanu Highway will be warranted. As shown in Tables 1-2a and 1-2b, Levels-Of-Service will be E or F for several of the movements at this intersection if improvements are not made. The SDOT will improve this intersection as part of the Queen Kaahumanu widening project.

1.2.6 Detour Road

To maintain the flow of traffic during the construction of the eastern (mauka) terminus of Kealakehe Parkway, it will be necessary to construct a detour road. The detour road will convey through traffic traveling on Mamalahoa Highway, Old Mamalahoa Highway and Palani Road while the future intersections at the eastern (mauka) terminus of Kealakehe Parkway are constructed, and a portion of Palani Road is realigned. After Kealakehe Parkway opens to traffic, the detour road will remain in place to provide access to a small number of homes on Palani Ranch.

**Table 1-2a
 QUEEN KAAHUMANU HIGHWAY/KEALAKEHE PARKWAY/HARBOR
 INTERSECTION PERFORMANCE
 A.M. PEAK**

Turning Movement	Year 2015		
	Volume (veh/hr)	LOS w/o Signalization	Performance w/ Signalization
NB left-turn from Highway	70	B	(overall intersection operates at approximately LOS C or better)
SB left-turn from Highway	280	F	
Left-turn from Harbor	65	F	
Through movement from Harbor	15	F	
Right-turn from Harbor	30	A	
Left-turn from Kealakehe Pkwy	405	F	
Through movement from Kealakehe	30	F	
Right-turn from Kealakehe Pkwy	270	D	

**Table 1-2b
 P.M. PEAK**

Turning Movement	Year 2015		
	Volume (veh/hr)	LOS w/o Signalization	Performance w/ Signalization
NB left-turn from Highway	85	C	(overall intersection operates at approximately LOS C or better)
SB left-turn from Highway	350	F	
Left-turn from Harbor	65	F	
Through movement from Harbor	35	F	
Right-turn from Harbor	100	A	
Left-turn from Kealakehe Pkwy	430	F	
Through movement from Kealakehe	30	F	
Right-turn from Kealakehe Pkwy	240	D	

Source: Parsons Brinckerhoff, Kealakehe Feasibility Study and Environmental Impact Statement, Traffic Impact Report, November 1993.

1.2.7 Conclusion

The constructed portion of Kealakehe Parkway, which is limited to the Villages of La'i'opua, does not satisfy the needs identified above. Completion of Kealakehe Parkway to Mamalahoa Highway/Palani Road is needed to satisfy the system linkage, transportation demand and capacity, safety and economic development needs stated above.

**CHAPTER 2.0
ALTERNATIVES**

CHAPTER 2.0 ALTERNATIVES

2.1 INTRODUCTION

This chapter discusses the alternatives initially considered but rejected for further study; the alternatives considered in the draft EIS; and the Preferred Alternative that has been selected.

Four categories of alternatives were evaluated to determine how well they would satisfy the project purposes described in Chapter 1.0. These categories of alternatives are:

- the no action or "No Build" alternative;
- Transportation System Management (TSM) and public transit alternative;
- improvements to existing corridors, i.e., widening Palani Road or improving Hina Lani Street; and
- completing Kealakehe Parkway within the corridor that is proposed (the "build" alternatives). Fourteen alignments within the proposed corridor have been evaluated.

Section 2.2 describes those alternatives selected from the four categories above that have been eliminated from further analysis. Section 2.3 describes those alternatives selected from the categories above that are addressed in Chapter 4.0. Section 2.4 provides the project schedule and cost, and Section 2.5 describes the Preferred Alternative that has been selected and the basis for its selection.

2.2 ALTERNATIVES CONSIDERED INITIALLY BUT REJECTED FOR FURTHER STUDY

2.2.1 First-Cut Screening

A first-cut screening was performed to eliminate those alternatives that would not achieve the project purposes, or clearly had relatively high levels of environmental impact. Section 2.2.1.1 describes the evaluation criteria employed in this first cut

screening, and the alternatives eliminated from further study are described in Section 2.2.1.2.

2.2.1.1 EVALUATION CRITERIA

The first-cut screening was based on the following evaluation criteria:

- consistency with State and County regional plans;
- conformance to the State Route System;
- design speed;
- maximum grade;
- minimum horizontal radius; and
- residential parcels and public facilities affected.

Each criterion will now be discussed in more detail.

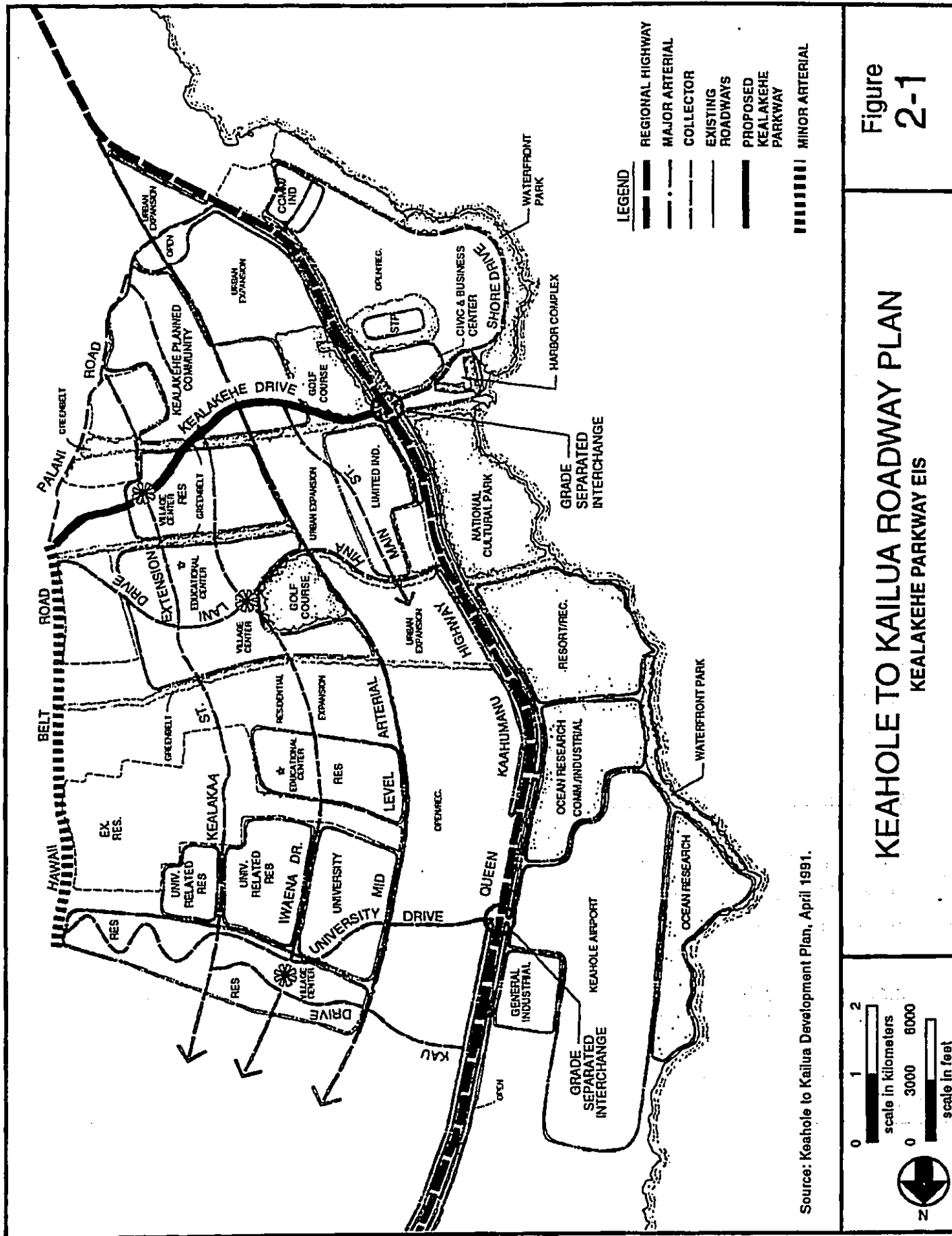
Consistency with State and County Regional Plans

The completion of Kealakehe Parkway must be consistent with State and County plans. The Keahole to Kailua Development Plan (April 1991) and the Island of Hawaii Long Range Highway Plan (May 1991) address the need for and establish an integrated system of roadways to form a surface transportation network in the North Kona region (see Figure 2-1). Kealakehe Parkway is included as one of the proposed roadways in the State and County regional plans.

Conformance to the State Route System

The State Route System is the backbone circulation system for the movement of people and goods between various regions of the island. Since roadways on the State Route System are generally higher speed facilities with greater traffic capacity, the selected alternative should conform to arterial road design standards.

Additionally, the proposed segment of Kealakehe Parkway should connect to Mamalahoa Highway in such a way as to form the through route, rather than forming the stem of a T-intersection. Connecting Kealakehe Parkway to Mamalahoa Highway as the through route will provide better traffic operations, since the higher speed facilities will form the through route.



Design Speed

The design speed of a roadway is determined by the terrain and type of facility proposed. The grade of the terrain on which the proposed Kealakehe Parkway will be constructed is relatively steep. The design speed of the proposed segment of Kealakehe Parkway is 60 km/h (40 mph), and it is anticipated that the posted speed limit will be 56 km/h (35 mph).

Maximum Grade

Maximum grade depends on the roadway classification, design speed, and terrain conditions in the area. In accordance with statewide standards for an arterial roadway, the maximum grade should not exceed 10 percent.

Minimum Horizontal Radius

The horizontal curves in a roadway alignment affect the speed at which vehicles can safely and comfortably travel on the roadway. The minimum radius is that dimension at which vehicles can comfortably maintain the posted speed limit while safely traversing a turn in the alignment. The minimum horizontal radius for an arterial roadway with a design speed of 60 km/h (40 mph) and a maximum superelevation rate of six percent is 135 meters (443 feet).

Residential Parcels and Public Facilities Affected

It is highly desirable that the proposed alignment have minimal impacts on residential areas. The proposed alignment should also minimize impacts on community facilities, including churches, parks, recreation centers, schools, clinics, and hospitals.

2.2.1.2 DESCRIPTION AND EVALUATION OF ALTERNATIVES ELIMINATED IN THE FIRST CUT

Alternatives considered but rejected in the first cut were the TSM and public transit alternative, improvements to existing corridors, and 10 of the 14 alignment alternatives proposed for the corridor within Kealakehe. These rejected alternatives will now be described, and the basis for their rejection provided.

2.2.1.2.1 TRANSPORTATION SYSTEM MANAGEMENT (TSM) AND PUBLIC TRANSIT ALTERNATIVE

The TSM and public transit alternative to the project would consist of implementing transit or para-transit systems in the region and selected transportation control measures (TCMs), such as High Occupancy Vehicle (HOV) lanes and ridesharing programs.

The applicability of this alternative to the still rural conditions of this part of North Kona is not clear. This alternative would not satisfy the project purposes of eliminating the discontinuity in the State Route System between Mamalahoa Highway and Queen Kaahumanu Highway, and providing a link between the Villages of La'i'opua and Mamalahoa Highway/Palani Road. Therefore, this alternative was eliminated from further study.

2.2.1.2.2 IMPROVEMENTS TO EXISTING CORRIDORS

This alternative consists of widening Palani Road or upgrading Hina Lani Street. Palani Road could be made a State facility; widened to four lanes; and realigned to have a minimum radius of 180 meters (600 feet), a maximum grade of 8.5 percent, and a design speed of 60 km/h (40 mph). The right-of-way for Palani Road would need to be widened to a minimum of 36.6 meters (120 feet).

This alternative would link Mamalahoa Highway to Queen Kaahumanu Highway by a State facility, eliminating the discontinuity in the State Route System. However, contrary to existing State and County plans, it would not provide access from the Villages of La'i'opua to Mamalahoa Highway/Palani Road. It would also affect up to 71 residences and a religious facility. Therefore, this alternative was dismissed from further analysis.

Improvements to Hina Lani Street, a recently completed County roadway, could be made, and the road converted to a State facility. This alternative would eliminate the discontinuity in the State Route System, but contrary to State and County plans, would not provide access from the Villages of La'i'opua to Mamalahoa Highway/Palani Road. Moreover, existing truck traffic experiences operational difficulties on Hina Lani Street. Trucks that are eastbound (mauka-bound) on Hina Lani Street can have difficulty climbing the steep uphill grade and making a left turn onto Mamalahoa Highway after

coming to a stop at the intersection. This left-turn movement also creates difficulties for through traffic traveling at high speed on Mamalahoa Highway/Palani Road. These existing difficulties would become even more significant when considering the truck traffic projected for the future. For these reasons, the alternative of improving Hina Lani Street was dismissed from further study.

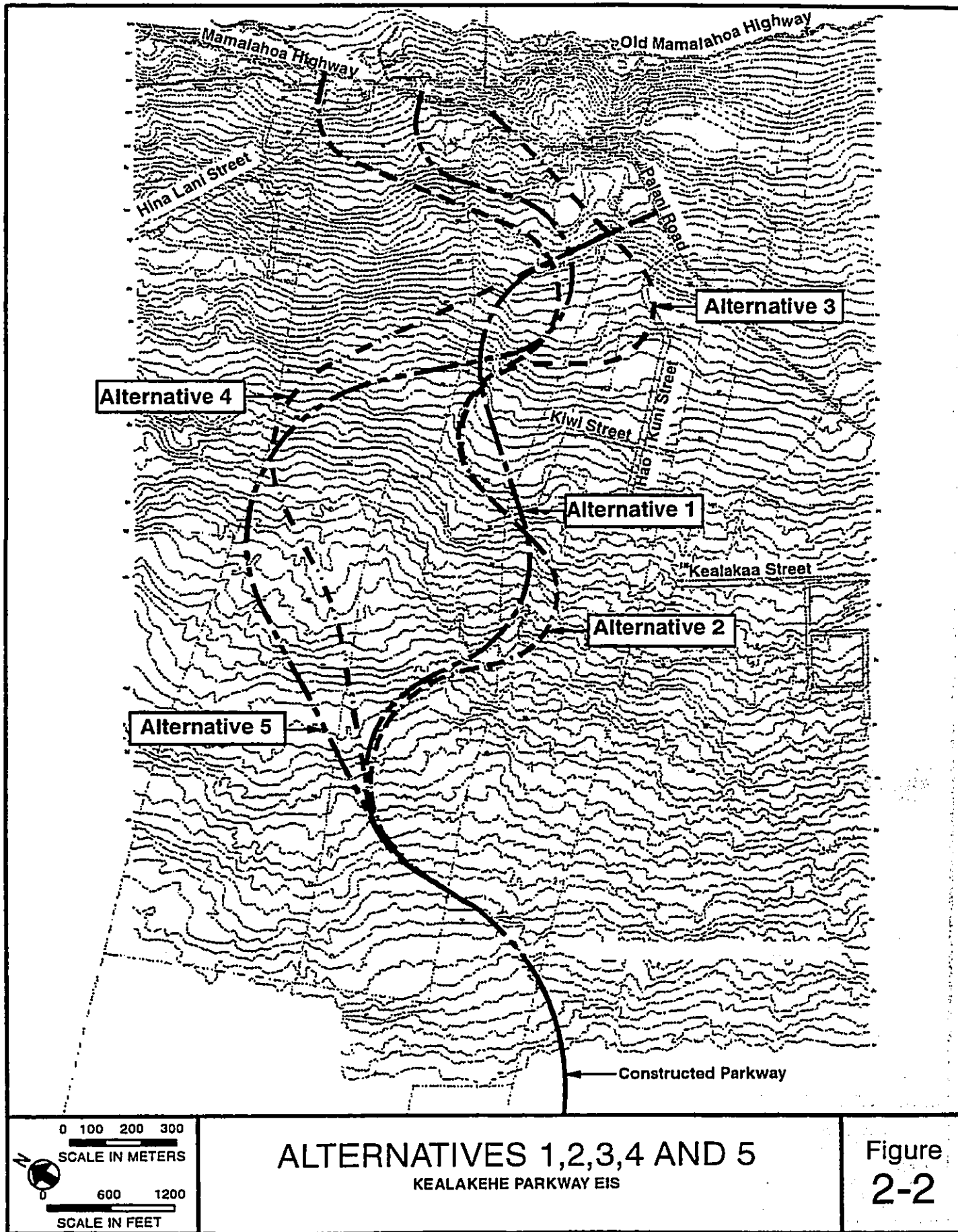
2.2.1.2.3 BUILD ALTERNATIVES WITHIN THE KEALAKEHE CORRIDOR

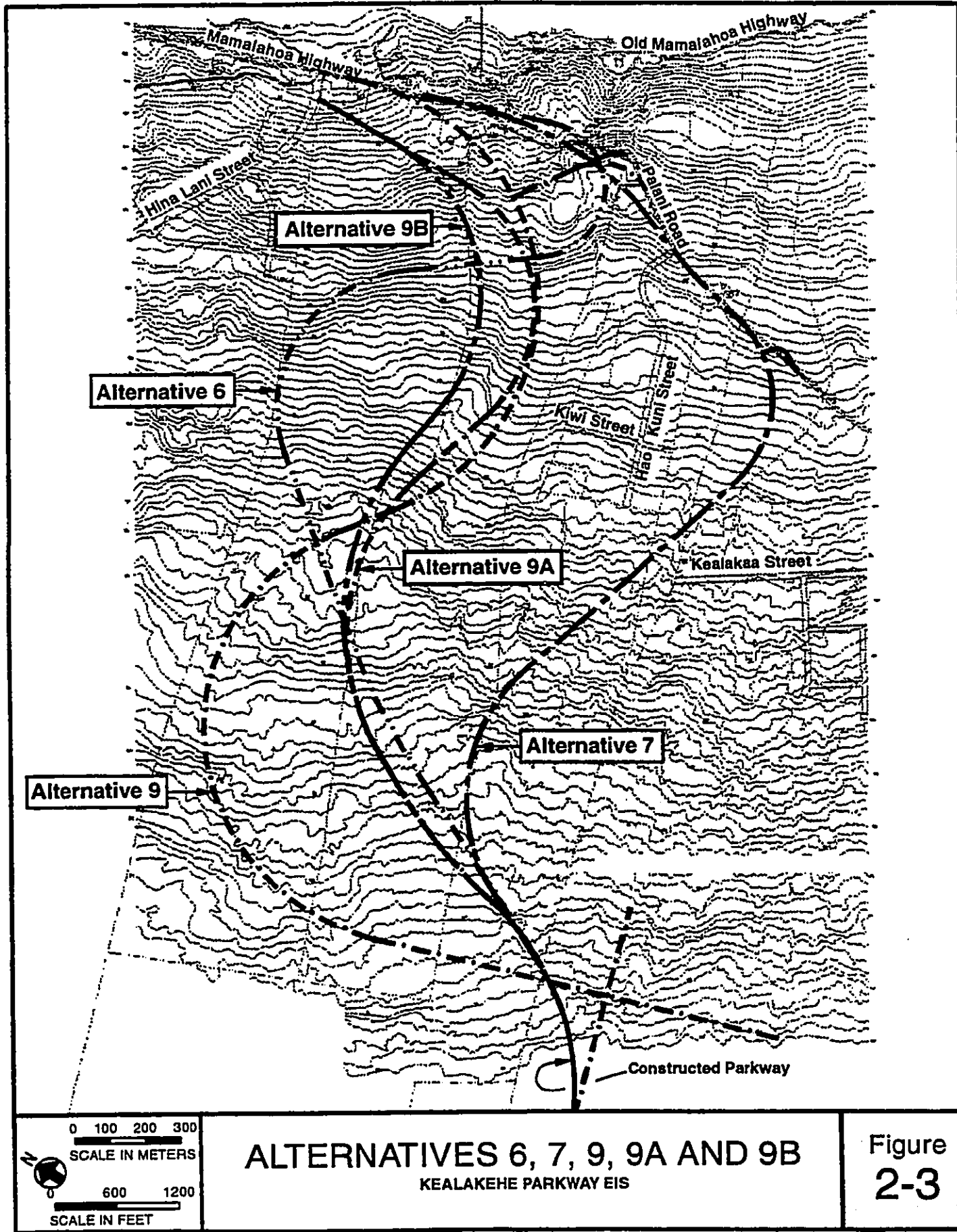
Fourteen alignments within the Kealakehe corridor have been considered. Ten of these were dismissed during the first cut screening, and the rejected alternatives are discussed here. The evaluation of most of these alternatives was presented in the Kealakehe Parkway Technical Memorandum (October 1992).

Alternatives 1 through 5 were developed for the Housing Finance and Development Corporation (HFDC) to assure the feasibility of linking the Villages of La'i'opua with Mamalahoa Highway/Palani Road (see Figure 2-2). Thereafter, to reduce the impact that Alternatives 1 through 5 would have on residential parcels, and to improve upon the profiles of these alternatives, Alternatives 6 and 7 were developed (see Figure 2-3).

Following a public information meeting held in Kailua-Kona in August 1992 that introduced the first seven alternatives, Alternatives 6A, 8, 9, 9A and 9B were developed. Figure 2-3 shows Alternatives 6, 7, 9, 9A and 9B, and Figure 2-4 shows Alternatives 6A and 8.

Alternatives 1 through 9, 6A, 9A and 9B were evaluated against each other using the criteria described in Section 2.2.1.1. Table 2-1 summarizes this screening analysis. Of the alternatives analyzed in the first cut screening, two (6A and 8) were selected for further analysis. These two alternatives passed the first cut screening because they are the only alternatives that meet all of the design criteria and have reasonable engineering solutions. (Alternative 6 was dismissed because of engineering and economic considerations, see following section.)





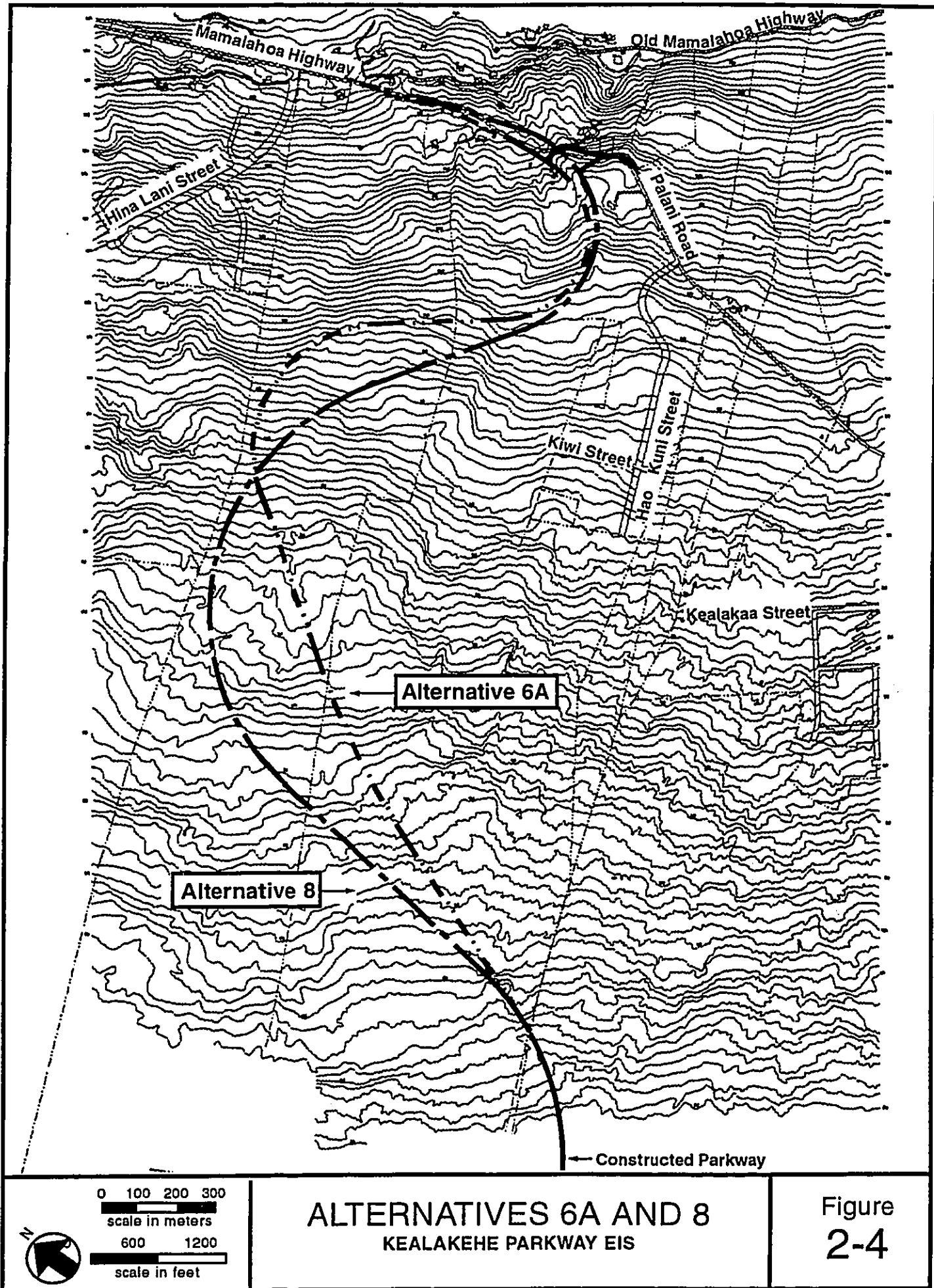


Table 2-1
FIRST-CUT COMPARISON OF BUILD ALTERNATIVES

Criterion	Alternative													
	1	2	3	4	5	6*	6A	7	8	9	9A	9B	10**	11**
Consistency with State and County Regional Plans	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Conformance to the State Route System	N	N	Y	N	N	Y	Y	Y	Y	N	Y	Y	Y	Y
Design Speed - 60 km/h (40 mph)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Max. Grade (not more than 10%)	119	120	104	9.3	120	8.0	8.8	10.0	9.5	118	114	143	9.0	9.5
Min. Radius (not less than 135 m)	350	180	180	320	180	210	240	350	305	670	455	560	275	275
Residences Directly Impacted	6	4	24	3	0	2	4	22	3	3	2	2	1	1
Religious, Recreational or Educational Facilities Affected	N	N	N	N	N	N	N	Y	N	N	N	N	N	N
Length of Alignment (Km)	3.1	4.0	3.9	3.2	3.9	3.9	3.9	3.7	3.9	4.8	3.4	3.2	4.0	4.0

Sources: Parsons Brinckerhoff, Kealahou Parkway Technical Memorandum, (October 1992) and Parsons Brinckerhoff, February 1994.

Notes:

Y = Yes
N = No

■ - exceeds criterion or high level of impact

* Alternative 6 was dismissed because of engineering and economic considerations (see text).

** Alternatives 10 and 11 were not evaluated against the others in the first cut screening, they were developed from the second cut screening (see text).

Alternatives 1 through 9, 6A, 9A and 9B are described below.

- Alternative 1. The proposed segment of Kealakehe Parkway would intersect Palani Road forming the stem of a T-intersection. The alignment would conform to State and County regional plans, but not to the concept of the State Route System forming the through route. The design speed would be 60 km/h (40 mph). The minimum horizontal radius would be 350 meters (1,150 feet). The alignment's maximum grade would be 11.9 percent, which would exceed the maximum allowed for an arterial. This 3.1 kilometer (1.9-mile) alignment would divide an existing community and would affect six residential parcels. Therefore, Alternative 1 was eliminated from further discussion.
- Alternative 2. The proposed segment of Kealakehe Parkway would intersect Mamalahoa Highway at the Hina Lani Street intersection, forming a four-legged intersection. These roadways would intersect at odd angles, forming an undesirable intersection configuration where turning movements between Hina Lani Street and Kealakehe Parkway would be difficult. The 4.0 kilometer (2.5-mile) alignment would conform to State and County regional plans, but would not conform to the concept of the facilities on the State Route System forming the through route. The design speed would be 60 km/h (40 mph), and the minimum horizontal radius would be 180 meters (600 feet). The maximum grade of 12 percent would exceed the maximum allowed for an arterial. No public facilities would be affected, but four residential parcels could be affected. Alternative 2 was eliminated from further discussion.
- Alternative 3. The proposed segment of Kealakehe Parkway would form the through route with Kealakehe Parkway joining Mamalahoa Highway south of the Palani Road/Old Mamalahoa Highway junction. Palani Road would be realigned to form the stem of a T-intersection at its intersection with Kealakehe Parkway. Alternative 3 would conform to State and County regional plans, and the concept of the State Route System forming the through route. This 3.9 kilometer (2.4-mile) alternative would have a 60 km/h (40 mph) design speed, a minimum horizontal radius of 180 meters (600 feet) and a maximum grade of 10.4 percent which would exceed the maximum allowed for an arterial. This alignment, however, fragments an established residential subdivision and may affect as many as 24 residential

parcels. No public facilities would be affected, but the alternative was eliminated due to the potential residential impacts.

- Alternative 4. The proposed segment of Kealakehe Parkway would intersect Palani Road, forming the stem of a T-intersection. While the alignment would conform to State and County regional plans, it would not conform to the concept of the facilities on the State Route System forming the through route. The design speed of this 3.0 kilometer (2.0-mile) alignment would be 60 km/h (40 mph). The minimum horizontal radius would be 320 meters (1,050 feet) and the maximum grade would be 9.3 percent. This alignment would run between existing houses and would affect three parcels. No public facilities would be affected, but the alternative was eliminated due to the criterion of the State facility forming the through route.
- Alternative 5. The proposed segment of Kealakehe Parkway would intersect Mamalahoa Highway at the Palani Road/Old Mamalahoa Highway junction, forming the south leg of a cross intersection. The 3.9 kilometer (2.4-mile) alignment would have a design speed of 60 km/h (40 mph) and a minimum horizontal radius of 180 meters (600 feet). The maximum grade of 12 percent would exceed the maximum allowed for an arterial. No residential parcels or public facilities appear to be affected. The alternative would conform to State and County regional plans, but would not conform to the concept of the facilities on State Route System forming the through route, and therefore was eliminated.
- Alternative 6. The proposed segment of Kealakehe Parkway and Mamalahoa Highway would form the through route, with Kealakehe Parkway joining Mamalahoa Highway just south of the Palani Road/Old Mamalahoa Highway junction. This alternative would require realignment of a short segment of Palani Road to form the stem of a T-intersection with Kealakehe Parkway. This alternative would conform to State and County regional plans and the concept of the facilities on the State Route System forming the through route. The 3.9 kilometer (2.4-mile) alternative would have a minimum radius of 210 meters (700 feet), a maximum grade of 8.8 percent, and a design speed of 60 km/h (40 mph). The upper area of this alignment would affect two residential parcels, but no public facilities. Alternative 6 was eliminated from further discussion because it would require a retaining wall on the order of 13 meters (40 feet) tall, an excessive amount of excavation, and an associated high level of cost.

- Alternative 6A. The proposed segment of Kealakehe Parkway would form the through road, with Kealakehe Parkway joining Mamalahoa Highway just south of the Palani Road/Old Mamalahoa Highway junction. This alternative would require realignment of a short segment of Palani Road to form the stem of a T-intersection with Kealakehe Parkway. This alternative would conform to State and County regional plans and the concept of the facilities on the State Route System forming the through route. This 3.9 kilometer (2.4 mile) alternative would have a minimum radius of 240 meters (800 feet), a maximum grade of 8.8 percent, and a design speed of 60 km/h (40 mph). The upper area of this alignment would affect four residential parcels, but no public facilities.
- Alternative 7. The proposed segment of Kealakehe Parkway would form the through route, with Kealakehe Parkway replacing approximately 1.25 kilometer (4,100 feet) of the northernmost portion of Palani Road before taking a westerly (makai) heading. This alternative would also require realignment of a short segment of Palani Road to form the stem of a T-intersection with Kealakehe Parkway, approximately 430 meters (1,400 feet) south of the Hao Kuni Street intersection. This 3.7 kilometer (2.3-mile) alignment would conform to the State and County regional plans and the concept of the facilities on the State Route System forming the through route. This alternative would have a minimum horizontal radius of 350 meters (1,150 feet), a maximum grade of 10 percent, and a design speed of 60 km/h (40 mph). As many as 22 residential parcels and a religious facility may be affected. Alternative 7 was eliminated from further discussion.
- Alternative 8. The proposed segment of Kealakehe Parkway would be a continuation of Mamalahoa Highway, joining the highway just south of the Palani Road/Old Mamalahoa Highway junction. This alternative would also require realignment of a short segment of Palani Road to form the stem of a T-intersection with Kealakehe Parkway. This 3.8 kilometer (2.4-mile) alternative would conform to State and County regional plans and the concept of the facilities on the State Route System forming the through route. This alternative would have a design speed of 60 km/h (40 mph), a minimum horizontal radius 305 meters (1,000 feet) and a maximum grade of 9.5 percent. Three residential parcels may be affected.

- Alternative 9. The proposed segment of Kealakehe Parkway would form the through route from the west (makai) terminus and tie into a future mid-level road. Alternative 9, however, would not conform to State or County regional plans. This alternative would be severely restricted in its ability to convey traffic to the region's major arterial, to the activities proposed east (mauka) of Queen Kaahumanu Highway, and to the Honokohau Boat Harbor. The length of the alignment would exceed 4.8 kilometers (3 miles). The design speed for this alternative would be 60 km/h (40 mph) and its minimum radius would be 670 meters (2,200 feet). The maximum grade of 11.8 percent would exceed the maximum desired grade of 10 percent. Three residential parcels may be affected. No existing public facilities would be affected. As the alignment crosses into the Villages of La'i'opua, substantial adverse impacts to that development would occur. This alternative's north-south alignment would also have additional impacts on properties beyond (south of) the HFDC's Villages of La'i'opua development. Alternative 9 was therefore eliminated from further discussion.
- Alternative 9A. The proposed segment of Kealakehe Parkway would form the through route. This alternative would conform to State and County regional plans and the concept of the facilities on the State Route System forming the through route. This alternative would be 3.5 kilometers (2.1 miles) in length and would have a design speed of 60 km/h (40 mph). Alternative 9A would have a minimum horizontal radius of 455 meters (1,500 feet) and a maximum grade of 11.4 percent. No public facilities would be affected. Since the grade exceeds the maximum grade of 10 percent, and two residential parcels would be affected, this alternative was eliminated.
- Alternative 9B. The proposed segment of Kealakehe Parkway would form the through route. This alternative would conform to State and County regional plans and the concept of the facilities on the State Route System forming the through route. This alternative would be 3.2 kilometers (2 miles) in length and would have a design speed of 60 km/h (40 mph). Alternative 9B would have a minimum horizontal radius of 560 meters (1,850 feet) and a maximum grade of 14.3 percent. No public facilities would be affected. Since the grade exceeds the maximum grade of 10 percent, and two residential parcels would be affected, this alternative was eliminated.

2.2.2 Second-Cut Screening

After Alternatives 6A and 8 were selected in the first-cut screening, an alignment refinement process was performed. This refinement process was based on a botanical survey and a historic and archaeological field reconnaissance. These two surveys allowed the two additional criteria of impacts on botanical resources, and impacts on historic and archaeological resources, to be applied to Alternatives 6A and 8.

The botanical survey was conducted within a 91 meter (300-foot) corridor centered on Alternatives 6A and 8. A report was prepared that provided a description of the general vegetation types in the area, and an assessment of the potential involvement of the project with endangered and threatened plant species.

The botanical survey indicated that none of the plant species observed along Alternatives 6A and 8 are presently listed endangered or threatened species. However, two colonies of Ko'oko'olau (*Bidens micrantha ssp. ctenophylla*), which is a "Candidate 1" species, were found along Alternative 8. (A "Candidate 1" species is a rare species that could potentially be listed as an endangered or threatened species in the future.)

The archaeological field reconnaissance was also conducted within a 91 meter (300-foot) corridor centered on each alignment. The purposes of this reconnaissance survey were to help develop an alignment that avoids significant archaeological sites and to determine the scope of future research. Therefore, while helpful in refining an alignment, a preliminary survey is not sufficient to submit to the Department of Land and Natural Resources (DLNR) State Historic and Preservation Office (SHPO) as part of an EIS.

The archaeological reconnaissance survey identified 86 archaeological sites along Alternatives 6A and 8. Twenty-two of these were recommended for data recovery/preservation or partial or complete preservation. These initial findings indicated the need for a subsequent, more detailed archaeological inventory survey of the area, and also indicated that the alignments of Alternatives 6A and 8 needed to be modified to minimize impacts on significant archaeological resources.

2.3 ALTERNATIVES SELECTED FOR FURTHER STUDY IN THE DRAFT EIS

2.3.1 Evaluation

Because of the botanical and archeological findings summarized in the previous section, it was determined that Alternatives 6A and 8 would need to be modified to minimize the overall level of impact on archeological resources. Alternatives 10 and 11 (described in Sections 2.3.2.2 and 2.3.2.3) were then developed as modifications of Alternatives 6A and 8, and were selected to be the two build alternatives addressed in detail in the draft EIS. Alternatives 10 and 11 would have fewer impacts on archaeological resources than Alternatives 6A and 8 because of the significance of the specific resources affected, and the nature of the impact on those resources. They were therefore selected as the two build alternatives to receive additional study in the draft EIS.

The No Build alternative was also considered in the draft EIS and is considered in this final EIS as well. The No Build alternative provides a baseline for assessing the environmental impacts of the build alternatives.

2.3.2 Description of Alternatives Selected for Further Study in the Draft EIS

2.3.2.1 NO BUILD ALTERNATIVE

The No Build alternative consists of the existing roadway network and those roadway improvements other than the project addressed in this final EIS that are expected to be in place relatively soon. In addition to the existing roadway network, this alternative includes:

- the segment of Kealakehe Parkway that was completed within the Villages of La'i'opua in August, 1995;
- the widening of Queen Kaahumanu Highway from its present two lanes to four lanes between Keahole Airport and Palani Road; and

- intersection improvements at Queen Kaahumanu Highway and Kealakehe Parkway.

2.3.2.2 ALTERNATIVE 10

Figure 2-5 shows Alternative 10.

Kealakehe Parkway would form the through road with Kealakehe Parkway joining Mamalahoa Highway just south of the Palani Road/Old Mamalahoa Highway junction. This 4.0 kilometer (2.5-mile) alternative would require realignment of a short segment of Palani Road to form the stem of a T-intersection with Kealakehe Parkway. Alternative 10 would conform to State and County regional plans and to the concept of the facilities on the State Route System forming the through route. This alternative would have a design speed of 60 km/h (40 mph), a minimum horizontal radius of 275 meters (915 feet) and a maximum grade of 9.0 percent. One residential parcel would be affected. No public facilities would be affected (see Table 2-1).

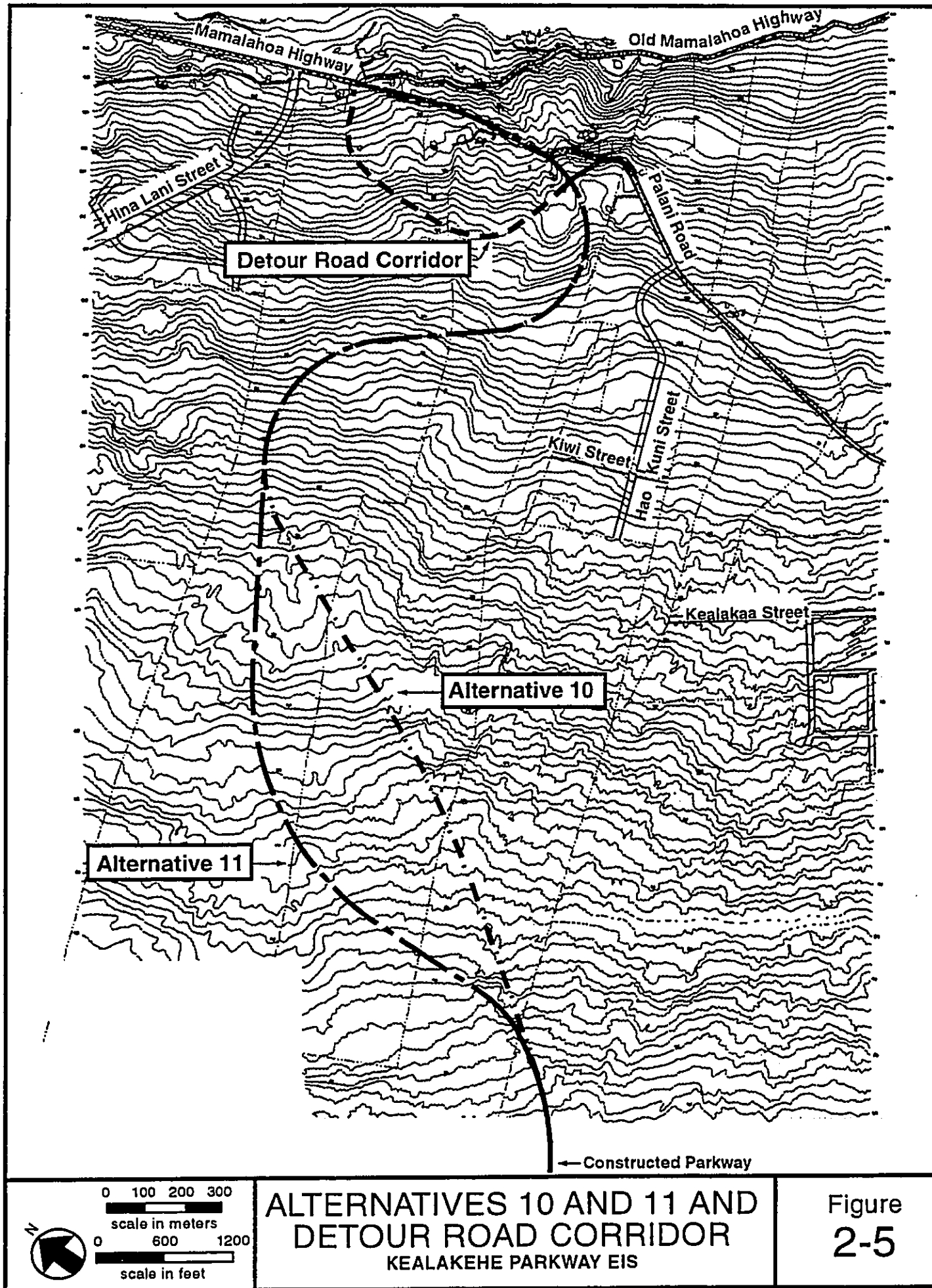
2.3.2.3 ALTERNATIVE 11

Figure 2-5 shows Alternative 11.

Kealakehe Parkway would be an extension of Mamalahoa Highway, joining the highway just south of the Palani Road/Old Mamalahoa Highway junction. This 4.0 kilometer (2.5-mile) alternative would require realignment of a short segment of Palani Road to form the stem of a T-intersection with Kealakehe Parkway. The alignment would conform to State and County regional plans and the concept of the facilities on the State Route System forming the through route. This alternative would have a design speed of 60 km/h (40 mph), a minimum horizontal radius of 275 meters (915 feet), and a maximum grade of 9.5 percent. One residential parcel would be affected. No public facilities would be affected (see Table 2-1).

2.3.2.4 FEATURES COMMON TO BOTH ALTERNATIVES 10 AND 11

Alternative 10 or 11 would be a four-lane State highway with two westbound (makai-bound) lanes, two eastbound (mauka-bound) lanes, a center median, and shoulders on both sides. Figure 1-2 shows a typical section of the proposed roadway. The



typical section would be 36.6 meters (120 feet) wide, but additional right-of-way would be required in most places for excavations and embankments which would be necessary to achieve the proper roadway profile. Excavations would have a slope of 1:2 (vertical:horizontal) while embankments would have 1:3 slopes. The limits of the right-of-way to be acquired for the project would be established during the project's design phase.

Having two lanes in each direction would better handle forecasted levels of traffic and allow vehicles to safely pass slower moving trucks. The paved shoulder could accommodate bicycle travel in each direction. The center median could accommodate an underground utility corridor. The median's width of 8.6 meters (28 feet) is established by safety considerations, and is necessary to provide a recovery zone.

Both alternatives would require a new intersection to connect Palani Road and the detour road with Kealakehe Parkway. The intersection would provide left-turn pockets for those turning from Kealakehe Parkway onto Palani Road or onto the detour road, and a median acceleration lane for vehicles making left turns onto Kealakehe Parkway from Palani Road or the detour road. Other improvements could include acceleration and deceleration lanes on Kealakehe Parkway to make turns off or onto Kealakehe Parkway. This intersection may also be signalized.

Xeriscape landscaping would be provided. Details of the landscaping would be determined during the project's design phase.

Approximately 230 meters (750 feet) of the portion of Kealakehe Parkway just north of the Villages of La'i'opua would be a transition zone from the typical section of Kealakehe Parkway within the Villages of La'i'opua (which is different from that proposed here) to the typical section shown in Figure 1-2.

The profiles of Alternatives 10 and 11 have been optimized to balance the volumes of cuts and fills to the maximum degree practical, thereby minimizing the need to truck material on or off-site. Ample production from nearby quarries exists to satisfy fill requirements, if necessary.

With either Alternative 10 or 11, a detour road from Mamalahoa Highway to Palani Road would be required to maintain the flow of traffic during the construction of the east (mauka) terminus of Kealakehe Parkway. The corridor of the detour road is shown in Figure 2-6. The detour road would have a minimum radius of 180 meters (600 feet) and a design speed of 40 km/h (25 mph). It would have a 10.4 meter (34-foot) typical section, excluding embankment and excavation, and would provide one 3.6 meter (12-foot) lane in each direction and 2.4 meter (8.0-foot) shoulders on each side. The detour road's northern terminus would connect to Kealakehe Parkway directly opposite Old Mamalahoa Highway. The intersection improvements will be similar to the Palani Road/detour road intersection. Acceleration lanes, deceleration lanes and left-turn pockets would be provided. This intersection may also be signalized if traffic conditions warrant.

2.4 PROJECT SCHEDULE AND COSTS

The present schedule of the project is shown in Table 2-2. The approval processes are expected to be completed by mid 1998, and construction is expected to begin by late 2001. Kealakehe Parkway is expected to open for service in 2002. However, this schedule is contingent on additional appropriations from the State Legislature.

Estimated costs for the completion of Kealakehe Parkway are shown in Table 2-3. These estimates include design, right-of-way acquisition, and construction of all elements of the proposed project.

2.5 PREFERRED ALTERNATIVE AND BASIS FOR IDENTIFICATION

Alternative 11 has been identified as the Preferred Alternative. The identification of Alternative 11 was made after full evaluation of the impacts of the alternatives; the comments received after public review of the draft EIS, and the comments made at the formal public hearing. The basis for this decision is minimization of potential impacts on rare and endangered species and archaeological resources (including Section 4(f) properties) and cost.

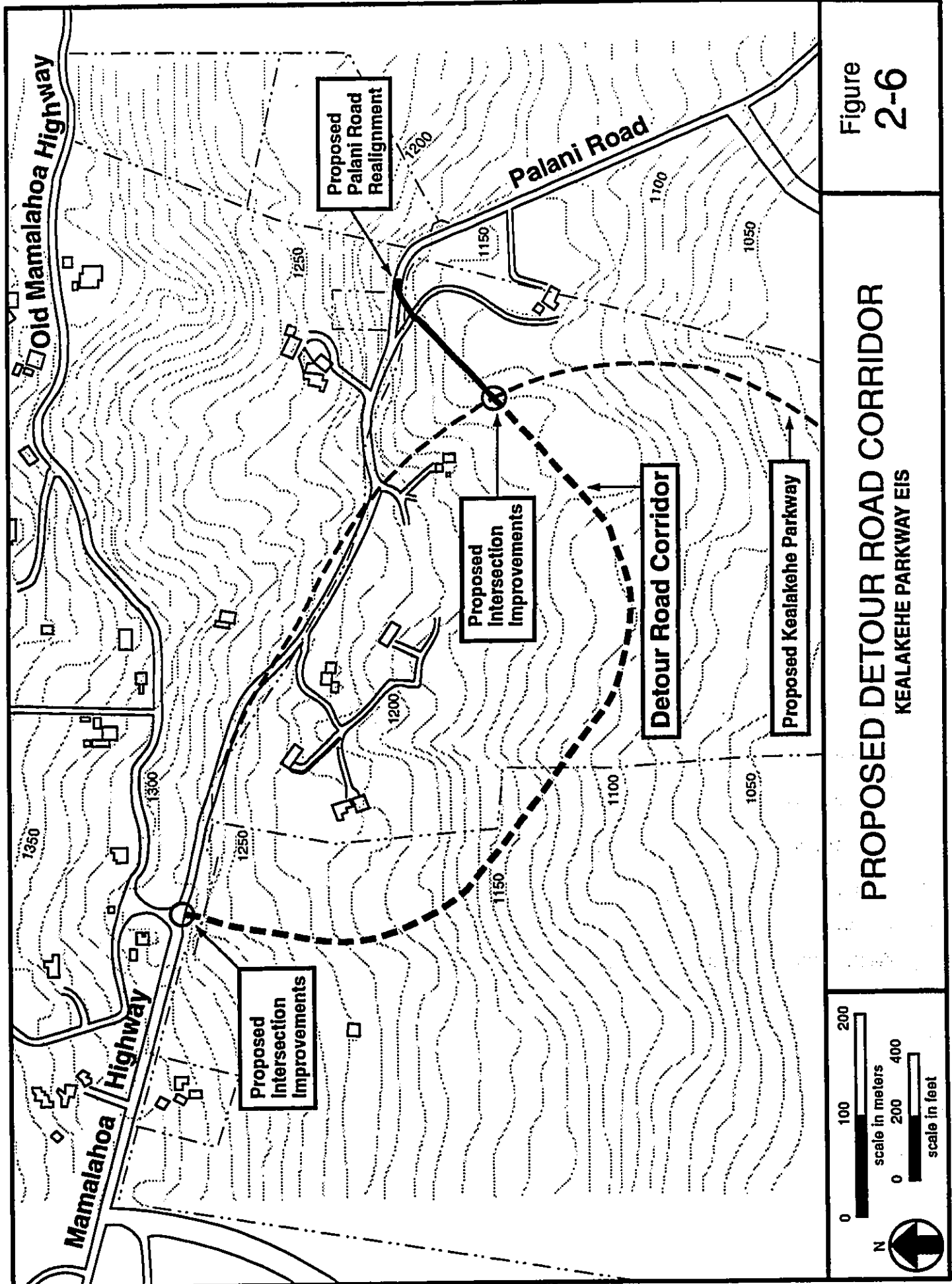


Figure
2-6

PROPOSED DETOUR ROAD CORRIDOR
KEALAKEHE PARKWAY EIS

0 100 200
scale in meters

0 200 400
scale in feet

N

Table 2-2
PROJECT SCHEDULE

Start Right-of-Way Acquisition	<u>Mid 2000</u>
Start Construction	<u>Late 2001</u>
Construction Duration	18 Months

Source: Parsons Brinckerhoff, May 1997.

Table 2-3
PROJECT COST ESTIMATES

	Alternative 10	Preferred Alternative	Detour Road
Design	\$4,000,000	\$3,500,000	\$61,000
Right-of-Way	3,600,000	3,500,000	213,000
Construction	<u>39,700,000</u>	<u>34,600,000</u>	<u>605,000</u>
TOTAL	\$47,300,000	\$41,600,000	\$879,000

Source: Parsons Brinckerhoff, February 1995.

Although Alternative 11 has been identified as the Preferred Alternative, formal selection of the Preferred Alternative is not made until the Record of Decision (ROD) is issued.

Alternative 10 would directly affect two endangered species, the Loulu Palm (Pritchardia affinis) and the uhiuhi tree (Caesalpinia kavaiensis), and the candidate species Ko'oko'olau (Bidens micrantha ssp. ctenophylla). Alternative 11 will directly affect only the endangered Loulu Palm, and indirectly affect the endangered uhiuhi tree. Therefore, Alternative 11 has fewer impacts on rare species than Alternative 10. Alternative 11's impacts on endangered species will be mitigated.

Alternative 11 will also disturb fewer archaeological resources than Alternative 10. Alternative 10 would affect 68 archeological features, while Alternative 11 will affect 53 features. In addition, Alternative 10 would affect two Section 4(f) properties, while Alternative 11 will affect only one Section 4(f) property. Alternative 11's archeological impacts will be mitigated.

Finally, Alternative 11 will be almost \$6 million less expensive than Alternative 10. Alternative 10's higher cost can be attributed to more excavation and fill activity.

Alternative 11 includes the provision of environmental mitigation measures as described in Chapter 4.

The No Build Alternative was not identified as the Preferred Alternative because it would not provide a continuous State Route System between two State highways, Queen Kaahumanu Highway and Mamalahoa Highway. Congestion on Palani Road would worsen, thus contributing to the potential for more traffic accidents. In addition, the No Build Alternative would not facilitate access to the Villages of La'i'opua to support this planned community development.

CHAPTER 3.0
AFFECTED ENVIRONMENT

CHAPTER 3.0 AFFECTED ENVIRONMENT

The purpose of this chapter is to describe the environmental conditions in the area potentially affected by the project.

3.1 LAND USE AND SOILS

3.1.1 Regional Setting and Projected Growth

The proposed Kealakehe Parkway will be located on the west side of the island of Hawaii in the North Kona District, about 3 kilometers (2 miles) north of Kailua-Kona and approximately 11 kilometers (7 miles) south of Keahole Airport.

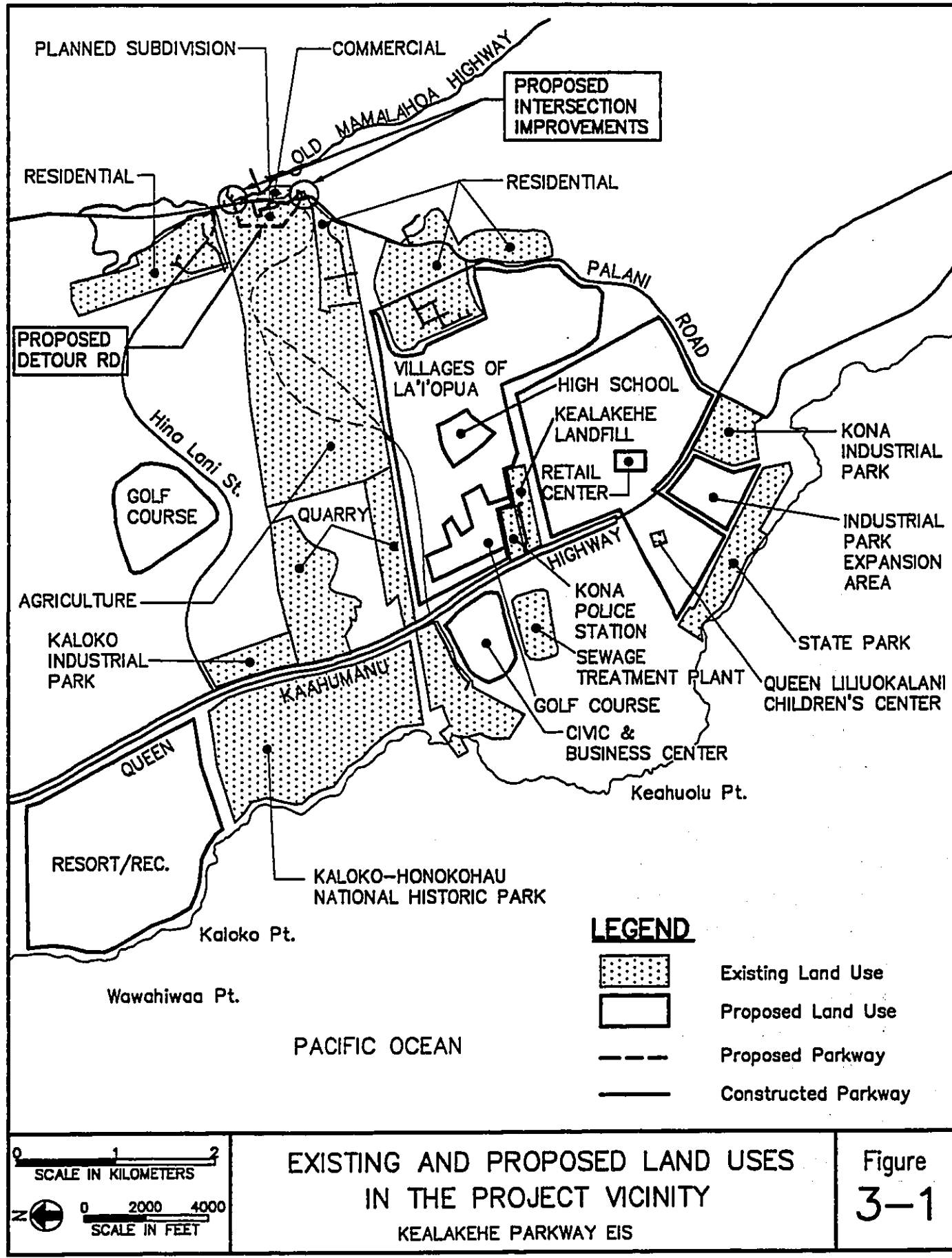
Kailua-Kona is the major activity center of West Hawaii. Historic Kailua Village is a town center and primary visitor attraction. A mix of resort, commercial, light industrial, and residential uses surround Kailua Village.

In 1990, North Kona had a population of 22,284, which represented a 62 percent increase over the 1980 population. The coastal areas of North Kona and South Kohala are expected to experience further growth, significantly increasing the demand for new homes.

A major development which will substantially increase the supply of homes in the area is HFDC's project, the Villages of La'i'opua (see Figure 3-1). This 390 hectare (960-acre) project will be a mixed-use residential community that will include:

- 4,100 residential units;
- a golf course;
- an elementary and a high school;
- public facilities; and
- a commercial shopping center.

One purpose of this master-planned community is to increase the supply of "affordable" housing in West Hawaii, and 60 percent of the units will be "affordable."



Once completed, this planned community will generate many of the vehicle trips that will be accommodated by Kealakehe Parkway.

Other developments that will affect the region are proposed nearby. Queen Liliuokalani Trust (QLT) plans to develop its holdings east (mauka) of Queen Kaahumanu Highway between the Villages of La'i'opua and Palani Road, and also a parcel adjacent to the Kona Industrial Park. The first of these developments is the construction of a retail center. This center is located on 20 hectares (50 acres) of Trust land within a 127 hectare (315-acre) area zoned for a regional commercial center. In addition, QLT proposes to expand the Kona Industrial Park.

The State is also planning for urban development on approximately 1068 hectares (2,640 acres) east (mauka) of Keahole Airport. This project includes a West Hawaii branch of the State university and residential and industrial development.

In addition, the following smaller developments are proposed closer to the Kealakehe Parkway corridor:

- the subdivision of two areas of agriculturally zoned land near the proposed eastern (mauka) terminus of Kealakehe Parkway; and
- the construction of affordable housing between Palani Road and Old Mamalahoa Highway.

Infrastructure projects and social services are being constructed, planned or expanded to support the expected population increases. For example, a 10 900 cubic meters-per-day (m^3/day) (2.89 million gallon-per-day (mgd)) sewage treatment plant (STP) has just been constructed to replace the existing STP in Kailua-Kona. The Villages of La'i'opua will contain a new high school, elementary school, and neighborhood parks. SDOT is also proposing to widen Queen Kaahumanu Highway which includes improvements to its intersection with Kealakehe Parkway.

In summary, continued growth in this region is expected, and government investments in the necessary infrastructure and support services have been occurring.

3.1.2 Project Area and Soil Types

The corridor of the proposed Kealakehe Parkway is located on the western (makai) slope of Hualalai and includes lands owned by the Robert Greenwell Trust, Palani Ranch Company, Lanihau Corporation, and the State of Hawaii (see Table 3-1 and Figure 3-2).

Table 3-1
TMK PARCELS WITHIN
THE KEALAKEHE PARKWAY CORRIDOR

TMK	Approximate Area of Total Parcel	Owner
7-4-2-8	644 hectares (1,590 acres)	Palani Ranch Co., Inc.
7-4-6-12	12 hectares (29 acres)	Robert Greenwell Trust
7-4-8-47	133 hectares (328 acres)	Robert Greenwell Trust
7-4-8-05	83 hectares (206 acres)	Palani Ranch Co., Inc.
7-4-8-60	23 hectares (56 acres)	Palani Ranch Co., Inc.
7-4-8-13	222 hectares (550 acres)	Lanihau Partners
7-4-8-17	311 hectares (769 acres)	State of Hawaii

Source: State of Hawaii, Department of Taxation, April 1993, revised April 1995.

Figure 3-1 shows existing and proposed land uses near the proposed Kealakehe Parkway. Present land uses within the corridor consist of 0.4 hectare (1.0-acre) housing lots on the east (mauka) side, and agricultural activities including ranching, fruit orchards, coffee growing, and bee keeping. One commercial property, Orchard Marine Corporation, is east (mauka) of Palani Road, near Palani Junction (see Figure 3-1). The area surrounding the corridor includes residential lots, schools, a police station, a rock quarry, a community landfill (now closed), and the Kaloko Industrial Park.

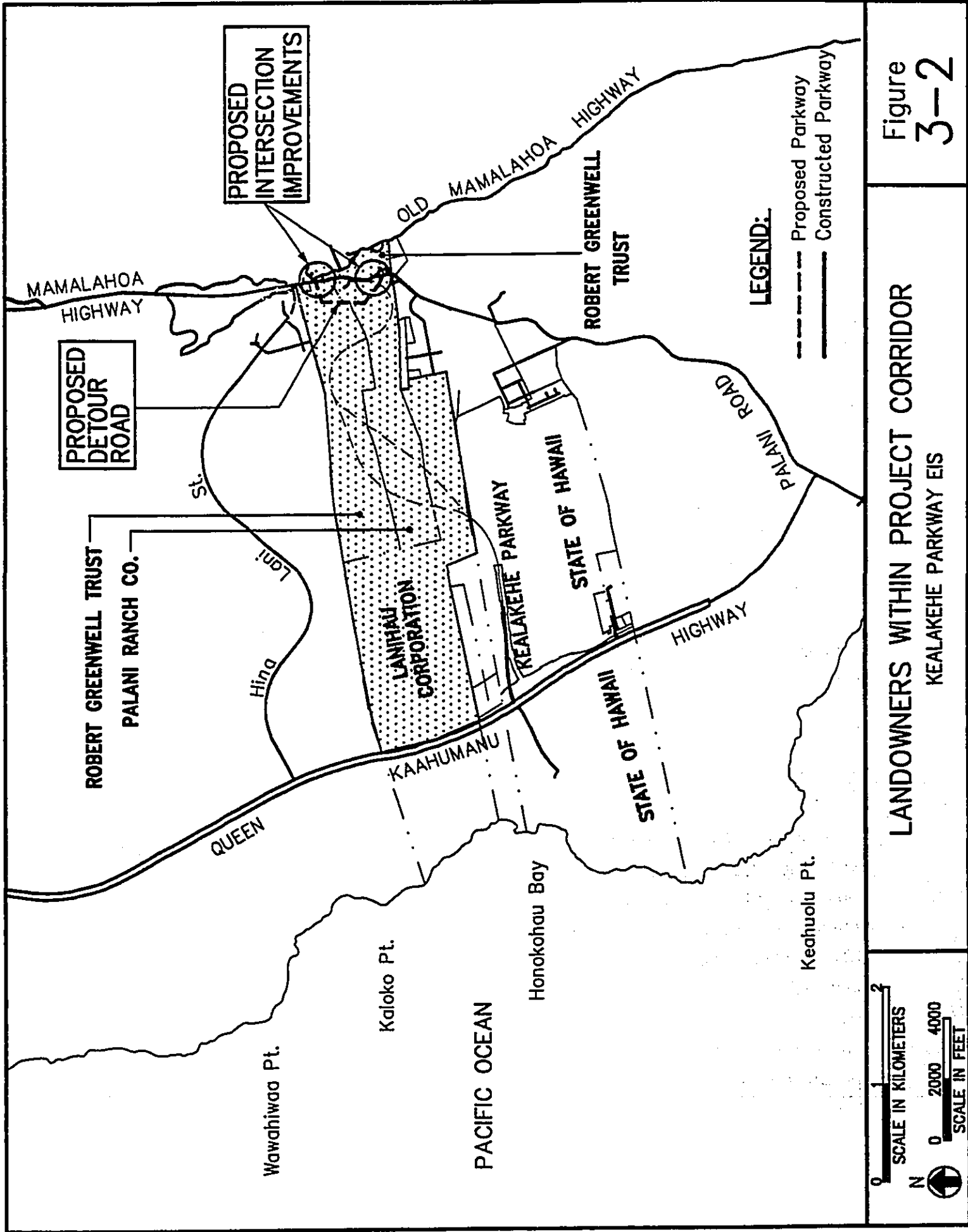


Figure
3-2

LANDOWNERS WITHIN PROJECT CORRIDOR
KEALAKEHE PARKWAY EIS

According to the United States Department of Agriculture Natural Resources Conservation Service (NRCS), the project area consists of four soil types and two miscellaneous land types (lava formations) (see Figure 3-3). Table 3-2 summarizes the characteristics of the soil types and the following paragraphs describe the lava formations.

A'a Lava Flows (SCS abbreviation: rLV). This lava is rough and broken. It is a mass of clinker, hard, glassy, sharp pieces piled in tumbled heaps. In areas of high rainfall, it contributes substantially to the underground water supply and is used for watershed. This lava has practically no soil covering and is bare of vegetation, except for mosses, lichens, ferns, and a few small Ohia trees. It is at an elevation ranging from near sea level to 4,000 meters (13,000 feet) and receives from 25 to 635 centimeters (10 to 250 inches) of rainfall annually. It is associated with pahoehoe lava flows and many soils.

Pahoehoe Lava Flows (SCS abbreviation: rLW). This type has a billowy, glassy surface that is relatively smooth. In some areas, however, the surface is rough and broken, and there are hummocks and pressure domes. Pahoehoe lava has no soil covering and is typically bare of vegetation except for mosses and lichens. In the areas of higher rainfall, however, scattered Ohia trees, ohelo berry, and aalii have gained a foothold in cracks and crevices. Pahoehoe lava flows are found from sea level to 4000 meters (13,000 feet).

The west (makai) portion of the proposed roadway will be constructed in these rock formations.

A soil analysis published in the University of Hawaii's Land Study Bureau's Detailed Land Classification, Island of Hawaii (1965) classified the entire area as "E", or very poorly suited for agricultural productivity. Soils are found within the eastern (mauka) portion of the project area. These soils have a maximum thickness of 25 centimeters (10 inches) on top of the underlying lava formations. Punaluu and Kaimu soil types are classified as Pasture Groups 3 and 5, respectively. Pasture Group 3 is defined as unimproved pastures consisting mostly of kiawe, koa haole, klu, cactus, lantana, ilima, ipiuma, opiuma, natal redtop, and Bermuda grass. Pasture Group 5 is defined as unimproved pastures consisting mainly of natal redtop, Bermuda grass, lantana, Christmas berry, guava, Japanese tea, and bush indigo. Kona and Puna soil types

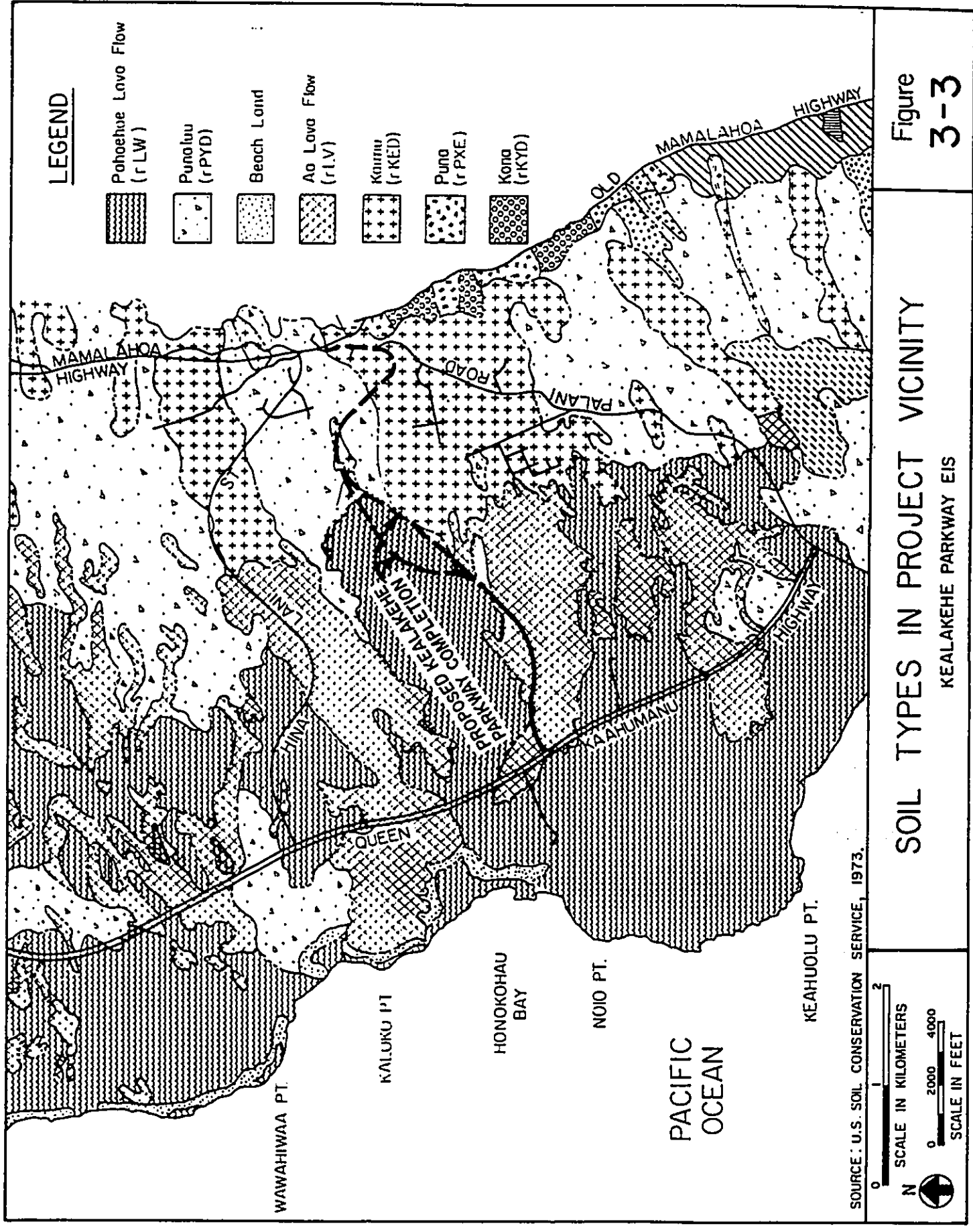


Figure 3-3

SOIL TYPES IN PROJECT VICINITY
KEALAKEHE PARKWAY EIS

are classified in Pasture Group 7, which is defined as unimproved pastures consisting of hilograss, glenwoodgrass, yellow foxtail, carpetgrass, and guava.

Table 3-2
SUMMARY OF SOIL TYPES

Soil Type	Parent Material	Stoniness	Drainage	Percent Slope	Primary Uses
Punaluu	Pahoehoe Lava	Rocky	Well-drained	6 - 20	Pasture
Kaimu	A'a Lava	Extremely	Well-drained	6 - 20	Native Woodland
Kona	Pahoehoe Lava	Rocky	Well-drained	6 - 20	Pasture Watershed
Puna	A'a Lava	Extremely	Well-drained	3 - 25	Woodland Pasture

Source: U.S. Department of Agriculture, Natural Resources Conservation Service, Soil Survey of Island of Hawaii, State of Hawaii, December 1973.

3.1.3 Zoning and Land Use Plans and Policies

This section contains brief descriptions of planning documents that address this area.

3.1.3.1 HAWAII STATE PLANS AND CONTROLS

Hawaii State Plan and Functional Plans

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 Hawaii State Plan into more detailed proposals in such areas as agriculture, conservation, recreation, transportation, and water resources.

Hawaii State Land Use Controls

The State Land Use Commission (SLUC) has divided all land in the State into four land use districts: Urban, Agriculture, Conservation and Rural. Each district has specific land use objectives and development constraints.

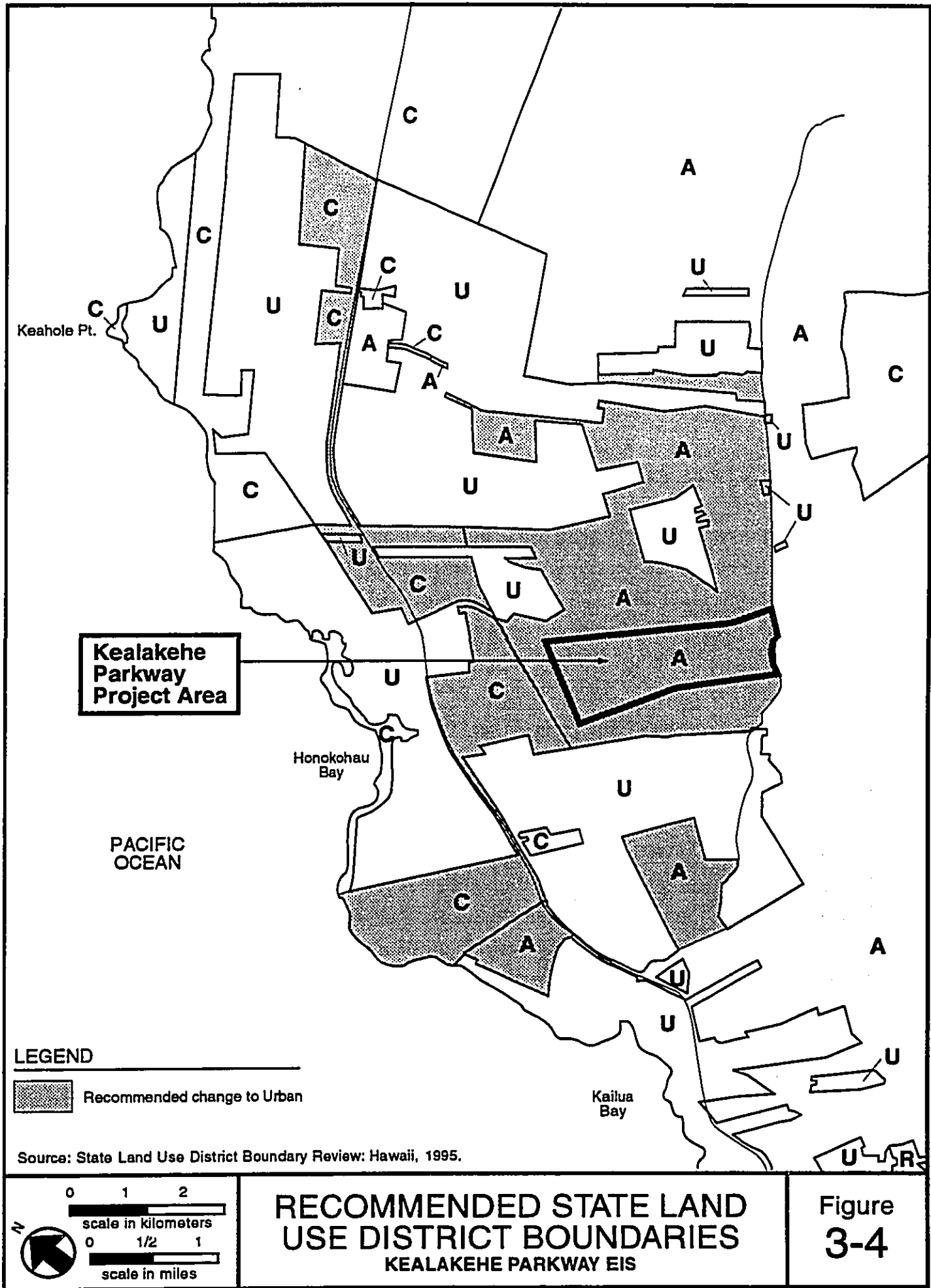
Recommended State land use district boundaries are shown in Figure 3-4. Kealakehe Parkway would traverse lands designated as Urban, Agriculture, and Conservation. It would be the responsibility of private landowners to petition the Land Use Commission or the County of Hawaii (depending on the hectares and type of reclassification requested) for actual land use reclassification at the appropriate time.

Coastal Zone Management Act (Chapter 205A, HRS)

Kealakehe Parkway will be located within the State's coastal zone. The objectives and policies of the Hawaii Coastal Zone Management (CZM) Program protect and manage Hawaii's coastal resources. Federally assisted activities affecting Hawaii's coastal zone, such as Kealakehe Parkway, must be consistent with the CZM objectives and policies.

La'i'opua Planned Community Kealakehe Master Plan

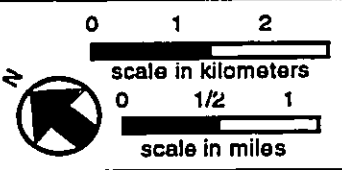
HFDC is planning to construct the Villages of La'i'opua which is expected to be completed by the year 2010. When finished, this project is expected to increase the population in this area by 14,200 persons. According to the La'i'opua Planned Community Kealakehe Master Plan (September 1990) (hereinafter referred to as the La'i'opua Master Plan), an east-west (mauka-makai) roadway which would extend through the Villages of La'i'opua and link Mamalahoa Highway to Queen Kaahumanu Highway is needed. This recommended roadway is called Kealakehe Parkway in the La'i'opua Master Plan. HFDC completed the portion of Kealakehe Parkway within the Villages of La'i'opua in August, 1995. The proposed completion of Kealakehe Parkway beyond the limits of the Villages of La'i'opua is the subject of this final EIS.



LEGEND

 Recommended change to Urban

Source: State Land Use District Boundary Review: Hawaii, 1995.



**RECOMMENDED STATE LAND USE DISTRICT BOUNDARIES
KEALAKEHE PARKWAY EIS**

Figure
3-4

West Hawaii Regional Plan

The Office of State Planning's West Hawaii Regional Plan (November 1989) (hereinafter referred to as the Regional Plan) includes goals and objectives for West Hawaii development. The Regional Plan also designated "subregional planning areas," one of which is the Keahole to Kailua-Kona area. The Regional Plan directed the County of Hawaii Planning Department to implement a planning process for this area. The Keahole to Kailua Development Plan (hereinafter referred to as the K to K Plan) was the result of this planning process, and is discussed below under County plans.

Island of Hawaii Long Range Highway Plan

The Island of Hawaii Long Range Highway Plan (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 distributions. The Long-Range Plan identified major roadway corridors that would require improvements if they are to provide sufficient capacity to accommodate traffic demands. The Long-Range Plan stated that a new east-west (mauka-makai) road is needed between Mamalahoa Highway and Queen Kaahumanu Highway to provide access and circulation within the Kealakehe area. This recommended roadway was intended to meet year 2010 traffic demands and was given the second highest priority in Tier One of the Long-Range Plan. Tier One projects address corridors that have the greatest capacity needs. The roadway would begin at a grade-separated interchange on Queen Kaahumanu Highway and continue east (mauka) to intersect Mamalahoa Highway near Palani Road.

3.1.3.2 HAWAII COUNTY PLANS AND CONTROLS

Hawaii County General Plan

The Hawaii County General Plan (November 1989) (hereinafter called the County Plan), established goals and objectives and applied them to geographic areas, including North Kona. The County Plan includes proposed east-west (mauka-makai) connections between Mamalahoa Highway and Queen Kaahumanu Highway in the vicinity of Kealakehe Parkway.

A Land Use Pattern Allocation Guide (LUPAG) Map has been prepared to suggest future land uses in the County. The land use for the project corridor shown on the LUPAG map is urban expansion (see Figure 3-5).

Hawaii County Zoning

Areas within and surrounding the corridor have County zoning classifications of Agriculture and Unplanned.

Hawaii County Special Management Area

The Special Management Area (SMA) was established pursuant to the 1975 Shoreline Protection Act. The proposed Parkway is not located within the SMA.

Keahole to Kailua Development Plan

The K to K Plan was prepared to help guide the overall development of North Kona and is the implementing tool for the County Plan. The K to K Plan was adopted by the Hawaii County Council in November 1990. Figure 3-6 shows the planning area of the K to K Plan. The K to K Plan proposes the following new facilities:

- a new civic and business center;
- approximately 4,500 new residential units to be built by 2010;
- a municipal golf course;
- a regional sports complex;
- a West Hawaii branch of the University of Hawaii; and
- resort development in the range of 1,500 units.

The K to K Plan recommended roadway improvements including two new east-west (mauka-makai) roadways linking Queen Kaahumanu Highway and Mamalahoa Highway. One of these proposed roadways, "Kealakehe Drive", has an alignment similar to that proposed for Kealakehe Parkway. Figure 2-1 shows the land use and roadway plan from the K to K Plan.

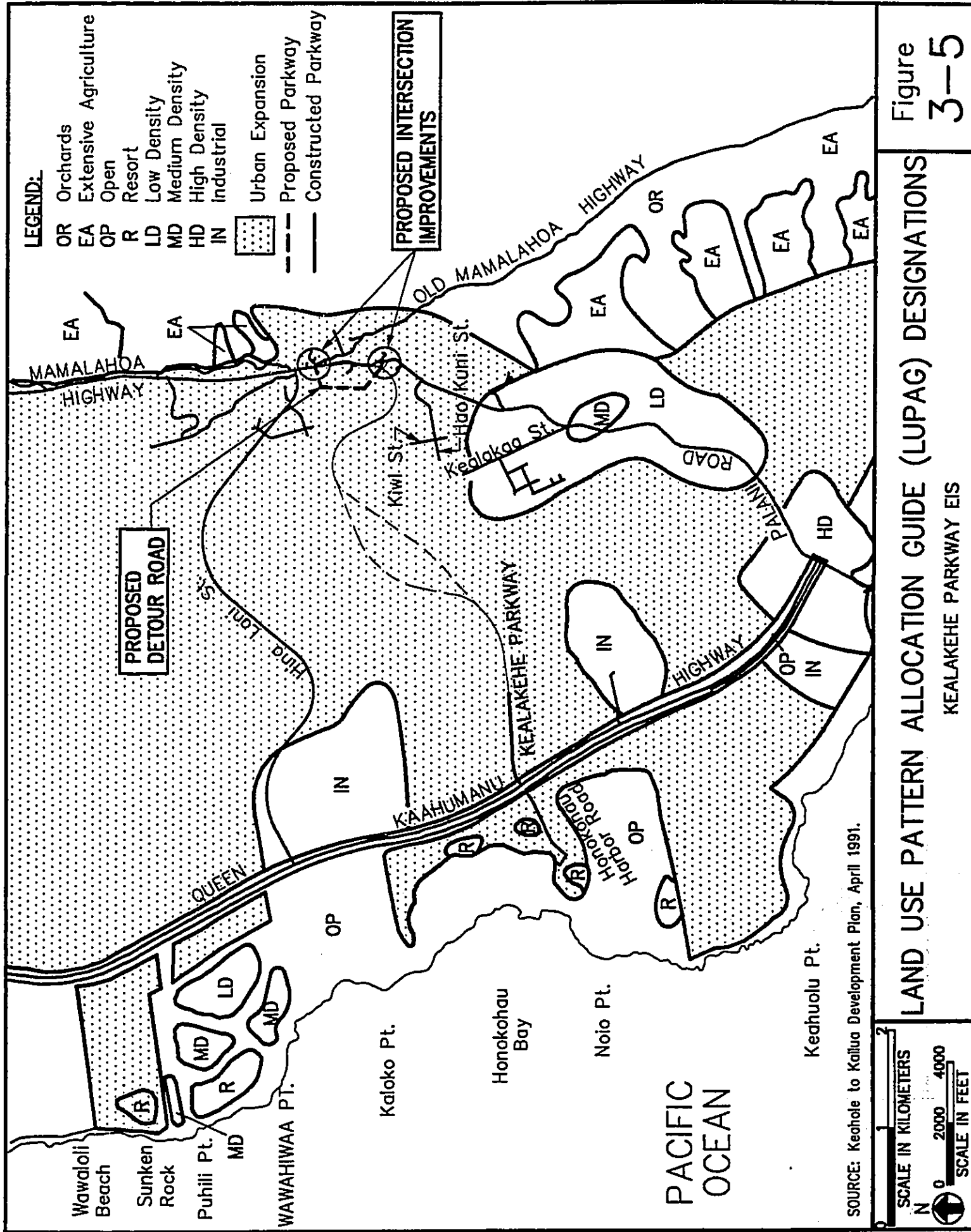
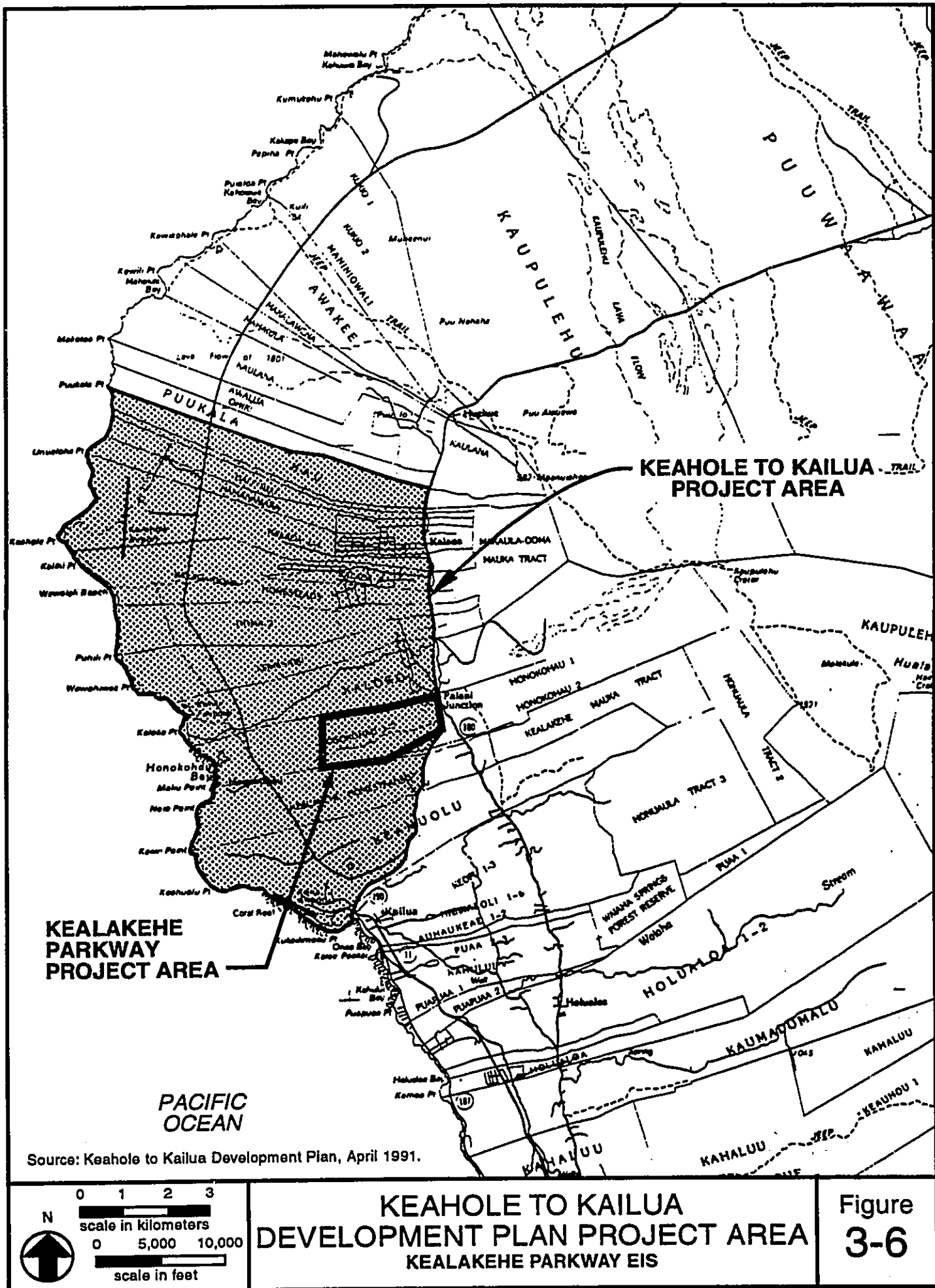


Figure 3-5



In summary, recent planning documents (such as the La'i'opua Master Plan and the K to K Plan) anticipate substantial population growth and development of infrastructure in this area, including a connector road between Queen Kaahumanu Highway and Mamalahoa Highway where the completion of Kealakehe Parkway is now proposed.

3.2 SOCIAL AND ECONOMIC ACTIVITY

3.2.1 Population and Ethnicity

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). Table 3-3 shows particularly high growth rates (greater than 60 percent) in South Kohala and North Kona, where several major resorts were developed in the 1980s and early 1990s. Although the population of North Kona grew faster than the entire island, the island has been growing rapidly overall. It increased in population by approximately 45 percent between 1970 and 1980, and by nearly 31 percent between 1980 and 1990.

Table 3-3

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.

The ethnic breakdown of West Hawaii is shown on Table 3-4. Overall, the population contains a significantly higher percentage of whites and a significantly lower proportion of Japanese when compared with the ethnic breakdown of Hawaii County.

**Table 3-4
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	11%	950	10%	581	14%	25,044	21%
Hawaiian	1,800	24%	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.

The other racial groups' proportion of West Hawaii's population is roughly the same as the proportion for the entire island.

3.2.2 Housing

Table 3-5 indicates the total number of single- and multiple-housing units available in the West Hawaii area. Although the number of residential units increased by nearly 55 percent between 1980 and 1990, West Hawaii's population increased at a slightly higher rate (almost 58 percent) during the same period. In North Kona specifically, population increased approximately 62 percent, while the housing supply increased at a slower rate (44 percent).

Table 3-5
HOUSING TRENDS IN WEST HAWAII

	1980	1990	% Change
NORTH KONA			
1 - Unit	3,648	6,144	68%
2+ Units	3,275	3,846	17%
Total	6,923	9,990	44%
SOUTH KONA			
1 - Unit	1,751	2,586	48%
2+ Units	327	342	5%
Total	2,078	2,928	41%
NORTH KOHALA			
1 - Unit	983	1,394	42%
2+ Units	141	146	4%
Total	1,124	1,540	31%
SOUTH KOHALA			
1 - Unit	1,560	2,910	87%
2+ Units	406	1,325	226%
Total	1,966	4,235	115%

Sources: U.S. Department of Commerce, Bureau of the Census, 1980 General Housing Characteristics Hawaii- Census of Housing and 1990 Census of Population and Housing Summary Population and Housing Characteristics Hawaii.

There are no minority or low-income communities within the general vicinity of the project limits. Near the eastern (mauka) terminus, there are five residences used by Palani Ranch employees.

3.2.3 Employment and Income

The civilian labor force within the County increased from 43,550 to 61,550 between 1980 and 1990, approximately 41 percent. Hawaii County experienced fluctuations in the unemployment rate in the early to mid-1980s. Unemployment declined from 7.5 percent to 3.8 percent between 1986 and 1990, however.

Median household incomes in West Hawaii are generally higher than the median household income for Hawaii County (which was \$29,712 in 1989). In 1989, income ranged from \$29,617 in Census Tract 213 in South Kona to \$40,489 in Census Tract 215.97 in North Kona. All the census tracts in North Kona had populations with median household incomes greater than the countywide median in 1989. Census tract 215.02, with a medium household income of \$33,103, was the lowest in North Kona.

3.2.4 Environmental Justice

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority and Low Income Populations," signed February 11, 1994, requires federal agencies, including the FHWA, to identify and avoid "disproportionately high and adverse" effects of federal projects on the health and environment of minority and low income populations.

In order to comply with the provisions of the Executive Order, the following must be addressed:

- The relationship of Executive Order 12898 to the project:
- Existing minority populations and low income groups and communities in the project corridor:
- Public participation efforts with minority and low income populations:
- Sensitivity to minority and low income neighborhoods and communities:
- Any health risks to the minority and low income groups:

- Measures to avoid, minimize, and/or mitigate impacts; and
- An analysis of the impacts on sensitive communities.

3.2.5 Likely Future Social Trends

3.2.5.1 CHARACTERISTICS OF ECONOMIC GROWTH

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-South Kohala region, and, since most proposed hotel developments within the County are located in this region, it is expected that this concentration in North Kona-South Kohala will continue.

3.2.4.2 GEOGRAPHIC DISTRIBUTION OF GROWTH

Population projections for the island have been made by the State Department of Business and Economic Development and Tourism (DBEDT). Table 3-6 displays these projections through the year 2020. "De facto" population includes the number of visitors on the island (average daily visitor population) in addition to the resident population. These projections, which were made in 1996, predict a 2015 Hawaii County resident population of 189,100, which is 56 percent higher than the County's 1990 population.

Table 3-6

POPULATION PROJECTIONS FOR HAWAII COUNTY

	Year				
	1995	2000	2010	2015	2020
Resident Population	<u>137,200</u>	<u>149,600</u>	<u>173,900</u>	<u>189,100</u>	<u>205,400</u>
Defacto Population	<u>155,400</u>	<u>172,100</u>	<u>207,600</u>	<u>228,700</u>	<u>251,800</u>

Source: Hawaii State Department of Business, Economic Development and Tourism, December 1996.

The Hawaii County Planning Department distributed the 1988 Series M-K Projections among the nine districts of the island. Table 3-7 displays the projected population allocated to the West Hawaii region through the year 2010, the last year of 1988 projections. According to the County Plan, West Hawaii's population will be nearly 46 percent of the island's resident population by the year 2005, and North Kona will comprise 25 percent of the island's population by the year 2005. According to the La'i'opua Planned Community Kealakehe Master Plan (September 1990), North Kona's population will comprise 27 percent of the island's population, or 56,200 people, by the year 2010. This share of islandwide population will be greater than North Kona's share of the island's population in 1990 (19 percent).

Table 3-7

POPULATION PROJECTIONS FOR THE WEST HAWAII REGION

	Year			
	1995	2000	2005	2010
District				
North Kona	29,300	36,400	45,200	56,200
South Kona	8,900	10,100	11,400	12,900
North Kohala	4,400	5,000	5,600	6,300
South Kohala	11,600	15,300	20,100	26,500
West Hawaii Total	54,200	66,800	82,300	101,900
West Hawaii Share of Islandwide Population	38%	42%	46%	49%

Source: KPMG Peat Marwick, Market Assessment for Kealakehe Planned Community, Exhibit II-C, July 1990.

The County Planning Department has also developed three sets of population projections based on growth in the visitor industry. The Series A projections are the most conservative, assuming very modest growth in the visitor industry and the demise of the sugar industry. The Series C projections are the most optimistic, assuming very high rates of growth in the visitor industry. Table 3-8 shows the County population projections for the three sets of assumptions in selected areas.

Table 3-8

**HAWAII COUNTY PLANNING DEPARTMENT PROJECTIONS
YEAR 2005**

	Series		
	A	B	C
Hawaii County	173,000	217,000	258,000
West Hawaii	78,715	98,829	117,390
North Kona	43,250	54,350	64,500
South Kona	10,899	13,671	16,254
North Kohala	5,363	6,721	7,998
South Kohala	19,203	24,087	28,638

Source: Hawaii County Planning Department, The General Plan Hawaii County, November 1989.

Table 3-9 displays the projected housing demand in selected districts. Since the population of West Hawaii is projected to grow substantially, a demand for approximately 25,540 units of new housing in West Hawaii by the year 2010 has been projected in a market study for the Villages of La'i'opua (Market Assessment for Kealakehe Planned Community (July 1990)). In North Kona, the demand for new housing could be 9,130 units by 2005 and 13,680 by 2010 (La'i'opua Master Plan). This represents an average increase of 570 units per year.

Table 3-9

PROJECTED HOUSING DEMAND IN WEST HAWAII

District	Year			
	1995	2000	2005	2010
North Kona	2,920	5,800	9,130	13,680
South Kona	1,210	1,720	2,210	2,870
North Kohala	370	630	850	1,160
South Kohala	1,540	3,020	4,830	7,440
West Hawaii	6,240	11,450	17,330	25,540

Source: KPMG Peat Marwick, Market Assessment for Kealakehe Planned Community, Exhibit IV-E, July 1990.

3.3 INFRASTRUCTURE AND PUBLIC FACILITIES

3.3.1 Transportation

3.3.1.1 ROADWAY FACILITIES

The region's roadway facilities are shown in Figure 1-3. The area is presently served by two State highways, Mamalahoa Highway and Queen Kaahumanu Highway. Mamalahoa Highway is a two-lane minor arterial that provides circulation between Waimea and Kona along an eastern (mauka), inland alignment.

Queen Kaahumanu Highway is a two-lane principal arterial that provides regional circulation between South Kohala and Kona, and access to the Keahole Airport and resorts on the Kawaihae Coast. The SDOT is presently studying the widening of Queen Kaahumanu Highway to four lanes between Keahole Airport and Palani Road.

Three County thoroughfares presently serve the project area, Old Mamalahoa Highway, Palani Road and Kuakini Highway. Old Mamalahoa Highway provides circulation and access to agricultural and residential areas on the eastern (mauka) slopes above Kailua-Kona. Palani Road is generally a narrow two-lane facility that connects Mamalahoa Highway and Queen Kaahumanu Highway, although Palani Road is a four-lane divided facility between Queen Kaahumanu Highway and Alii Drive. Kuakini Highway is primarily a two-lane north-south facility that provides access to the Kona industrial area.

Several two-lane street facilities provide east-west (mauka-makai) circulation in the North Kona District. These include Hina Lani Street, Honokohau Harbor Road, and Kaiwi Street. Kealakaa Street is a local two-lane roadway that is generally aligned north-south. Kaiminani Drive is a two-lane minor arterial that extends in the east-west (mauka-makai) direction and provides access into Kona Palisades Estates.

3.3.1.2 TRAFFIC CONDITIONS

Since intersection capacities usually control overall roadway operations, traffic conditions at seven critical intersections within the study area were evaluated using methodologies in the 1985 Highway Capacity Manual (HCM). Peak hour field observations were conducted at the following intersections:

- Mamalahoa Highway and Kaiminani Drive;
- Mamalahoa Highway/Palani Road and Old Mamalahoa Highway;
- Queen Kaahumanu Highway and Kaiminani Drive;
- Queen Kaahumanu Highway and Honokohau Harbor Road/Kealakehe Parkway;
- Queen Kaahumanu Highway and Kaiwi Street;
- Queen Kaahumanu Highway and Palani Road; and
- Palani Road and Kealakaa Street.

Additional information is provided in the Kealakehe Parkway Feasibility Study and Environmental Impact Statement: Traffic Impact Report (November 1993), hereinafter referred to as the Traffic Report.

Existing operating conditions at these intersections were classified by Level-of-Service (LOS). The 1985 HCM defines six Levels-Of-Service labeled A through F, corresponding to best through worst conditions, respectively. The levels are defined by average user delays, a measure of driver discomfort, frustration, fuel consumption, and lost travel time. A detailed definition of the Levels-Of-Service values is provided in the Traffic Report.

Table 3-10 summarizes the existing Levels-Of-Service at the intersections studied. Many turning movements currently experience undesirable Levels-Of-Service conditions of E or F during a.m. and/or p.m. peak hours.

Roadway capacity analyses were also conducted on selected roadway segments. Operating conditions on critical segments are shown on Table 3-11. Several roadway segments experience undesirable Levels-Of-Service of E or F during the a.m. and/or p.m. peak periods.

Table 3-10

**EXISTING LEVELS-OF-SERVICE
AT SELECTED INTERSECTIONS**

Intersections	A.M. Peak	P.M. Peak
Mamalahoa Hwy/Kaiminani St		
Left-turn from major street	A	A
Left-turn from minor street	C	D
Right-turn from minor street	A	A
Mamalahoa Hwy/Palani Rd/ Old Mamalahoa Hwy		
Left-turn from major street	A	A
Left-turn from minor street	E	D
Right-turn from minor street	A	A
Palani Rd/Kealakaa St		
Left-turn from major street	B	A
Shared lane from minor street	F	C
Queen Kaahumanu Hwy/Kaiminani St		
Left-turn from major street	A	A
Left-turn from minor street	E	E
Right-turn from minor street	A	A
Queen Kaahumanu Hwy/Kealakehe Pkwy/Harbor		
NB left-turn from major street	A	B
Shared lane from Harbor	C	E
Queen Kaahumanu Hwy/Kaiwi St		
Left-turn from major street	C	E
Shared lane from Kaiwi St	F	F
Left-turn from Kaiwi St	F	F
Right-turn from Kaiwi St	A	F

Source: Parsons Brinckerhoff, Kealakehe Parkway Feasibility and Environmental Impact Statement: Traffic Impact Report, November 1993.

Table 3-11

**EXISTING LEVELS -OF-SERVICE
ON SELECTED ROADWAY SEGMENTS**

Location	A.M. Peak	P.M. Peak
Mamalahoa Highway		
n/o Kaiminani Dr.	D	D
s/o Kaiminani Dr.	E	D
n/o Old Mamalahoa Hwy.	E	D
Palani Road		
s/o Old Mamalahoa Hwy.	E	E
e/o Kealakaa St.	E	E
w/o Kealakaa St.	F	F
e/o Queen Kaahumanu Hwy.	F	F
Queen Kaahumanu Hwy.		
n/o Kaiminani Dr.	D	D
s/o Kaiminani Dr.	D	D
s/o Hina Lani St.	C	C
s/o Kealakehe Pkwy.	E	E
n/o Kaiwi St.	E	E
n/o Palani Rd.	E	E
s/o Palani Rd.	E	E

Source: Parsons Brinckerhoff, Kealakehe Parkway Feasibility and Environmental Impact Statement: Traffic Impact Report, November 1993.

Notes: 1) n/o = north of
2) s/o = south of
3) e/o = east of
4) w/o = west of

3.3.1.3 ACCIDENT DATA

Information on accidents occurring between 1986 and 1990 was collected from SDOT for the following roadway segments:

- Queen Kaahumanu Highway between Kaiminani Drive and Palani Road;
- Mamalahoa Highway between Kaiminani Drive and Old Mamalahoa Highway; and
- Palani Road between Old Mamalahoa Highway and Queen Kaahumanu Highway.

Between 1986 and 1990, there were:

- 196 reported accidents on Queen Kaahumanu Highway between Keahole Airport and Palani Road;
- 104 reported accidents on Mamalahoa Highway between Kaiminani Drive and Old Mamalahoa Highway; and
- 165 reported accidents on Palani Road between Old Mamalahoa Highway and Queen Kaahumanu Highway.

Palani Road experiences a relatively high proportion of non-collision and fixed object accidents. Between 1986 and 1990, non-collision and fixed object accidents represented 63 percent of the total number of accidents. On Queen Kaahumanu Highway, only 32 percent of the accidents were non-collision and fixed object.

More information is presented in the Traffic Report.

3.3.1.4 BICYCLE AND PEDESTRIAN FACILITIES

The goals of the Bike Plan Hawaii: A State of Hawaii Master Plan (April 1994) are to promote the efficient and safe movement of bicycles throughout the State, and to make biking in the State attractive to visitors and residents.

The Bike Plan identifies bikeways that exist, are currently under design, or are proposed. The term bikeway refers to a bicycle route, lane or path. Within the vicinity of the proposed Kealakehe Parkway, the only bicycle facility is an existing bicycle route running along Queen Kaahumanu Highway from Keahole Point to Kailua-Kona (see Figure 3-7).

According to the Bike Plan, no bikeways are proposed along Kealakehe Parkway, the section of Mamalahoa Highway to which Kealakehe Parkway will connect, Palani Road, or Old Mamalahoa Highway.

There is no existing pedestrian circulation system within the Kealakehe Parkway corridor because it is an open agricultural area. However, existing pedestrian facilities within the Kealakehe area include sidewalks in residential areas and public access to the shoreline.

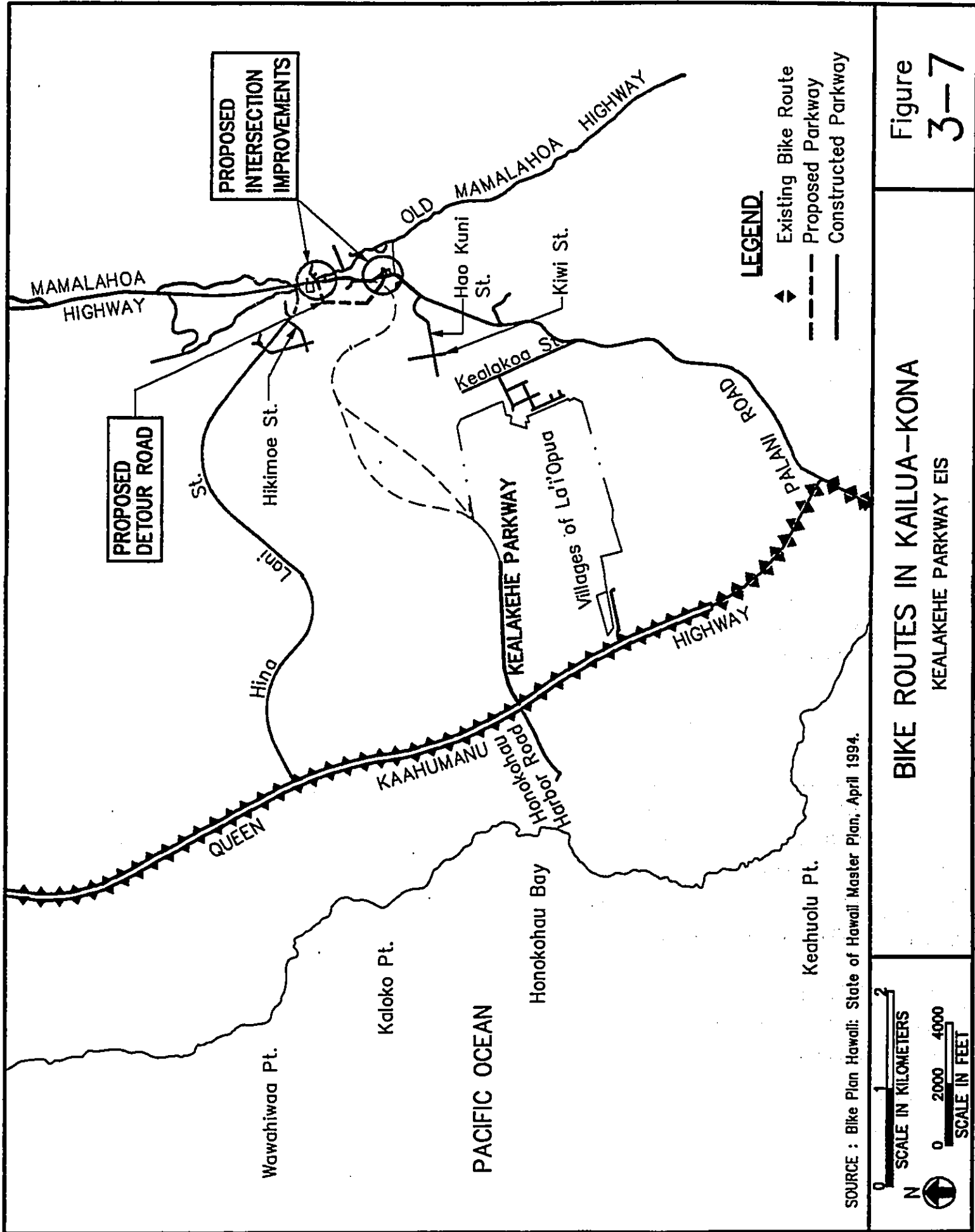


Figure 3-7

BIKE ROUTES IN KAILUA-KONA
KEALAKEHE PARKWAY EIS

The island of Hawaii has an official trail system presently consisting of approximately 60 trails and paths. One of these, Mamalahoa Trail (State-owned, public access), crosses the portion of Kealahou Parkway that has already been constructed within the Villages of La'i'opua. Trails which are no longer used were among the archaeological resources encountered in studies performed for this project (see Section 4.12).

3.3.2 Water Supply System

Kahalu'u Wells A, B, C, and D are located about 2.4 kilometers (1.5 miles) east (mauka) of the coast just north of Keauhou. There is also a new potable water well in the vicinity of Kalaoa, east (mauka) of Mamalahoa Highway.

Four primary reservoirs serve the project area:

- a 1000 m³ (300,000-gallon) reservoir and booster station at the 99.1 meter (325-foot) elevation on Palani Road;
- a 400 m³ (100,000-gallon) reservoir and booster station at the 180 meter (590-foot) elevation on Palani Road;
- a 200 m³ (50,000-gallon) reservoir and booster station at the 285 meter (935-foot) elevation on Palani Road; and
- a reservoir and a booster station at the 99.1 meter (325-foot) elevation on the northern boundary of the Villages of La'i'opua.

In order to meet future water demand, the Water Use and Development Plan (February 1992) proposes that approximately 46 wells be drilled about 4.0 to 5.6 kilometers (2.5 to 3.5 miles) inland in the 460 to 550 meter (1,500- to 1,800-foot) water resource development zone. Wells would be tied into an 80 centimeter (30-inch) transmission line to bring water to the junction of Palani Road and Mamalahoa Highway. The estimated cost of this water system is \$218.9 million.

In addition, to help satisfy the demand of the Villages of La'i'opua, HFDC must drill new wells above the 490 meter (1,600-foot) elevation and provide a water distribution system.

3.3.3 Drainage System

There are no drainage structures within the project corridor since the property is undeveloped. The project corridor consists primarily of lava and thin layers of Kaimu, Punaluu, Kona, and Puna soils; rainwater generally percolates rapidly.

3.3.4 Wastewater System

The proposed corridor is not presently served by a central wastewater collection system. Residential, commercial and industrial activities in the vicinity presently rely on private cesspools or treatment plants. Hawaii County has just completed construction of a 10 900 m³/day (2.89 mgd) sewage treatment plant (STP) on State-owned land in the Kealakehe area, west (makai) of Queen Kaahumanu Highway (see Figure 3-1). This plant will replace the 4000 m³/day (1.0 mgd) STP at the Kona Industrial Subdivision that serves Kailua Village. The new plant will serve the Villages of La'i'opua, but its capacity will need to be increased by about 8000 m³/day (2.0 mgd).

3.4 CLIMATE AND AIR QUALITY

3.4.1 Local Meteorology

The State lies within a region of prevailing northeasterly trade winds, but the western coast of the island of Hawaii is sheltered from the trade winds by high mountains. Local winds such as land/sea breezes and/or upslope/downslope winds tend to dominate the wind pattern in the Kealakehe area. During the daytime, winds typically move onshore. At night, winds generally move downslope and out to sea. Still air occurs about 29 percent of the time at nearby Keahole Point.

The annual temperature in the area is affected by elevation above sea level, distance inland and exposure to trade winds. The project site's leeward location results in greater variation in the temperature profile compared to windward locations at the same elevation. At the Old Kona Airport located about 3 kilometers (2 miles) to the south, average daily minimum and maximum temperatures are 19°C and 28°C (67°F

and 83°F), respectively. The extreme minimum temperature on record at this location is 8.3°C (47°F), and the extreme maximum is 34°C (93°F).

Because of its leeward location, the Kealahou area has a relatively dry climate. Some 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 is about 61 centimeters (24 inches), but may vary significantly from year to year. Average annual rainfall at the project site is estimated to range between 64 and 76 centimeters (25 and 30 inches), depending on elevation.

3.4.2 National and State Ambient Air Quality Standards

National Ambient Air Quality Standards ("NAAQS") have been established for for seven major air pollutants: carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O₃), particulate matter smaller than 10 microns (PM₁₀), PM_{2.5} (particulate matter smaller than 2.5 microns), sulfur oxides (SO_x), and lead. The standards for ozone and PM_{2.5} were established in September 1997. National and State standards are summarized in Table 3-12.

3.4.3 Attainment Status of the Project Area

The 1977 Clean Air Act Amendments require that EPA designate areas as being in or out of compliance with the NAAQS. Areas in compliance are termed "attainment areas."

The State of Hawaii is an attainment area for carbon monoxide, ozone (old standard) and particulate matter smaller than 10 microns in diameter (PM₁₀), the pollutants of primary concern for a roadway project.

Table 3-12

NATIONAL AND STATE AMBIENT AIR QUALITY STANDARDS

Pollutant	Standards		
	Hawaii State Standard	Federal Primary Standard	Federal Secondary Standard
Carbon Monoxide			
1 Hour	10 mg/m ³ (9 ppm)	40 mg/m ³ (35 ppm)	40 mg/m ³ (35 ppm)
8 Hours	5 mg/m ³ (4.5 ppm)	10 mg/m ³ (9 ppm)	10 mg/m ³ (9 ppm)
Nitrogen Dioxide			
1 Hour	--	--	--
24 Hour	--	--	--
Annual (Arithmetic)	70 ug/m ³	100 ug/m ³	100 ug/m ³
<u>PM_{2.5}</u>			
<u>24 Hour</u>		<u>65 ug/m³</u>	<u>65 ug/m³</u>
<u>Annual (Arithmetic)</u>		<u>15 ug/m³</u>	<u>15 ug/m³</u>
PM ₁₀			
24 Hour	--	150 ug/m ³	150 ug/m ³
Annual (Arithmetic)	--	50 ug/m ³	50 ug/m ³
Ozone			
1 Hour	100 ug/m ³		
<u>8 Hour</u>		<u>150 ug/m³ (.08 ppm)</u>	<u>150 ug/m³ (.08 ppm)</u>
Sulfur Dioxide			
3 Hour	1300 ug/m ³	--	1300 ug/m ³
24 Hour	365 ug/m ³	365 ug/m ³	--
Annual (Arithmetic)	80 ug/m ³	80 ug/m ³	--
Lead			
3 Months (Arithmetic)	1.5 ug/m ³	1.5 ug/m ³	1.5 ug/m ³

Sources: Hawaii Department of Health, Environmental Management Division, Clean Air Branch, 1997.

3.4.4 Monitored Air Quality

Air pollutant levels in Hawaii are monitored at a network of sampling stations operated under the supervision of the State Department of Health (DOH). Very little data is

available for the Kona area. On the recommendation of the DOH, Hawaii Electric Lighting Company was contacted for ambient air quality data. The data, presented in Table 3-13, are from the Keahole and Kawaihae monitoring stations and are the most

recent data publicly available. Sulfur dioxide, nitrogen dioxide and nitric oxide data is from the Keahole monitoring station. Carbon monoxide data is from the Kawaihae monitoring station. The data show that existing ambient air quality satisfies State and federal standards. These data are representative of the air quality conditions within the study corridor.

3.5 NOISE AND VIBRATION

3.5.1 Characteristics and Measurement of Sound

Several characteristics of sound affect its impact. These include the sound level (loudness), the frequencies involved, the period of exposure to the noise, and changes or fluctuations in the noise levels during exposure.

Loudness is measured in units called decibels. Since the human ear does not perceive all pitches or frequencies equally, noise levels are adjusted, or weighted, to correspond to human hearing. This adjusted unit is known as the A-weighted decibel, or dBA.

Since dBA describes a noise level at just one moment, and very few noises are constant, ways of describing noise over extended periods are needed. One way is to describe the fluctuating noise heard over a period as if it were a steady, unchanging sound. This type of an average is called the equivalent sound level, Leq. Leq is the constant sound level that, for a given situation and time period (e.g., 1-hour, Leq (1); hourly, Leq(h); or 24 hours, Leq(24)), conveys the same sound energy as the actual time varying sound.

Table 3-13

MONITORED AMBIENT AIR QUALITY LEVELS

Parameter/Location	1984	1985	1991
<u>Sulfur Dioxide/Keahole</u>			
Period of Sampling (month)	12	1	---
No. of 24 Hour Samples	325	25	---
Range of 24 Hour Values (ppb)	<1-8	<4-6	---
Avg. Daily Value (ppb)	0.1	0.6	---
No. of Federal/State AAQS Exceedances	0	0	---
<u>Nitrogen Dioxide/Keahole</u>			
Period of Sampling (month)	12	1	---
Number of 24 Hour Samples	325	25	---
Range of 24-Hour Values (ppb)	<1-2	<1-2	---
Average Daily Value (ppb)	1.1	1.4	---
Number of Federal/State AAQS Exceedances	0	0	---
<u>Nitric Oxide/Keahole</u>			
Period of Sampling (month)	12	1	---
Number of 24-Hour Samples	325	25	---
Range of 24-Hour Values (ppb)	<1-9	<1-7	---
Average Daily Value (ppb)	2	2.6	---
Number of Federal/State AAQS Exceedances	0	0	---
<u>Carbon Monoxide/Kawaihae</u>			
Highest one-hour level (ppm)	---	---	1.0
Second highest one-hour level (ppm)	---	---	0.3
Highest eight-hour level (ppm)	---	---	0.6
Second highest eight-hour level (ppm)	---	---	0.3

Source: State of Hawaii Department of Health, "Hawaii Air Quality Data for the Period of January 1985 to December 1987."

Notes: 1) Sulfur dioxide, nitrogen dioxide and nitric oxide monitored at the Keahole Monitoring Station
2) Carbon monoxide monitored at Kawaihae

3.5.2 Federal Noise Abatement Criteria

The FHWA has developed noise impact criteria. The State has adopted the FHWA criteria as its standard. Table 3-14 lists the FHWA Noise Abatement Criteria (NAC).

Table 3-14

FHWA NOISE ABATEMENT CRITERIA (NAC)

Activity Category	Leq for Noisiest Traffic Hour	Description of Activity Category
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 area is to continue to serve its intended purpose.
B	67(Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B.
D	---	Undeveloped lands.
E	52(Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: Federal Aid Highway Program Manual (FHPM), 23 CFR Part 772 "Procedures for Abatement of Highway Traffic Noise," 1982.

Notes: Leq(h) is the one-hour energy equivalent sound level.

The interior noise levels (activity) apply to:

- (1) indoor activities for those parcels where no exterior noise sensitive land use or activities are identified, or
- (2) those situations where the exterior activities are either remote from the highway or shielded in some manner so that the exterior activities will not be affected by the noise, but the interior activities will.

The study area includes some land uses in FHWA noise categories B (residential, schools, churches and parks) and E (residences, schools and churches) which could be affected by noise from the proposed project.

3.5.3 Existing Conditions

Field measurements of existing noise levels were taken on January 7, 1993. Measurements were taken at the Kona Church of Christ parking lot east (mauka) of Palani Road; approximately 20 meters (66 feet) southeast of the intersection of Palani Road and Old Mamalahoa Road; and in the residential area off Hikimoe Street south of Halolani Street. The measurements taken are summarized in Table 3-15.

Table 3-15

MEASUREMENTS OF EXISTING NOISE LEVELS (Leq)

Location	A.M. Peak	Midday	P.M. Peak
Kona Church of Christ	58.5	N/A	56.6
Palani Road and Old Mamalahoa	65.9	67.5	64.1
Hikimoe Street	49.0	N/A	N/A

Source: Parsons Brinckerhoff, 1993.

The measurements show that one site monitored slightly exceeds the NAC exterior standard of 67 Leq for residences, churches and schools. The intersection of Palani Road/Old Mamalahoa Highway has an ambient noise level of 67.5 Leq. Two sites, Kona Church of Christ and Hikimoe Street, have noise levels substantially below the NAC standard, at around 57 and 49 Leq, respectively.

3.6 GEOLOGY, PHYSIOGRAPHY, AND SITE CONTAMINATION

3.6.1 Geology and Physiography

Hawaii is the youngest and largest of the eight major islands in the Hawaiian group. The island is comprised of five volcanoes: Kohala, Mauna Kea, Mauna Loa, Kilauea, and Hualalai.

The proposed project will be located on the lower slopes of Hualalai, extending from the completed section of Kealakehe Parkway within HFDC's Villages of La'i'opua, to an elevation of about 400 meters (1,300 feet) near Mamalahoa Highway. The site would be 11 to 13 kilometers (7 to 8 miles) west (makai) of Hainoa Crater, Hualalai's summit, on a lava flow estimated to be between three and five thousand years old.

Two types of lava typical of shield volcanoes, a'a and pahoehoe, occur along the proposed alignment. A'a lava flows have two components - a hard, dense core and a sharp, jumbled portion known as *clinker*. Pahoehoe lavas generally have a smooth flow surface and contain abundant small gas vesicles. Flows range from less than a meter to several meters in thickness. In the project area, soils on these lava flows have a maximum thickness of 25 centimeters (10 inches). Construction of the proposed Parkway will therefore occur directly in rock with little need to remove soil overburden.

3.6.2 Hazardous Waste Sites

The land use analysis in Section 3.1 indicated that there has only been one commercial or industrial use (Orchard Marine) within the proposed corridor. In addition, field observations have not revealed prior industrial or commercial activities along the alignments. However, the following government agencies were contacted for information on reported hazardous material releases or spills within the corridor:

Federal:

- The United States Department of Interior, Geological Survey (USGS), Water Resources Division, Honolulu, Hawaii.

State of Hawaii:

- Department of Land and Natural Resources (DLNR), Commission on Water Resources Management, Honolulu, Hawaii;
- Department of Health (DOH), Environmental Management Division, Honolulu, Hawaii;
- Department of Health (DOH), Hazardous Waste Section, Honolulu, Hawaii;
- County of Hawaii; and
- Fire Department, Hilo, Hawaii.

Private:

- Hawaii Electric Light Company (HELCO), Inc., Hilo, Hawaii.

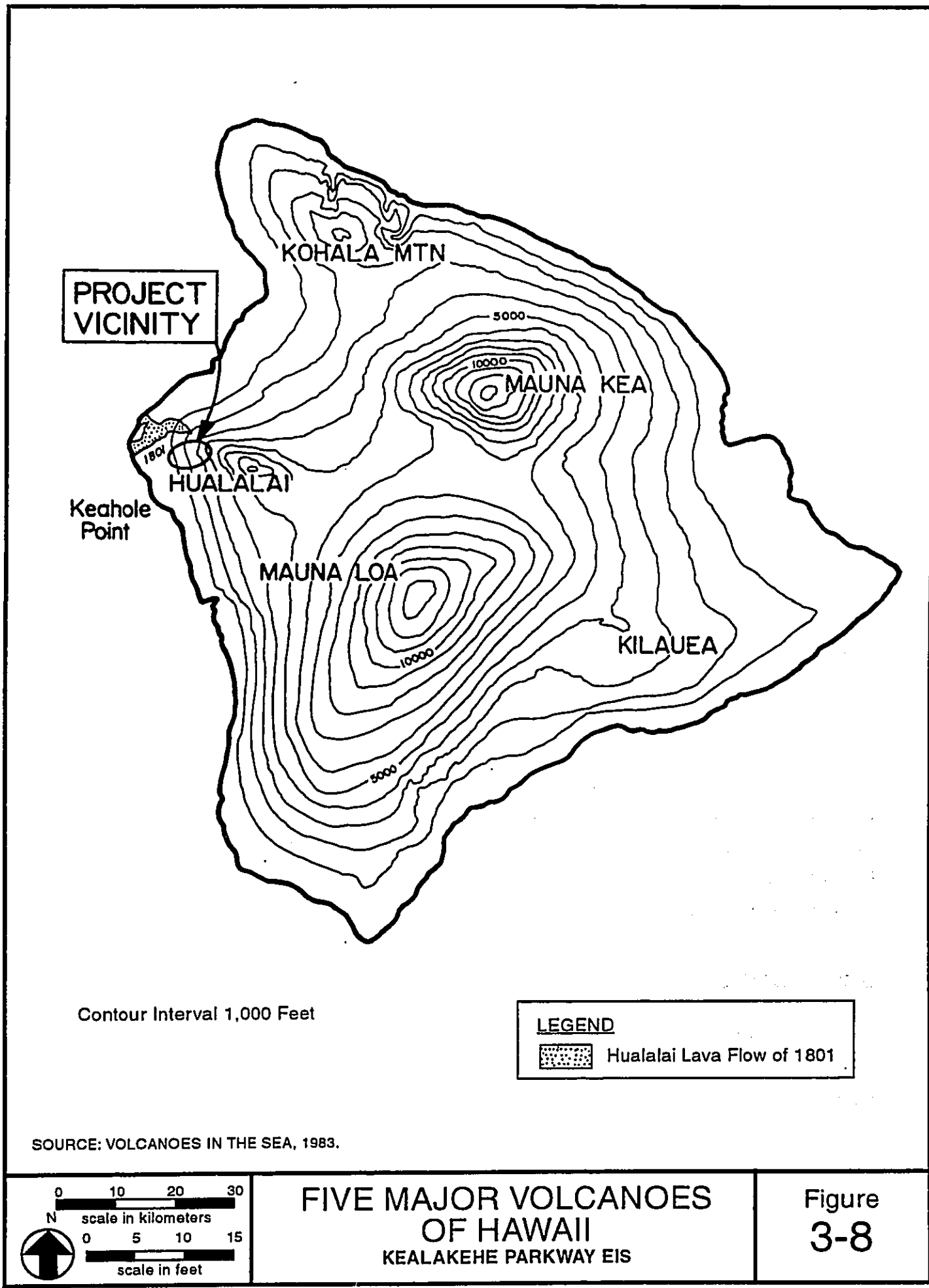
Correspondence with these groups is presented in Appendix A.

Almost all of these agencies indicated that there were no known hazardous waste sites within the study area. However, the Kailua Landfill was identified about 800 meters (2,600 feet) south of the proposed alignments. This landfill has been closed. A list of cesspools in the vicinity of the project was also obtained. Since the project is located in a critical wastewater disposal area (as determined by the Hawaii County Waste Water Advisory Committee), no new cesspools will be allowed. Existing and pending Underground Injection Control (UIC) permits in the area were also disclosed.

In summary, based on site inspections and records maintained by the government agencies listed above, there appear to be no existing hazardous or solid waste disposal sites along either alignment. The nearest solid waste facility is approximately 800 meters (2,600 feet) from the corridor. Therefore, hazardous waste or other contamination is not expected to be encountered during construction.

3.7 VOLCANOLOGY AND EARTHQUAKES

The study corridor is on the western slope of Hualalai. However, Hualalai is older than Kilauea and Mauna Loa, which are still active, and its eruptions occur less frequently. Hualalai last erupted in 1800-1801 from several vents on its northwest rift zone. Lava emerged at about the 490 meter elevation (1,600-foot) level, north of the project site, and created a flow that extended to the ocean north of Keahole Point (see Figure 3-8).



The intervals between the latest volcanic eruptions, including the 193 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. Each type of hazard has been given a hazard zone designation. According to the State Land Use District Boundary Review (1992), "the level of hazard can vary considerably within any hazard zone, either gradually or abruptly. Differences can best be determined by specific site studies."

Lava flows are the most common of the direct hazards, and pose the greatest threat to property. The Hualalai area has been designated Hazard Zone 4 for lava flows (with Zone 9 having the lowest risk and Zone 1 having the highest). Hazard zone boundaries are approximate. The percent of Zone 4 covered by fresh lava from Hualalai since 1800 is approximately five percent, while the total coverage of Zone 4 by fresh lava since 1240 is less than 15 percent (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 significant hazard in the Hualalai area. A second zone (2A) is designated for Hainoa Crater (the summit) and the northwest rift zone of Hualalai. However, the project area is about 8 kilometers (5 miles) outside of this zone.

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. As air mixes with the gas, however, its concentration diminishes.

Indirect hazards, such as earthquakes, are usually associated with volcanic eruptions. Earthquakes are produced by movements of the volcano as it swells before an eruption and shrinks during an eruption.

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) will be more likely on the other side of the island near Mauna Loa and Kilauea.

3.8 WATER RESOURCES

3.8.1 Surface Water Bodies, Floodplains, and Wetlands

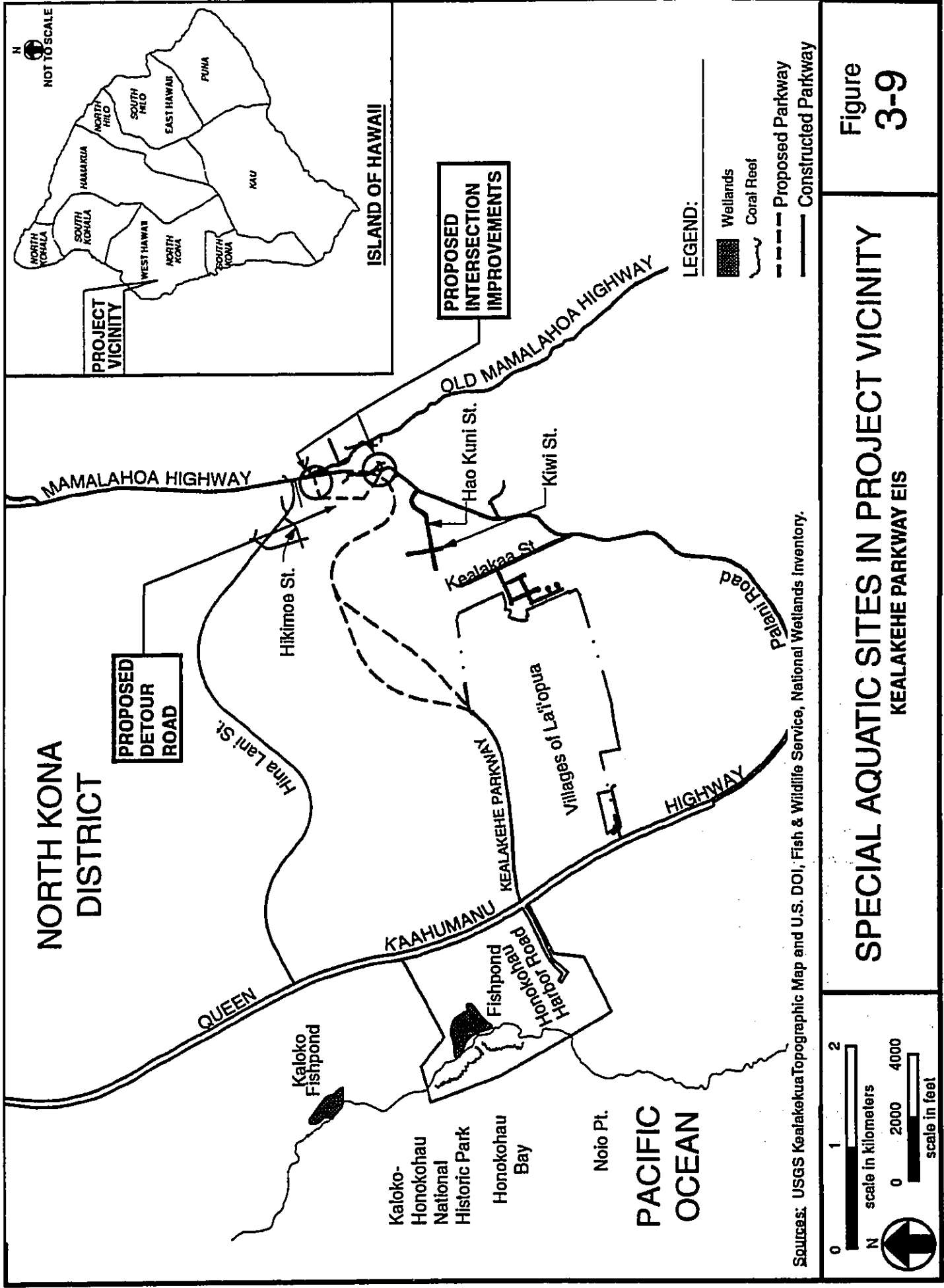
Based on site reconnaissance and United States Geological Survey (USGS) quadrangle maps, there are no streams or other surface water bodies within the project area. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps do not identify any floodways or floodzones within the project vicinity.

As shown on Figure 3-9, the project area does not contain any special aquatic sites (as defined in 40 CFR 230 Subpart E). These are no vegetated shallows, riffle and pool complexes, mud flats, sanctuaries and refuges, or anchialine pools in the project vicinity. Coral reefs and wetlands are located along the coastline, several kilometers from the project site.

3.8.2 Groundwater

According to correspondence from the State of Hawaii DLNR-Commission on Water Resource Management (February 1993), the project overlies basal groundwater. Water levels range from about 0.5 meters (1.5 feet) above mean sea level at Queen Kaahumanu Highway to approximately one meter (four feet) near Mamalahoa Highway, north of the proposed Kealakehe Parkway.

A State well drilled at elevation 244 meters (800 feet) along Palani Road encountered a head of 0.5 meters (1.5 feet) and contained water having a chloride concentration of



2800 ppm. The well is now sealed. There are no data regarding monitoring wells and well permit information for the remaining project area.

Because of this basal lens, the water is slightly brackish where water levels are greater than 0.9 meters (3.0 feet) and becomes more brackish where the head drops to less than 0.6 meters (2.0 feet). Although this basal water is not potable, it can be used for irrigation. Due to the fresh basaltic lava flows, contaminants can easily percolate downwards and enter this resource.

According to State Department of Health (DOH) records, there are no public drinking water sources close to the proposed roadway. However, private wells may exist.

Groundwater injection wells occur in the area, and the Villages of La'i'opua has submitted applications for additional groundwater injection wells.

3.9 TERRESTRIAL FLORA

The following section summarizes the conclusions of the botanical survey conducted for this project (Kealakehe Parkway Extension Alternatives 10 and 11 Botanical Survey (October 1993)). This section focuses on the methodology of the survey and the plant community types encountered. The potential involvement of endangered and threatened species is discussed in Section 3.11.

The botanical survey was conducted on July 22 and 23, 1993. The objectives of the survey were to:

- provide a general description of the major vegetation types;
- inventory the flora;
- search for endangered and threatened species protected by federal and State laws; and
- identify areas of potential environmental problems or concerns and propose mitigation measures.

The survey methodology included examining relevant secondary sources such as prior botanical studies conducted in the area, maps and aerial photographs.

Botanical resources were identified within a 91 meter (300-foot) survey corridor which extended 46 meters (150 feet) on both sides of the proposed centerline of the alternatives. Plant associations and distribution, substrate types, topography, exposure, drainage, moisture gradients, and grazing damage were recorded. Plant identifications were made in the field when possible. Plants that could not be identified in the field were collected for later identification.

Four major vegetation types were identified:

- mixed forest;
- grassland;
- koa haole shrubland; and
- mixed shrubland.

Most of the land through which the two alignments traverse has been previously disturbed. These vegetation types are described in more detail in the Kealakehe Parkway Extension Alternatives 10 and 11 Botanical Survey (October 1993).

The area supports native species, including some which are rare and endangered. Approximately 17 percent of the 143 vascular plants surveyed are native species. Among the native species, 18 are indigenous, and seven are endemic. Endangered, threatened and rare species are discussed in detail in Section 3.11.

3.10 TERRESTRIAL FAUNA

The following section summarizes the Survey of the Avifauna and Feral Mammals at Kealakehe Property, North Kona, Hawaii (August 1989), which was prepared for the Villages of La'i'opua, and subsequent coordination for this project that has occurred with the U.S. Fish and Wildlife Service (FWS) and DLNR. A new faunal survey for the completing segment of Kealakehe Parkway was not performed because:

- the survey at the Villages of La'i'opua was conducted immediately adjacent to the proposed Kealakehe Parkway corridor;
- habitat conditions for animals are quite similar to the conditions at the Villages of La'i'opua; and
- the survey results at the Villages of La'i'opua were unremarkable.

It is therefore expected that the findings of the survey at the Villages of La'i'opua are relevant to the proposed completion of Kealakehe Parkway.

The objectives of the survey at the Villages of La'i'opua were to:

- document what bird and mammal species occur on the property or may likely occur given the type of habitats available;
- provide some baseline data on the relative abundance of each species as well as general habitat preferences;
- determine the presence or likely occurrence of any native fauna, particularly any that are considered endangered or threatened;
- if endangered or threatened species occur or are likely to be found on the property, identify what features of the habitat may be essential for these species and suggest how those resources may best be protected; and
- determine if the property contains any special habitats that, if lost or altered, might result in a significant impact on the fauna in this region of the island.

The survey recorded 18 species of exotic birds. The abundant species were Japanese White Eye (*Zosterops japonicus*), Common Myna (*Acridotheres tristis*), House Finch (*Carpodacus mexicanus*) and Zebra Dove (*Geopelia striata*). No endemic land or water birds, nor resident or migratory indigenous birds, were recorded.

Endangered and threatened species are discussed in more detail in Section 3.11.

The survey documented a few feral mammals: Indian Mongoose (*Herpestes auropunctatus*), feral cats and the skeletal remains of pigs and cows.

In conclusion, the observed zoological resources of the project site appear to consist of common, abundant species that are broadly dispersed, although some rare and endangered sea birds may occasionally fly over (see Section 3.11).

3.11 ENDANGERED AND THREATENED SPECIES

This section focuses on rare species encountered in the project area. Coordination with the U.S. FWS and DLNR has occurred in accordance with the requirements of the federal "Endangered Species Act of 1973" (16 U.S.C. 1531-1543) and the State of

Hawaii's Endangered Species Act (Chapter 195D, HRS). Agency coordination is discussed in more detail in Section 4.11. Copies of correspondence may be found in Appendix B.1.

Section 7 of the Endangered Species Act of 1973 grants authority to and imposes requirements upon federal agencies regarding endangered and threatened species of fish, wildlife, or plants ("listed species") and habitat areas of such species that have been designated as critical ("critical habitat"). In addition, the State of Hawaii's Endangered Species Act (Chapter 195D, HRS) states that any species designated endangered or threatened under the federal law is also deemed endangered or threatened under the State law. In addition to the species that have been determined to be endangered or threatened pursuant to the "Endangered Species Act," DLNR may, by rules adopted pursuant to Chapter 91, determine any indigenous species of aquatic life, wildlife, or land plant to be endangered or threatened for a number of factors.

"Endangered" species are those that are in danger of extinction throughout all or a significant part of their ranges. A "threatened" species is one which is likely to become an endangered species in the foreseeable future. "Candidate 1" species are those for which the U.S. FWS has evidence of vulnerability, but there are not enough data to support formal proposal as an endangered or threatened species.

In December, 1994, the U.S. FWS had formally listed 51 plant species on the island of Hawaii as endangered, with seven of those 51 species being extinct on the island. (Plants Hawaiian Islands Listed, Proposed or Candidate Species Under the U.S. Endangered Species Act (December 15, 1994)). Only one plant species was proposed for listing as endangered. In addition, there were 16 "Candidate 1" species, with three of the 16 being extinct on Hawaii.

In September and October of 1995, the U.S. FWS proposed the listing of a total of 74 Hawaiian plants for addition to the threatened and endangered species list (see Appendix B.2). Only 16 of the 74 plants are found on the island of Hawaii. However, none of the 16 will be disturbed by the proposed Parkway.

In November, 1997, the U.S. FWS provided the current status of the plants noted in their original species letter dated March 3, 1994, and a follow-up letter dated

September 26, 1997. The status of species described below reflects the November, 1997 correspondence.

Pritchardia affinis, the endemic Loulu Palm, is located in the project corridor. This species was listed as endangered by the U.S. FWS in 1994 (Report on the Endangered Loulu Palms (*Pritchardia affinis*) Found within the Palani Road Corridor (April 1995)). Historically, the palms were found exclusively in the Kohala Mountains and along the western and southwestern coasts of the island of Hawaii. Most plants are associated with areas of human habitation or development, and were cultivated by the Hawaiians.

Six endangered species are also found on a'a lava flows near the alignments, as follows:

- Two uhiuhi trees (*Caesalpinia kavaiensis*), an endangered species, were found immediately south of the Alternative 10 corridor. (Uhiuhi trees are also present on the a'a lava flow which occupies much of the Villages of La'i'opua (Botanical Survey Kealakehe Planned Community (November 1989)). A preserve has been established within the Villages of La'i'opua to protect those trees, as well as other rare plants found at the Villages of La'i'opua.
- Wahine noho mauna or aupaka (*Isodendron pyriform*) occurs within the Villages of La'i'opua.
- 'Aiea (*Nothocestrum breviflorum*), a tree belonging to the tomato family, is found within the Villages of La'i'opua and east (mauka) of the Kaloko rock quarry.
- a sedge (*Mariscus fauriei*) is also located east (mauka) of the quarry (L.A. Mehrhoff, U.S. FWS).
- Halapepe (*Pleomele hawaiiensis*) is considered rare. One plant was found within the Villages of La'i'opua, and individuals were also found east (mauka) of the rock quarry (Botanical Survey Kealakehe Planned Community (November 1989)).
- Several *Neraudia ovata* plants were found on the a'a lava flow east (mauka) of the quarry.

Two species of plants designated "Candidate 1" and "Species of Concern" are located along Alternative 10 or on surrounding lands, as follows:

- Ko'oko'olau (*Bidens micrantha ssp. ctenophylla*) is found on the lower slopes of Hualalai. The alignment of Alternative 10 passes through a population of this

species. It is also found within the Villages of La'i'opua (Botanical Survey Kealakehe Planned Community (November 1989)).

- Puapilo or maipilo (*Capparis sandwichiana*), considered vulnerable (Manual of the Flowering Plants of the Hawaiian Island (1990)), is widespread throughout the dry coastal and lowland areas.

In addition, the FWS has noted in subsequent coordination that several species of sea birds may transit the area. These species are:

- the endangered Hawaiian petrel (*Pterodroma phaeopygia sandwichensis*):
- the threatened Newell's shearwater (*Puffinus auricularis*): and
- the "Candidate 1" band-rumped storm petrel (*Oceanodroma castro cryptoleucura*).

3.12 HISTORIC AND ARCHAEOLOGICAL RESOURCES

The following is a summary of the archaeological inventory survey conducted for this project, An Archaeological Inventory Survey And Limited Subsurface Testing of the Proposed Kealakehe Parkway Extension, Alternatives 10 And 11 and the Addendum Report to the Kealakehe Parkway Extension (June 1994). The significance assessment of the archaeological findings has been approved by the Department of Land and Natural Resources State Historic Preservation Office (SHPO), in accordance with the requirements of the National Historic Preservation Act (36 CFR Part 800) and the Advisory Council on Historic Preservation (ACHP) (see Appendix C.1). The SHPO has determined that all sites found within the construction zone of the proposed Parkway and detour road are "eligible" for the National Register of Historic Places.

The archaeological survey was divided into two parts: an inventory survey of the alternatives and an inventory survey of the detour road. For purposes of this discussion, the inventory survey refers to Alternative 10 and Alternative 11 (the Preferred Alternative), and the addendum report refers to the detour road.

The archeological inventory survey for the project covered over 83.4 hectares (206 acres) of three "ahupua'a" in the North Kona district: Kealakehe and Honokohau I and II. An "ahupua'a" is a Hawaiian land division that extends from forested uplands across agricultural lands to the ocean (mauka to makai). Most of the project area lies within the "ahupua'a" of Honokohau I and II. The portion of Kealakehe Parkway

currently under construction lies largely within the Kealakehe "ahupua'a" and was previously surveyed.

The archaeologists conducted pedestrian sweeps, typically spaced at 15 to 23 meter (50- to 75-foot) intervals, within a corridor extending 46 meters (150 feet) on both sides of the centerlines of alignment alternatives. New and previously identified sites and/or complexes were documented and mapped, along with the general condition of the site, surrounding topography and vegetation, and the presence of subsurface remains and artifacts. Lava tubes encountered were explored to the fullest extent possible. Limited subsurface testing was conducted at representative sites. Radiocarbon dating was used on selected sites containing datable materials. Possible burial sites were tested for evidence of human remains. Sites and features dismantled for excavation were reconstructed after excavation to maintain their integrity. Previous archaeological studies in Honokohau I and II were also reviewed.

Archaeological feature and site types found within the corridors were then evaluated for significance in accordance with the criteria of the National Register of Historic Places. A recommendation of "no further work" suggests that sufficient data has been collected to mitigate any adverse effect of the project on that particular site. A recommendation of either "data recovery" or "preservation" indicates that a site is more special, and potential project impacts on the site should be further assessed.

Eighty-two sites showing evidence of prehistoric and historic activities were identified along both alignment alternatives. Eighty-three sites were identified by the SHPO (see Appendix C.1). However, one of these sites is not within the project area. The 82 sites contain 286 features. The sites were categorized into 19 types (see Table 3-16). Multi-feature site complexes were the most commonly identified archaeological resource, with 37 site complexes being found within the alignment corridors. These site complexes have been broken down into their formal feature types in Table 3-17. Modified outcrops, terraces, enclosures, and walls/wall segments comprise nearly 75 percent of all features, and indicate relatively intense use of the area for agricultural purposes.

Of all the sites encountered, 7 sites were recommended for either complete or partial preservation; 60 sites were recommended for data recovery; and 15 sites were recommended for no further work.

Table 3-16

OCCURRENCES OF FORMAL FEATURE AND SITE TYPES

Formal Feature/Site Type	# of Occurrences	% of Total Features
<i>Ahu</i>	2	0.7
Alignment	2	0.7
Cart Road	2	0.7
Cupboard	1	0.4
Enclosure	53	18.5
Kerbstone Trail	5	1.7
Lava Blister/Tube	11	3.9
Modified Outcrop/Sink	28	9.8
Mound	40	14.0
<i>Papamu</i>	4	1.4
Paved Area	3	1.0
Petroglyph	11	3.9
Platform	26	9.1
Site Remnant	2	0.7
Stone Basin	1	0.4
Terrace	55	19.2
Trail	3	1.0
Wall/Wall Segment	37	12.9
TOTAL	286	100.0

Source: Cultural Surveys Hawaii, An Archaeological Inventory Survey and Limited Subsurface Testing of the Proposed Kealakehe Parkway Extension, Alternatives 10 and 11, June 1994.

Table 3-17

**SITE COMPLEXES ALONG ALTERNATIVE 10 AND THE PREFERRED ALTERNATIVE
BY FORMAL FEATURE TYPE**

State Site #	CSH Site #	Site Type	Function	Probable Age	Alignment Alternative
50-10-28-13188	**	Site complex	Hab.(R); Agriculture	PH	10
50-10-28-16009	**	Site complex	Hab.(T); Agriculture	PH	10
50-10-28-16041	**	Site complex	Agriculture	PH	10
50-10-28-18178	105	Site complex	Hab.(R); Agriculture	PH	PA
50-10-28-18182	110	Site complex	Hab.(P)	PH	PA
50-10-28-18220	150	Site complex	Hab. (P); Ag.; Water; Special; Rit.	PH	PA
50-10-28-18221	151	Site complex	Agriculture	PH	PA
50-10-28-18228	158	Site complex	Agriculture; Special	PH	PA
50-10-28-18237	167	Site complex	Hab. (P); Agriculture	PH/H	10
50-10-28-18249	179	Site complex	Agriculture	PH/H	10
50-10-28-18251	181	Site complex	Agriculture	PH	10
50-10-28-18253	183	Site complex	Hab. (P); Agriculture	PH	10
50-10-28-18271	201	Site complex	Hab.	PH	10
50-10-28-18272	202	Site complex	Agriculture	PH	10
50-10-28-18284	214	Site complex	Hab. (P); Special	PH	10
50-10-28-18294	228	Site complex	Hab. (P)	PH	10
50-10-28-18296	230	Site complex	Hab. (P)	PH	10
50-10-28-18363	308	Site complex	Homestead-Hab. (P); Transportation	H	10 & PA
50-10-28-18383	329	Site complex	Homestead-Hab. (P)	H	10 & PA
50-10-28-18725	1	Site complex	Agriculture; Animal Containment	PH/H	10 & PA
50-10-28-18727	29	Site complex	Hab. (P); Special; Agriculture	PH	PA
50-10-28-18728	39	Site complex	Homestead-Hab. (P)	H	10 & PA

Table 3-17

**SITE COMPLEXES ALONG ALTERNATIVE 10 AND THE PREFERRED ALTERNATIVE
BY FORMAL FEATURE TYPE
(continued)**

State Site #	CSH Site #	Site Type	Function	Probable Age	Alignment Alternative
50-10-28-18729	41	Site complex	Hab. (R); Ag; Special; Water	PH/H	10 & PA
50-10-28-18736	53	Site complex	Hab. (P); Agriculture	PH/H?	10
50-10-28-18737	54	Site complex	Agriculture	PH/H?	PA
50-10-28-18739	56	Site complex	Hab. (T); Agriculture	PH	PA
50-10-28-18740	57	Site complex	Hab. (P)	PH	PA
50-10-28-18746	63	Site complex	Agriculture	PH	10
50-10-28-18747	64	Site complex	Hab. (R); Agriculture	PH	10
50-10-28-18748	65	Site complex	Hab. (R); Agriculture	PH	10
50-10-28-18750	67	Site complex	Hab. (R); Burial; Agriculture	PH	10
50-10-28-18751	68	Site complex	Agriculture	PH	10
50-10-28-18754	71	Site complex	Agriculture; Special	PH	10
50-10-28-18755	72	Site complex	Agriculture; Special	PH	10
50-10-28-18757	74	Site complex	Hab. (R); Agriculture	PH	10
			Agriculture	PH	10 & PA

Source: Cultural Surveys Hawaii, An Archeological Inventory Survey and Limited Subsurface Testing of the Proposed Kealahou Parkway Extension, Alternatives 10 and 11, June 1994.

Notes: ** PHRI Site

State site numbers less than -18725 are previously identified sites.

FUNCTION	PROBABLE AGE	ALTERNATIVE ROUTE
Hab. - Habitation (P) - Permanent	PH - Prehistoric	PA - Preferred Alternative
(R) - Recurrent	H - Historic	
(T) - Temporary	PH/H - Prehistoric & Historic	
Ag. - Agriculture	? - Not conclusive	
Rit. - Ritual		

Archaeological investigations of the detour road are discussed in the Addendum Report to Kealakehe Parkway Extension (June 1994). Nine sites showing evidence of archaeological significance were identified within the detour road corridor, one of which, State 50-10-28-18730, was also identified in the main roadway corridor. Therefore, while the addendum report records the presence of nine sites, only eight of these sites are additional to the sites previously identified. Therefore, the total number of sites along both alignment alternatives and the detour road is 90.

Limited subsurface testing was conducted at two representative sites within the detour road corridor. No human remains were discovered. Site types and their functional interpretation include two habitational platforms, two habitational enclosures, three complexes (two habitational/agricultural and one agricultural), and two cattle walls. Of the nine sites encountered, none were recommended for complete preservation. However, one site was recommended for partial preservation. Six sites were recommended for data recovery, and two were recommended for no further work.

No historic architectural structures exist within either alternative corridor or detour road corridor.

3.13 PARKLANDS

Kaloko-Honokohau National Historic Park is located on a coastal strip extending from Wawahiwa'a Point to the Honokohau Boat Harbor. It is north of the proposed Kealakehe Parkway and west (makai) of Queen Kaahumanu Highway. The Kaloko-Honokohau National Historic Park also includes more than 200 hectares (500 acres) of State-controlled waters of Honokohau Bay.

A high level of citizen involvement helped establish the Kaloko-Honokohau National Historical Park, and, in light of the substantial population increase projected for the North Kona district, the Park will be a significant open space resource for the future population. The Park includes ponds, sacred Hawaiian burial sites, habitat for waterbirds, waterfowl and shorebirds, and many archaeological resources.

The federal government owns the onshore portion of Kaloko-Honokohau National Historic Park, up to the State's right-of-way for Queen Kaahumanu Highway.

Immediately adjacent to the Park is Honokohau Boat Harbor, a small marina with a launching ramp, boat storage facilities, boat repair and a restaurant.

There are no State parks within the immediate project area. The only State park in the Kailua-Kona area is the Old Airport State Park. It is located approximately 5 kilometers (3 miles) south of the project site.

No County, community, or neighborhood parks are within or adjacent to the corridor. However, the Villages of La'i'opua is expected to include two neighborhood parks and a park adjacent to the proposed elementary school.

The County has proposed development of a golf course south of Kealakehe Parkway and east (mauka) of Queen Kaahumanu Highway (see Figure 3-1). This 18-hole public course will include a one hectare (three-acre) clubhouse site that will be accessible from major roadways. It will serve the community and provide a physical buffer around the existing landfill.

3.14 VISUAL AND AESTHETIC RESOURCES

The following viewsheds (i.e., the area visible from a viewpoint) exist in the project area:

- Makai: the Kona Coast and ocean, including Honokohau Harbor and marina, and Kaloko-Honokohau National Historic Park; and
- Mauka: the slopes of Hualalai.

The western (makai) viewshed from the corridor is primarily open agricultural land with scattered residential and commercial structures. Houses occur along Palani Road and both sides of the upper portion of Hina Lani Street. As the hillside slopes downward towards the coast beyond the residences, it is covered with low vegetation and thickets. Scattered trees are also present. Queen Kaahumanu Highway runs near the coast, and beyond Queen Kaahumanu Highway is the shoreline and ocean.

From the bottom of the slope looking eastward (mauka), the east (mauka) side of Queen Kaahumanu Highway has several large warehouses extending from Hina Lani Street almost to the proposed Kealakehe Parkway intersection. The view upslope from the highway is further obstructed by a quarry and a large water tank.

Upslope beyond the quarry and water tank, the view of Hualalai is an important scenic resource. Until recently, the hillside appeared as mostly open space with some residential development. However, with the completion of Kealakehe Parkway within the HFDC project, one now views the lower portion of Kealakehe Parkway extending part way up the hillside.

CHAPTER 4.0
ENVIRONMENTAL CONSEQUENCES

CHAPTER 4.0 ENVIRONMENTAL CONSEQUENCES

This chapter describes the environmental consequences of the Preferred Alternative (Alternative 11) and Alternative 10. The No Build alternative is used as a basis for comparison. Except where noted, "Kealakehe Parkway" refers to all elements of the proposed action: the Preferred Alternative or Alternative 10 and the detour road.

4.1 LAND USE AND SOILS

4.1.1 Potential Impacts

The project's primary land use impacts will be on existing agricultural activities in the roadway corridor. The relocation of one residential structure will be required.

4.1.1.1 IMPACTS ON AGRICULTURAL ACTIVITIES

The No Build alternative would not affect agricultural activities in the corridor (cattle grazing, coffee and fruit tree orchards, and beekeeping).

The impact on agriculture will not be a substantial regional impact because of the extent of pasture lands remaining in areas east (mauka) of the project. The North Kona district has approximately 69 000 hectares (170,000 acres) designated by the State as agricultural lands. The removal of about 26 hectares (64 acres) through conversion to a transportation use, or 0.0004 percent of the total acreage designated agricultural in North Kona, will not be a major regional impact.

Although the project's impacts on agricultural activities will not be significant from a regional perspective, there will be an impact on agricultural activities occurring at Palani Ranch. Measures to mitigate these impacts are discussed in Section 4.1.3.

Of the seven soil types present in the project corridor, four will be directly affected by Kealakehe Parkway. These soils are not prime or unique farmlands, or farmlands of statewide or local importance.

Coordination with the U.S. Natural Resources Conservation Service (NRCS) was conducted. The NRCS was provided with form AD-1006, "Farmland Conversion Impact Rating," for determination of whether the project would be built on farmlands subject to the Farmland Protection Policy Act (FPPA). The NRCS scored Alternative 10 (Site A on the form) as 17 and the Preferred Alternative (Site B on the form) as 30. A score of less than 160 means that a site receives minimal consideration for protection under the FPPA, and is therefore not subject to the FPPA. (Form AD-1006 is presented in Appendix D.)

4.1.1.2 RELOCATIONS

Both Alternative 10 and the Preferred Alternative will minimize the need for relocations (minimizing the need for relocations was one of the screening criteria discussed in Section 2.2). Kealakehe Parkway will require the relocation of a leased residence on Palani Ranch property near the eastern (mauka) terminus of the project. No businesses will be relocated.

There are relocation sites available for the residential use that will be displaced, such as other lands owned by Palani Ranch. Available relocation assistance is discussed in more detail under "Mitigation Measures" (see Section 4.1.3).

4.1.2 Relationship of the Proposed Action to Land Use Plans, Policies, and Controls for the Affected Area

In the following discussion, the compliance of the proposed Kealakehe Parkway with relevant government plans, policies and controls is assessed. Kealakehe Parkway's conformance to these plans and policies is summarized in Table 4-1.

4.1.2.1 HAWAII STATE PLANS AND CONTROLS

Hawaii State Plan

The proposed project supports the goals of the Hawaii State Plan (June 1991) dealing with economic objectives and policies, the physical and natural environment, and transportation.

Table 4-1

COMPLIANCE WITH LAND USE PLANS AND POLICIES

Preparer	Plan	Year of Plan	Purpose or Description of Plan	Kealahoe Parkway's Conformance with Plan or Policy
State of Hawaii	Hawaii State Plan	1991	Broad series of goals, objectives and policies to guide overall planning in the State.	Consistent with State goals on the economy and the physical environment.
	Hawaii State Transportation Functional Plan	1991	Establishes guidelines in the transportation sector for implementing the State Plan.	Implementing actions in plan included the acquisition of land for the Parkway.
	Coastal Zone Management	1990	Establishes objectives and policies to protect coastal areas and resources.	Parkway conforms to objectives and policies in all seven CZM resource areas.
	Island of Hawaii Long Range Highway Plan	1991	Establishes a backbone circulation system for the island based on existing and projected land uses and population distributions.	Consistent with recommendation of a new four-lane arterial roadway aligned in an east-west direction through Kealahoe between Mamalahoa Highway and Queen Kaahumanu Highway.

Table 4-1
COMPLIANCE WITH LAND USE PLANS AND POLICIES
 (continued)

Preparer	Plan	Year of Plan	Purpose or Description of Plan	Kealahoe Parkway's Conformance with Plan or Policy
Hawaii County	Hawaii County General Plan	1989	Long-range comprehensive plan directing the development of the County of Hawaii.	Area of proposed Parkway is designated by Plan as urban expansion.
	Special Management Area	1975	Maintain and protect coastal areas for recreation, scenic, educational and scientific uses.	No portion of the proposed Parkway is located within the SMA area.
	Keahole to Kailua Development Plan	1988	Supersedes Kona Regional Plan. Guides the development for this area.	Consistent with roadway network portion of plan that includes mauka-makai roadways.

Source: Parsons Brinckerhoff, October 1993.

In accordance with the Plan's economic objectives and policies, Kealakehe Parkway 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.

In accordance with the objectives and policies for the physical and natural environment, the proposed Kealakehe Parkway will minimize impacts to the existing environment, and where unacceptable environmental impacts might occur, mitigation measures will be implemented. Since the proposed work will be located east (mauka) of Queen Kaahumanu Highway, it will not adversely affect the shoreline area. Impacts on the physical and natural environment are discussed in more detail in other sections of this chapter.

Kealakehe Parkway will ensure that the transportation needs of the Villages of La'i'opua and other existing and planned urban areas will be adequately met. It will also enhance access to Kaloko-Honokohau National Historical Park.

Although there are some policies with which the project appears to conflict, such as the preservation of open space, provision of affordable housing is a high priority. Housing requires infrastructure, and as existing infrastructure reaches and exceeds capacity, infrastructure improvements become necessary. In many instances, agriculture, open space, and housing are conflicting goals, especially where land is scarce, and the appropriate response is to strike a balance in the State and County plans. The balance that has been struck in these plans is to designate the vicinity of Kealakehe Parkway for urban expansion, and designate other areas for open space.

Transportation Functional Plan

Of the twelve Functional Plans, the Transportation Functional Plan (1991) is the most relevant. Kealakehe Parkway and Interchange was listed in the Transportation Functional Plan as one of the implementing actions for the road infrastructure system in West Hawaii.

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

The proposed work will be within the State's coastal zone. 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 Office of State Planning (OSP) Coastal Zone Management has reviewed the Program Assessment Form that was prepared for this project. On February 20, 1996, the OSP issued its concurrence with the CZM assessment. The CZM's Program Assessment Form and OSP determination is provided in Appendix E.

Island of Hawaii Long Range Highway Plan

Kealakehe Parkway will fulfill the recommendation of the Long-Range Plan to construct a new four-lane arterial east-west (mauka-makai) roadway through the Kealakehe area between Mamalahoa and Queen Kaahumanu Highways. The proposed action does not include the Kealakehe Scenic Route, a proposed roadway west (makai) of Queen Kaahumanu Highway. The purposes of constructing the Kealakehe Scenic Route are different from the purposes of Kealakehe Parkway, and this coastal roadway does not necessarily need to be aligned with the western end of Kealakehe Parkway to meet its goals. The completing segment of Kealakehe Parkway addressed in this document has independent functional utility apart from the Scenic Route.

4.1.2.2 HAWAII COUNTY PLANS AND CONTROLS

Hawaii County General Plan

Kealakehe Parkway is consistent with the County Plan by helping meet the infrastructure needs of the urban growth directed by the County Plan. Figure 3-5 showed that Alternative 10 and the Preferred Alternative will traverse zones designated for urban expansion on the County's LUPAG map.

Hawaii County Special Management Area (SMA)

Since no portion of the proposed Parkway is located in the SMA, the project will not require an SMA permit from the County of Hawaii.

Keahole to Kailua Development Plan

The K to K Plan (April 1991) describes Kealakehe Parkway as an integral part of the development scheme for the area (Section 3.1.3.2.4). The K to K Plan noted that the existing road network is inadequate to meet the needs of future growth, such as the Villages of La'i'opua which, alone, will increase the population by 14,200 persons. Figure 2-1 shows the roadway plan contained in the K to K Plan, and this roadway plan includes Kealakehe Parkway.

Summary

In conclusion, Kealakehe Parkway complies with appropriate State and County land use policies, plans, goals, objectives, and controls, and will facilitate implementation of the Hawaii State Plan, the Transportation Functional Plan, the Island of Hawaii Long Range Highway Plan, the Hawaii Country General Plan, and the Keahole to Kailua Development Plan.

The No Build alternative would not advance the implementation of the land use plans that have been developed for the area.

4.1.3 Mitigation Measures

Agricultural Activities

Measures to mitigate the impacts of the project on agricultural activities will consist of the following:

- provision of stockproof fencing wherever the right-of-way abuts grazing areas;
- provision of stockproof gates where needed for construction access and existing jeep roads;
- access to allow the maintenance of east-west (mauka-makai) waterlines, if necessary;

- provision for constructing corrals and loading facilities north and west (makai) of the lower section of the corridor to service those pasture areas which will otherwise be severed and isolated from the balance of the pasture areas while pasturage use continues;
- to the greatest degree possible, maintenance of existing paddocks, corrals, water distribution systems, and roads;
- preservation of beehive and orchard-related activities; and
- provision of access across the detour road between existing ranch employee houses and the agricultural areas.

Details of the stockproofing methods and other mitigation measures will be developed during the project's design phase.

Residential Relocation

Since Palani Ranch owns additional homes and vacant lands in the immediate vicinity, Palani Ranch may be able to provide an on-site location for the residential displacement created by the project. State and federal residential relocation assistance programs will be made available. For example, since the project will use federal funds, it will comply with the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, as amended. This federal program provides relocation assistance that is available to all residential relocatees without discrimination.

4.2 SOCIAL AND ECONOMIC ACTIVITY

4.2.1 Potential Impacts on Economic Activity

The No Build alternative would not create economic activity in the region. Moreover, since the No Build does not remedy existing or future traffic congestion or safety concerns, the No Build would actually be a drag on economic activity.

In contrast, the construction and operation of Kealakehe Parkway will have positive social and economic benefits through:

- the expenditure of construction funds;
- enhancing transportation service; and

- enhancing the value of bordering lands by potentially enhancing access.

The project will also increase land values in the general area by enhancing circulation and providing potential access to new areas. However, while property values will generally increase, the value of a few specific parcels may be negatively affected through the project's localized visual impacts on parcels which will be adjacent to future embankments, and perhaps through the reduced utility of some "remnant" parcels created by the roadway alignment.

4.2.2 Potential Social Impacts on Residential Areas

This section discusses the project's social impacts. The project's conformance with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, is discussed in Section 4.2.4.

Kealakehe Parkway will create minimal adverse social impacts on the surrounding areas since they are generally open space, except at the eastern (*mauka*) terminus. At this terminus, there are six residences used by Palani Ranch employees which will be between the proposed Kealakehe Parkway and the detour road. These residences will experience construction on all sides (Kealakehe Parkway to the east and the detour road to the west).

In the short-term, the detour road and its traffic will disturb these residences. Once constructed, through traffic will be diverted to the completed Kealakehe Parkway. Residential access, however, will be permanently rerouted to the detour road.

The completion of Kealakehe Parkway will have beneficial social impacts regionally by enhancing access and mobility, such as for the future residents of the Villages of La'i'opua.

The No Build alternative would not create social impacts on the neighborhoods in the area except in the area of the proposed eastern (*mauka*) terminus. The six-unit residential area is being considered for a proposed subdivision, so that even if Kealakehe Parkway were not to be built, construction activity proposed by others will still affect this area.

4.2.3 Potential Social Impacts on Commercial Areas

The No Build alternative would not have an impact on established business districts, such as Kailua-Kona and the Kaloko Industrial Park.

Kealakehe Parkway will not have a direct, long-term impact on established businesses and employment levels. The only business near the project area is Orchard Marine, a nursery, whose business activities will not be directly affected by the required right-of-ways of the build alternatives. Likewise, farm buildings will not be affected.

Ultimately, Kealakehe Parkway will have a positive indirect impact on nearby business areas by improving accessibility, regional circulation, and the level of transportation service. For example, HFDC is planning an 8.9 hectare (22-acre) shopping center on the northern boundary of the Villages of La'i'opua, east (mauka) of Queen Kaahumanu Highway. The Parkway will make this center highly accessible to people traveling from eastern (mauka) areas, improving its commercial viability.

The detour road will not affect businesses.

4.2.4 Conformance with Environmental Justice (EO 12898)

Table 3-4 "Ethnic Breakdown in West Hawaii" (Section 3.2.1) describes the population in the North Kona district as 59 percent white. Kealakehe Parkway will be constructed in open space areas currently used for agriculture and ranching. The only neighborhood that will be affected by the proposed project is a few houses located near the eastern (mauka) terminus of the project. Kealakehe Parkway will be constructed to the east (mauka) and south of this neighborhood, and the detour road will be constructed to the north and west (makai) of this neighborhood. The property is owned by Palani Ranch, and the houses are used as rentals for its employees. One of the houses in this neighborhood will be displaced. According to Palani Ranch, the tenants are minorities and earn a small to modest ranching income, supplemented by a housing allowance and farming income. Based on this information, this neighborhood deserves protection under the provisions of Executive Order 12898, Environmental Justice, because the residents are minorities and may be low income.

The provisions of Executive Order 12898 were tested to determine whether the project will have a disproportionately high and adverse effect on this existing community. The provisions of EO 12898 were summarized in Section 3.2.4 and include identifying minority and low income groups in the project corridor; conducting public participation efforts with the affected community; identifying potential health risks; and avoiding, minimizing and mitigating impacts.

With respect to the public participation requirement, public participation was actively solicited through a series of public informational and small group meetings. These meetings led to the development of 14 alternative Parkway alignments and two alternative detour road alignments, as described and evaluated in detail in Chapter 2.0.

The major social impact on the small residential area at the mauka (eastern) project terminus will be temporary construction on all sides (Kealakehe Parkway to the east and the detour road to the west), followed by the long-term enclosure of this area by roadways on berms.

Two measures are proposed to minimize the impacts to this community. The detour road has been designed to preserve the integrity of the community within the context of the existing land use. Early alignments for the detour road would have compromised the community by separating residential units from associated orchard and farming activities. The detour road was realigned to keep the community intact. Since this community currently uses substandard accesses to their homes, a portion of the detour road will remain after construction to provide permanent access. This will not only improve existing conditions, but will provide residents with access to the newly built Kealakehe Parkway. In addition, the landowner has discussed potential relocation sites for the residence to be relocated.

Access to the affected houses will be maintained throughout the construction period.

Kealakehe Parkway and the detour road will pose no health risks to the small residential community.

In conclusion, although the mauka (eastern) terminus of the project will affect a small neighborhood deserving EO 12898 protection, all of the relevant provisions of EO

12898 have been satisfied. Public participation was actively solicited, there are no health risks, and impacts have been avoided, minimized and mitigated. Therefore, there will be no disproportionate impact to minority and low-income populations.

4.2.5 Potential Impacts on Community Services and Tax Base

The No Build alternative would not have an impact on community services or the tax base.

Kealakehe Parkway will enhance the provision of community services by increasing accessibility of emergency vehicles. Accessibility to community facilities such as schools, recreation centers, churches and businesses will improve for area residents. Kealakehe Parkway will provide access to the new high school in the Villages of La'i'opua, so that high school traffic will not affect existing residential neighborhoods.

Property taxes will not be collected on the acreage converted to a transportation use. Therefore, the roadway will decrease yearly property tax revenues in Hawaii County by approximately \$1,500.

4.2.6 Mitigation Measures

Mitigation measures to lessen the impact on the residential land uses at the eastern (mauka) terminus of the project will be necessary. Mitigation measures will need to address:

- access to the homes between Kealakehe Parkway and the detour road during and after construction;
- dust control;
- runoff and erosion control; and
- noise controls.

Mitigation measures to address these concerns are described elsewhere in this final EIS.

4.3 INFRASTRUCTURE AND PUBLIC FACILITIES

4.3.1 Potential Transportation Impacts

4.3.1.1 METHODOLOGY

To analyze the project's impacts on transportation facilities, analyses were made of future traffic conditions for both the No Build and build alternatives. Forecasts of a.m. and p.m. peak hour traffic volumes for roadway segments were made for both scenarios for the year 2015. These forecasts were developed in conjunction with the planning work for the proposed Queen Kaahumanu Highway corridor improvements, the Long-Range Plan (May 1991) and previous traffic studies conducted within the area. Traffic modeling using the TRANPLAN model was then performed. Additional information is provided in the Kealakehe Parkway Feasibility Study and Environmental Impact Statement: Traffic Impact Report (November 1993).

4.3.1.2 2015 TRAFFIC CONDITIONS

No Build Traffic Conditions

The future No Build roadway network was modeled to develop a baseline condition against which to measure the traffic impacts of the build alternatives. The No Build roadway network included the following roadway improvements, in addition to the existing network:

- the segment of Kealakehe Parkway that was completed within the Villages of La'i'opua in August 1995; and
- the widening of Queen Kaahumanu Highway to a four-lane freeway between Kawaihae Road and Palani Road.

Under the No Build alternative, the intersection movements forecasted to have significant delays (LOS E OR F) during a.m. and/or p.m. peak hours are shown in Table 4-2. Similarly, Levels-Of-Service for selected roadway segments would have significant delays except where it is assumed that Queen Kaahumanu is widened to four lanes (see Table 4-3).

Table 4-2

**2015 NO-BUILD ALTERNATIVE
TRAFFIC CONDITIONS: INTERSECTIONS**

Turning Movement	A.M. Peak		P.M. Peak	
	Volume (veh/hr)	LOS	Volume (veh/hr)	LOS
Left turn from Kaiminani Drive to Mamalahoa Highway	125	F	125	E
Left turn from Hina Lani Street to Mamalahoa Highway	170	F	300	F
Left turn at Old Mamalahoa Hwy to Palani Road	75	E	50	E
Left turn from Kealakaa Street to Palani Road	125	--	125	--
Left turn from Kaiminani Drive to Queen Kaahumanu Highway	300	F	200	F
Left turn from Hina Lani Street to Queen Kaahumanu Highway	200	F	275	F
Left turn from Queen Kaahumanu Highway to Kealakehe Parkway	255	E	330	F
Left turn from Honokohau Harbor Road (Kealakehe Parkway)	70	F	60	F
Through movement from Honokohau Harbor Road (Kealakehe Parkway)	5	F	20	F
Left turn from Kealakehe Parkway	200	F	250	F
Through movement from Kealakehe Parkway	15	F	15	F
Left turn from Kaiwi Street to Queen Kaahumanu Highway	125	F	180	F
Left turn from Queen Kaahumanu Highway to Kaiwi Street	375	F	325	F

Source: Parsons Brinckerhoff, Kealakehe Parkway Feasibility Study and Environmental Impact Statement, Traffic Impact Report, November 1993.

Table 4-3

**2015 NO-BUILD ALTERNATIVE TRAFFIC
CONDITIONS: ROADWAY SEGMENTS**

Roadway Segment	A.M. Peak	P.M. Peak
Mamalahoa Highway: Between Kaiminani Dr. and Old Mamalahoa Hwy.	E	E
Palani Road: Between old Mamalahoa Hwy. and Kealakaa St.	F	F
Between Kealakaa St. and Queen Kaahumanu Hwy.	F	F
Queen Kaahumanu Hwy.: South of Kaiminani Dr.	B*	B*
Between Honokohau Harbor Rd./ Kealakehe Pkwy and Palani Rd.	B*	C*

Source: Parsons Brinckerhoff, Kealakehe Parkway Feasibility Study and Environmental Impact Statement, Traffic Impact Report, November 1993.

Note: *Assumes Queen Kaahumanu Highway is widened to four lanes.

Should the No Build alternative be implemented, traffic conditions to and from the Villages of La'i'opua would be poor since the east-west (mauka-makai) road network would have difficulty accommodating the demand created by the Villages of La'i'opua. Palani Road already experiences congestion, Hina Lani Street does not directly serve the Villages of La'i'opua, and the western (makai) portion of Kealakehe Parkway would not provide access between the Villages of La'i'opua and Mamalahoa Highway/Palani Road.

Build Traffic Conditions

With the completion of Kealakehe Parkway, intersection movements forecasted to have significant delays (LOS E or F) during a.m. and/or p.m. peak hours are shown in Table 4-4. The build alternatives' Levels-Of-Service for selected roadway segments are forecasted to vary between LOS B, with the Queen Kaahumanu Highway widening improvements, and LOS F (see Table 4-5).

Signalization of intersections at the eastern (mauka) end of Kealakehe Parkway will not be determined until the design phase of work.

It should be noted that the traffic analysis conducted for the Villages of La'i'opua assumed an extension of Kealakehe Parkway to Mamalahoa Highway.

Comparison of the No Build and Build Traffic Conditions

Roadway capacity analyses of Queen Kaahumanu Highway, Mamalahoa Highway and Palani Road are shown in Table 4-6.

Without Kealakehe Parkway, Palani Road is projected to have extremely heavy traffic volumes that will be above capacity. Palani Road would experience LOS E between Old Mamalahoa Highway and Kealakaa Street, and LOS F between Kealakaa Street and Queen Kaahumanu Highway during both the a.m. and p.m. peak hours.

The completion of Kealakehe Parkway will provide a preferred route between Mamalahoa Highway and Queen Kaahumanu Highway and will reduce traffic flow on Palani Road. These reduced volumes will improve roadway operations and decrease

Table 4-4
2015 BUILD ALTERNATIVES
TRAFFIC CONDITIONS: INTERSECTIONS

Turning Movement	A.M. Peak		P.M. Peak	
	Volume (veh/hr)	LOS	Volume (veh/hr)	LOS
Left turn from Kaiminani Drive to Mamalahoa Highway	70	E	80	E
Left turn from Hina Lani Street to Mamalahoa Highway	80	E	125	F
Left turn at Old Mamalahoa Hwy to Palani Road	75	F	50	F
Left turn from Kaiminani Drive to Queen Kaahumanu Highway	50	F	180	F
Left turn from Hina Lani Street to Queen Kaahumanu Highway	160	F	250	F
Left turn from Honokohau Harbor Road (Kealakehe Parkway)	65	F	55	F
Through movement from Honokohau Harbor Road (Kealakehe Parkway)	15	F	35	F
Left turn from Kealakehe Parkway	405	F	430	F
Through movement from Kealakehe Parkway	30	F	30	F
Left turn from Kaiwi Street to Queen Kaahumanu Highway	150	F	225	F
Left turn from Queen Kaahumanu Highway to Kaiwi Street	300	F	275	F

Source: Parsons Brinckerhoff, Kealakehe Parkway Feasibility Study and Environmental Impact Statement, Traffic Impact Report, November 1993.

Table 4-5

**2015 BUILD ALTERNATIVES TRAFFIC
CONDITIONS: ROADWAY SEGMENTS**

Roadway Segment	A.M. Peak	P.M. Peak
Mamalahoa Highway: Between Kaiminani Dr. and Old Mamalahoa Hwy.	D	D
Palani Road: Between old Mamalahoa Hwy. and Kealakaa St.	C	D
Between Kealakaa St. and Queen Kaahumanu Hwy.	E	F
Queen Kaahumanu Hwy.: South of Kaiminani Dr.	B*	B*
Between Honokohau Harbor Rd./ Kealakehe Pkwy and Palani Rd.	B*	C*

Source: Parsons Brinckerhoff, Kealakehe Parkway Feasibility Study and Environmental Impact Statement, Traffic Impact Report, November 1993.

Note: *Assumes Queen Kaahumanu Highway is widened to four lanes.

Table 4-6

2015 ROADWAY LEVELS-OF-SERVICE

Two-Lane Highway Capacity	NO-BUILD		BUILD	
	AM PK	PM PK	AM PK	PM PK
Mamalahoa Highway				
n/o Kaiminani Dr.	E	E	D	D
s/o Kaiminani Dr.	E	E	D	D
n/o Old Mamalahoa Hwy.	E	E	-	-
Palani Road				
s/o Old Mamalahoa Hwy.	E	E	-	-
e/o Kealakaa St.	F	F	C	D
w/o Kealakaa St.	F	F	D	D
e/o Queen Kaahumanu Hwy.	F	F	E	F
Four-Lane Highway Capacity	AM PK	PM PK	AM PK	PM PK
Queen Kaahumanu Hwy.				
n/o Kaiminani Dr.	B	B	B	B
s/o Kaiminani Dr.	B	B	B	B
s/o Hina Lani St.	B	B	B	B
s/o Kealakehe Pkwy.	B	B	B	B
n/o Kaiwi St.	B	B	B	C
n/o Palani Dr.	B	C	B	C
s/o Palani Dr.	B	B	B	C

Source: Parsons Brinckerhoff, Kealakehe Parkway Feasibility Study and Environmental Impact Statement, Traffic Impact Report, November 1993.

the accident potential on Palani Road. The portion of Kealakehe Parkway that was completed in August, 1995 does not satisfy this need alone.

However, even with Kealakehe Parkway, the segment of Palani Road east (mauka) of Queen Kaahumanu Highway will still experience significant delays, and the Palani Road/Queen Kaahumanu Highway intersection is also forecasted to experience over capacity operating conditions during the p.m. peak hour.

4.3.1.3 BICYCLE AND PEDESTRIAN FACILITIES

In accordance with the Bike Plan Hawaii: A State of Hawaii Master Plan (April 1994), no bikeways or pedestrian facilities are being designed for Kealakehe Parkway. Shoulders on both sides of the roadway measuring 2.4 meters (8.0 feet) will, however,

provide sufficient room to accommodate a bike lane or a bike route. Because of the relatively steep grade, extensive use by cyclists is not expected.

4.3.1.4 TRANSIT

Hawaii County's Mass Transportation Agency (MTA) administers the Hele On Bus public bus system. The system provides fixed-rate scheduled bus service on seven routes, with one route operating between Hilo and Kona. This route uses Mamalahoa Highway/Palani Road to access Kailua-Kona. Once completed, Kealakehe Parkway will provide a safer and less congested alternative to Palani Road. Therefore, MTA may choose to alter its Hilo-Kona route once the Parkway is completed.

4.3.1.5 MITIGATION MEASURES

The project is itself a measure to mitigate existing and future traffic conditions.

4.3.2 Water Supply System Impacts

None of the alternatives will affect the existing water supply system in this area, and therefore there will not be a need for mitigation measures.

4.3.3 Waste Water Impacts

None of the alternatives will affect the existing waste water system, and therefore there will not be a need for mitigation measures.

4.4 AIR QUALITY, CLIMATE, AND METEOROLOGY

A complete description of the air quality study conducted for this project is contained in the Kealakehe Parkway Air Quality Report (November 1993). The following is a summary of the results.

4.4.1 Methodology

Model

Pollutants that are related to motor vehicles are relevant to this project. These include carbon monoxide (CO), non-methane hydrocarbons (HC), nitrogen oxide (NO_x), ozone (O₃), and lead (Pb). Transportation sources account for a very small percentage of regional emissions of sulfur dioxide (SO_x) and particulate matter (PM₁₀), and therefore detailed analyses of these contaminants are not warranted.

CO impacts are localized. Even under the worst meteorological conditions and most congested traffic conditions, high concentrations are limited to a relatively short distance (91 to 183 meters (300 to 600 feet)) from heavily traveled roadways. Consequently, it is appropriate to predict concentrations of CO on a localized or "microscale" basis.

The microscale analysis applies mathematical models (mobile source dispersion models) to predict carbon monoxide (CO) concentrations at specific locations under given conditions of traffic, roadway geometry and meteorology. The models attempt to describe extremely complex physical phenomena. However, all models contain simplifications and approximations, and they are therefore designed to be conservative, i.e. overpredict concentrations of pollutants. In addition, the CO levels estimated by the model are the maximum concentrations expected because they are based on the simultaneous occurrence of all worst case parameters (peak hour traffic conditions, conservative vehicular operating conditions, low wind speeds, low atmospheric temperature, neutral atmospheric conditions, and worst-case wind direction).

Microscale air quality modeling was performed using the most recent version of the EPA mobile source emission factor model, MOBILE 5A (User's Guide to MOBILE 5A, Mobile Source Emission Factor Model (March 1993)), and the CAL3QHC version 2 air quality dispersion model. These models were used to estimate existing, future No Build, and future Build carbon monoxide (CO) levels in the project area.

The CAL3QHC version 2 air quality dispersion model (User's Guide to CAL3QHC version 2.0: A Modeling Methodology for Predicting Pollutant Concentrations near

Roadway Intersections (November 1992)) is a modification of the CALINE3 model (CALINE3: A Versatile Dispersion Model for Predicting Air Pollutant Levels Near Highways and Arterial Streets (1979)). The model estimates air pollutant concentrations downwind of a roadway assuming that pollutants emitted from motor vehicles traveling along a segment of roadway can be represented as a "line source" of emissions, and that pollutants will disperse in a Gaussian or "normal" distribution from a defined "mixing zone" over the roadway being modeled. Principal inputs to the CALINE3 model include:

- the geometry of the roadway being evaluated, including its length, height, width, and number and location of lanes;
- the locations of the sites for which air quality estimates are being determined (i.e., receptor locations);
- an estimate of the rate of vehicular emissions (based on number and type of vehicles) for each pollutant; and
- assumed meteorological conditions, including wind speed, wind direction, atmospheric stability class, temperature, and mixing height.

CAL3QHC version 2 allows the user to specify such parameters as capacity and signal type and progression. This model has been approved by the U.S. EPA for nationwide usage.

HC and NO_x emissions from automotive sources are of concern primarily because they are precursors to the formation of ozone. Since the reactions through which ozone is formed are slow and occur as the pollutants diffuse downwind, elevated ozone levels can be found many miles from the sources of the precursor pollutants. The effects of HC and NO_x emissions are therefore generally examined on a regional or "mesoscale" basis.

Motor vehicles have historically constituted a major source of lead emissions to the atmosphere. Lead levels have decreased significantly and will continue to do so because of the mandated decrease and elimination of lead in gasoline. Therefore, a detailed analysis of the impact of lead emissions is not warranted.

Meteorological Conditions

The transport and concentration of pollutants emitted from motor vehicles are influenced by three principal meteorological factors:

- wind direction;
- wind speed; and
- the temperature profile of the atmosphere.

The values for these parameters were chosen to maximize pollutant concentrations at each prediction site (i.e., to establish a conservative worst-case situation).

Persistence Factor

Peak 8-hour concentrations of CO were obtained by multiplying the highest peak hour CO estimates by 0.7. This factor, recommended by the United States Environmental Protection Agency (U.S. EPA), is necessary because vehicle volumes fluctuate downwards from the peak, vehicle speeds vary, and meteorological conditions change over eight hours as compared to a single "worst case" hour.

Analysis Years

Microscale carbon monoxide analyses were performed on the existing conditions (1993) and No Build and Build scenarios for the project's design year of 2015.

Background Concentrations

To account for CO entering the area from upwind sources, a CO "background" level must be added to concentrations predicted from the project's motor vehicle emissions.

A value of 0.3 ppm was used for the 1- and 8-hour background levels. This value is based on recommendations by the Hawaii Department of Health (DOH).

It was assumed that these values will remain constant for all years of analysis. This is a conservative assumption since future decreases in CO emission levels are predicted because of expected reductions in average fleet emissions.

4.4.2 Potential Impacts

4.4.2.1 MICROSCALE IMPACTS

CO levels with and without the project were estimated at five locations (see Figure 4-1 and Tables 4-7 and 4-8). Sites were selected on the basis of existing and estimated future traffic conditions, and included the locations where the greatest project-related air quality impacts will occur. Sites included sensitive receptors, such as residences, along the project alignment.

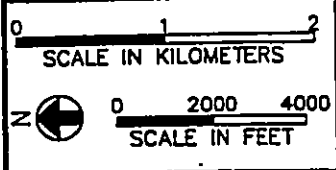
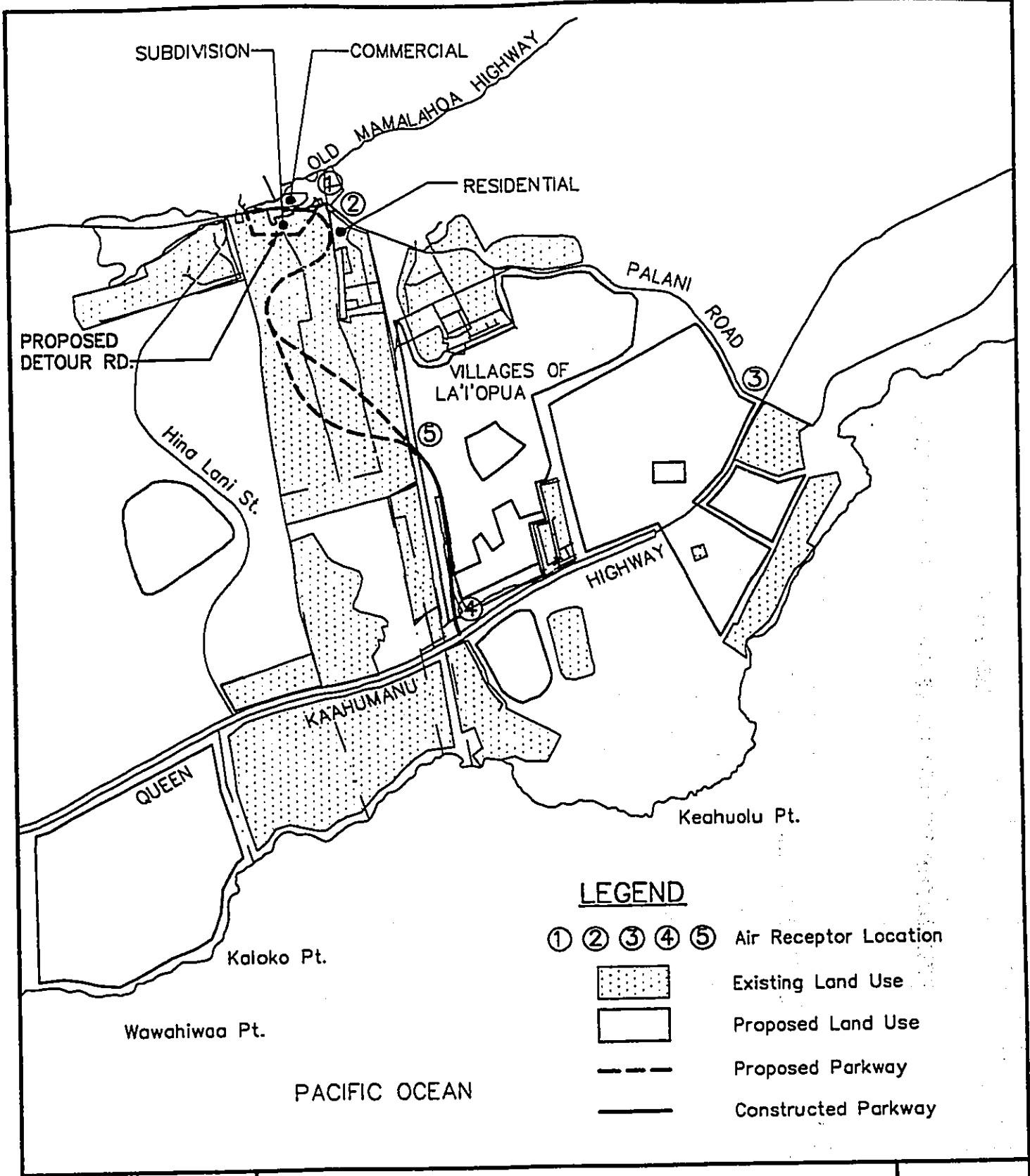
No violations of the federal 1- or 8-hour carbon monoxide standards are predicted adjacent to the Kealakehe Parkway corridor. Likewise, the No Build alternative will not violate federal standards.

However, a violation of the State's 8-hour carbon monoxide standard is predicted at the intersection of Queen Kaahumanu Highway and Palani Road. Areas located near congested intersections generally have elevated carbon monoxide levels because of vehicle queuing and congestion. This violation would be present under both the No Build and build alternatives. Since the build alternatives will slightly decrease the exceedance of the standard at the northeast corner receptor, the project would actually reduce this violation. The project will therefore conform to the goals set forth in the New Clean Air Act.

4.4.2.2 MESOSCALE IMPACTS

Regional pollutant burdens of CO, HC and NO_x were computed based on estimated vehicle miles traveled (VMT), vehicle hours traveled (VHT), average travel speed, and vehicle types for all major roadways in the study area. The results of the mesoscale analysis (Table 4-9) indicate a slight decrease in the regional emissions of carbon monoxide and hydrocarbons under the build alternatives compared to the No Build.

This reduction (less than 3 percent) is primarily from reduced vehicle delays on Palani Road.



AIR QUALITY RECEPTOR LOCATIONS
 KEALAKEHE PARKWAY EIS

Figure
4-1

**Table 4-7
PREDICTED WORST CASE ONE-HOUR CO LEVELS (PPM)**

Site Number	Description	Receptor Description	Existing 1993	No-Build		Build	
				Alt. 2015	Alt. 2015	Alt. 10 2015	Preferred Alt. 2015
1	Mamalahoa Highway/ Palani Road	1-1 Residence	0.6	0.6	0.7	0.7	
		1-2 Residence	0.7	0.7	0.7	0.7	
		1-3 Residence	0.5	0.5	0.8	0.8	
2	Palani Road/Hao Kuni	2-1 NW Corner	1.8	1.9	1.1	1.1	
		2-2 NE Corner	1.1	1.3	0.9	0.9	
		2-3 SW Corner	1.1	1.4	0.8	0.8	
3	Queen Kaahumanu Hwy./ Palani Road	3-1 NW Corner	5.4	6.4	6.2	6.2	
		3-2 SW Corner	5.8	6.7	6.6	6.6	
		3-3 SE Corner	6.9	6.0	6.1	6.1	
		3-4 NE Corner	5.8	6.2	5.9	5.9	
4	Queen Kaahumanu Hwy./ Kealakehe Parkway/ Honokohau Harbor Road	4-1 NW Corner	1.3	2.1	4.7	4.7	
		4-2 SW Corner	1.4	2.2	5.8	5.8	
		4-3 SE Corner	1.3	2.0	4.7	4.7	
		4-4 NE Corner	1.1	1.9	4.0	4.0	
5	Kealakehe Parkway	5-1 SW Side	0.3	0.3	0.6	0.6	
		5-2 East Side	0.3	0.3	0.8	0.6	
		5-3 NW Side	0.3	0.3	0.5	0.6	

Source: Parsons Brinckerhoff, October 1993.

Notes: Predicted levels include a background level of 0.3 ppm
National Standard = 35 ppm
State Standard = 8.8 ppm

**Table 4-8
PREDICTED WORST CASE EIGHT-HOUR CO LEVELS (PPM)**

Site Number	Description	Receptor Description	Existing 1993	No-Build		Build	
				Alt. 2015	Alt. 2015	Alt. 10 2015	Preferred Alt. 2015
1	Mamalahoa Highway/ Palani Road	1-1 Residence	0.5	0.5	0.6	0.6	0.6
		1-2 Residence	0.6	0.6	0.6	0.6	0.6
		1-3 Residence	0.4	0.4	0.7	0.7	0.7
2	Palani Road/Hao Kuni	2-1 NW Corner	1.4	1.4	0.9	0.9	0.9
		2-2 NE Corner	0.9	1.0	0.7	0.7	0.7
		2-3 SW Corner	0.9	1.1	0.7	0.7	0.7
3	Queen Kaahumanu Hwy./ Palani Road	3-1 NW Corner	3.9	4.6	4.4	4.4	4.4
		3-2 SW Corner	4.2	4.8	4.7	4.7	4.7
		3-3 SE Corner	4.9	4.3	4.4	4.4	4.4
		3-4 NE Corner	4.2	4.4	4.2	4.2	4.2
4	Queen Kaahumanu Hwy./ Kealakehe Parkway Honokohau Harbor Road	4-1 NW Corner	1.0	1.6	3.4	3.4	3.4
		4-2 SW Corner	1.1	1.6	4.2	4.2	4.2
		4-3 SE Corner	1.0	1.5	3.4	3.4	3.4
		4-4 NE Corner	0.9	1.4	2.9	2.9	2.9
		5-1 SW Side	0.3	0.3	0.5	0.5	0.5
5	Kealakehe Parkway	5-2 East Side	0.3	0.3	0.7	0.7	0.5
		5-3 NW Side	0.3	0.3	0.4	0.4	0.5

Source: Parsons Brinckerhoff, October 1993.

Notes: Predicted levels include a background level of 0.3 ppm
National Standard = 9 ppm
State Standard = 4.5 ppm

Table 4-9
MESOSCALE POLLUTANT BURDEN EMISSIONS

VMT	Avg. Speed (miles/day)	Emission Rates (grams/mile)			Emission Burden (lbs/day)			% * Difference		
		CO	NO _x	HC	CO	NO _x	HC	CO	NO _x	HC
No-Build	241,500	15.4	1.96	1.98	8359	1064	1074			
Build	245,000	14.8	1.96	1.94	8150	1079	1068	-2.5	1.4	-0.6

Source: Parsons Brinckerhoff, December 1993.

Note: % Difference is a comparison between No Build and Build conditions.

There is a slight increase in nitrogen oxide levels (less than 1.5 percent) predicted with the build alternatives. This is due to increased VMT predicted with the project and the nature of nitrogen oxide emissions to increase as average speed increases.

Section 161 of the Clean Air Act Amendments (CAAA) requires each State Implementation Plan (SIP) to contain emission limits and other measures to prevent significant deterioration of air quality in each region. Since the study area is currently classified "attainment" by the U.S. EPA, no implementation plan to contain emission limits exists. The mesoscale analysis, however, demonstrates that the project will not cause significant deterioration in the study area.

4.4.3 Mitigation Measures

Because the project will not produce air quality impacts greater than those projected for the future No Build alternative, no air quality mitigation measures are proposed.

4.5 NOISE AND VIBRATION

4.5.1 Traffic Noise Prediction Methodology

To evaluate the potential impacts of Alternative 10 and the Preferred Alternative, future Leq under the No Build and build alternatives were projected using Stamina 2.0, a computerized version of the FHWA's Highway Traffic Noise Prediction Model, Report FHWA-RD-77-108 (1984).

The major inputs to the model are speed, vehicles per hour by vehicle class, and the spatial relationship between the roadway and the receptor locations analyzed. The 2015 projected peak hour traffic volumes were developed in conjunction with the Queen Kaahumanu Highway improvements project. Vehicle mix and speed were obtained from field measurements, and were assumed to remain constant. Alternative 10 and the Preferred Alternative were assumed to have the same projected traffic.

Before future noise levels were predicted, the model was calibrated to existing conditions based on the noise monitoring that was conducted (see Chapter 3.0).

Table 4-10 displays the monitored levels and the model-generated Leq. The model replicated the existing conditions satisfactorily.

**Table 4-10
EXISTING AND PREDICTED LEQ**

Location	Existing A.M. Measured	Leq Computed	Existing P.M. Measured	Leq Computed
Kona Church of Christ Palani Road at Old Mamalohoa	58.5	58.1	56.6	56.3
Hikimoe Street	65.9	65.0	64.1	63.7
	49.0	48.4	N/A	N/A

Source: Parsons Brinckerhoff, October 1993.

4.5.2 Potential Impacts

Potential noise impacts are either short-term or long-term in nature. This section contains a discussion of the long-term impacts associated with the project. Refer to Section 4.18.2 for a discussion of the short-term impacts related to construction activities. According to the SDOT Noise Analysis and Abatement Policy (Policy) (approved by FHWA on June 26, 1997), traffic noise impacts occur when the predicted noise levels approach or exceed the FHWA Noise Abatement Criteria (NAC) (see Section 3.5.2), or when the predicted noise levels substantially exceed the existing noise levels. "Approach" means 1 dBA less than the NAC and "substantially exceed the existing noise levels" mean an increase of at least 15 dBA. When traffic noise impacts occur, abatement must be considered.

Noise impacts are dependent on changes in vehicular volumes, travel speeds, and distance between the noise source and receptor. Theoretically, to have an increase in noise levels of 3 dBA, one or a combination of the following would be necessary:

- a doubling of hourly traffic volumes on one or more streets passing a noise-sensitive site;
- an increase of vehicular speeds of 24 km/h (15 mph) on one or more streets passing a noise-sensitive site; and/or,

- a reduction of one-third in the distance between auto or truck traffic and a noise-sensitive site.

Noise impacts associated with the project were assessed at existing and future "sensitive receptors," such as residences and golf courses, as presented in Figure 4-2.

Tables 4-11 and 4-12 show computed Leq levels for a.m. and p.m. peak hours. Three scenarios were analyzed:

- No Build alternative;
- Alternative 10; and
- the Preferred Alternative.

Table 4-11

2015 A.M. PEAK Leq (ONE HOUR)

Location	Existing	No Build	Alt 10	Preferred Alternative
Residential Unit	58.7	61.5	65.1	65.1
Kona Church of Christ	58.1	60.8	61.7	61.7
Hikimoe Street	48.4	51.4	57.3	57.2
Proposed High School	N/A	48.6	54.7	55.2
Proposed Neighborhood Park 1	N/A	49.0	53.3	54.1
Proposed Neighborhood Park 2	N/A	49.4	52.5	52.7
Proposed Golf Course	N/A	53.2	62.1	62.0
Existing Six Unit Residential Area (Proposed Subdivision)	N/A	62.8	71.5	71.5

Source: Parsons Brinckerhoff, May 1994.

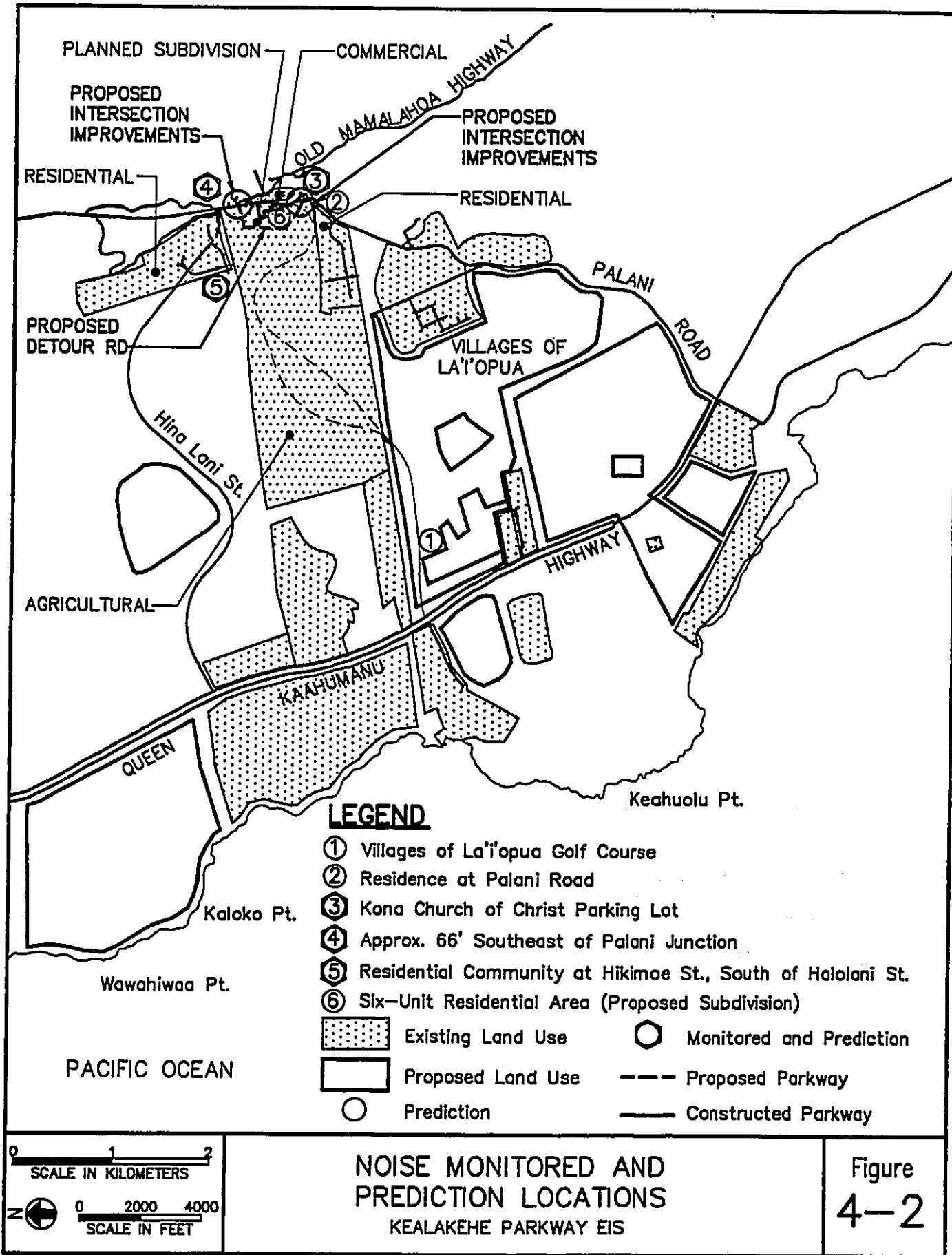


Table 4-12
2015 P.M. PEAK Leq (ONE HOUR)

Location	Existing	No Build	Alt 10	Preferred Alternative
Residential Unit	57.3	61.8	65.9	65.9
Kona Church of Christ	65.3	61.2	62.5	62.5
Hikimoe Street	47.4	51.6	57.9	57.9
Proposed High School	N/A	48.9	54.9	55.4
Proposed Neighborhood Park 1	N/A	49.2	53.6	54.4
Proposed Neighborhood Park 2	N/A	49.6	52.8	53.1
Proposed Golf Course	N/A	53.8	62.3	62.2
Existing Six Unit Residential Area (Proposed Subdivision)	N/A	63.1	72.4	72.4

Source: Parsons Brinckerhoff, May 1994.

With the exception of the existing six unit residential area (discussed more fully below), the estimated future noise levels are well within the NAC. In the worst case scenario, the increases in traffic noise levels attributed to Kealahou Parkway are predicted to range from approximately 1 dBA to almost 9 dBA, well below the "substantially exceed" definition of the SDOT Policy. The proposed high school and neighborhood parks are predicted to have slightly more noise with the Preferred Alternative than Alternative 10. With the Preferred Alternative, the proposed high school will experience an increase less than 7 dBA in comparison to the No Build alternative. This does not approach the NAC nor is considered a substantial increase.

The analysis does predict one location, the six-unit residential area on Palani Ranch property used by ranch employees, where traffic noise impacts will occur. By 2015, this subdivision may have a one hour Leq of 72 dBA, exceeding the 67 dBA NAC. Because the worst case scenario for the "Existing Six Unit Residential Area" projected the noise level in that area to exceed the NAC, a more detailed analysis of that area's noise level projections was made using the actual locations of each of the existing dwelling units. As shown on Table 4-13, projected noise levels in the area range from a low of 54 dBA to a high of 71 dBA. Four of the six properties are predicted to have noise levels below the NAC. Properties 5 and 6, the two residences located nearest to

Kealakehe Parkway are predicted to have noise levels that exceed the NAC. Therefore, abatement to reduce noise levels at these properties must be considered.

Table 4-13

**2015 P.M. PEAK Leq (One Hour)
IN THE SIX UNIT RESIDENTIAL AREA**

Receptor Location	Projected Leq
<u>Property 1</u>	<u>53.9</u>
<u>Property 2</u>	<u>54.1</u>
<u>Property 3</u>	<u>58.1</u>
<u>Property 4</u>	<u>56.6</u>
<u>Property 5</u>	<u>68.5</u>
<u>Property 6</u>	<u>71.0</u>

Notes: Properties are numbered from north to south.
Source: Parsons Brinckerhoff, November 1996.

**4.5.3 Reasonable And Feasible Analysis Of Mitigation
Measures**

The SDOT Policy includes the following criteria to determine whether noise abatement is reasonable and feasible:

- Provides a minimum noise reduction of 5 dBA.
- Cost of noise abatement is not to exceed \$35,000 per residence benefited. The number of residences protected will include all dwelling units - owner occupied houses, rental units, mobile homes, etc. All units benefited by a 5 dBA or more noise reduction will be counted regardless of whether or not they were identified as impacted.
- Views from impacted residences are a major consideration in the reasonableness of noise abatement measures.
- Greater considerations to residential areas where absolute traffic noise levels are expected to occur, e.g., greater than 70 dBA, or where large increases over existing noise levels are anticipated.
- Greater consideration to residential areas along highways in a new location, residential areas constructed before an existing highway, residential areas in place along an existing highway for an extended period of time.

- Consideration of adverse environmental effects and beneficial reduction of construction noise.

The two main types of constructed mitigation are soundwalls and earth berms. Soundwalls are generally the most cost-effective measure to minimize harm along a corridor. As a general rule, earth berms provide about three dBA more noise reduction than walls of equal height. However, given the higher elevation of the proposed roadway in relation to the subdivision, earth berms are not an appropriate means to mitigate noise in this area of the corridor.

Since noise levels at the two residential units are projected to exceed the NAC in 2015, a soundwall at a height of either 1.8 meters (six feet) or 2.4 meters (8 feet) was modeled and evaluated using the FHWA model Optima. The wall would be 61 meters (200 feet) long and placed at the edge of Kealakehe Parkway's pavement nearest to the residences. The results (see Table 4-14) indicated that the 1.8 meter (six foot) high barrier will provide an acceptable level of noise reduction (a decrease of more than 5 dBA).

Table 4-14

**2015 P.M. PEAK Leg (One Hour)
WITH SOUNDWALLS**

Receptor	Barrier Height		
	0 m (0 ft)	1.8 m (6 ft)	2.4 m (8 ft)
Property 5	68.5	63.3	62.0
Property 6	71.0	64.4	62.2

Note: Barrier is 61 meters (200 feet) long.
Source: Parsons Brinckerhoff, November 1996.

The next step is to determine whether the 1.8 meter (6-foot) soundwall is reasonable and feasible using criteria specified in the SDOT Policy (see above). The application of the criteria is described below.

The wall will achieve substantial noise reduction of least 5 dBA. For planning purposes, the cost of the wall will be similar to the cost to a retaining wall. The estimated cost per linear meter of a standard 1.8 meter (6 foot) steel-reinforced

concrete retaining wall is \$830 in 1990 dollars. The requisite wall will therefore cost \$50,600, or \$25,300 per benefited residence, less than the maximum \$35,000 cost per benefited residence specified in the SDOT Policy.

The owner of the affected residences, Palani Ranch, stated no objection to the construction of a noise wall because it would minimize traffic noise impacts on tenants. The wall will be constructed east (mauka) of the affected residences, minimizing its visual intrusion. The ranch requested appropriate aesthetic treatment consistent with the project area. The Kealakehe Parkway berm will also minimize localized visual impacts of the noise wall.

Since Kealakehe Parkway will be a new highway constructed in an area where there are existing residences that will be affected by traffic noise from the new highway, greater consideration should be given to providing noise mitigation, per the SDOT Policy. The noise wall will have minimal environmental impacts, if provided with aesthetic treatment.

In summary, a soundwall that is 1.8 meter (6 feet) high by 61 meters (200 feet) long appears to qualify as reasonable and feasible per the SDOT Policy. Therefore, the construction of the soundwall is likely. However, final commitment will not be made until this project's Record of Decision is accepted.

4.6 GEOLOGY, PHYSIOGRAPHY, AND SITE CONTAMINATION

4.6.1 Potential Impacts

The No Build alternative would not affect the geology, physiography or hazardous waste characteristics of the project area. The build alternatives are assessed as having the impacts described below.

4.6.1.1 GRADING PLAN

The Kealakehe Parkway will have a 36 meter (120 feet) minimum typical section, plus additional right-of-way (ROW) required for excavations and embankments. Kealakehe Parkway will conform to the existing contours of the hillside wherever possible.

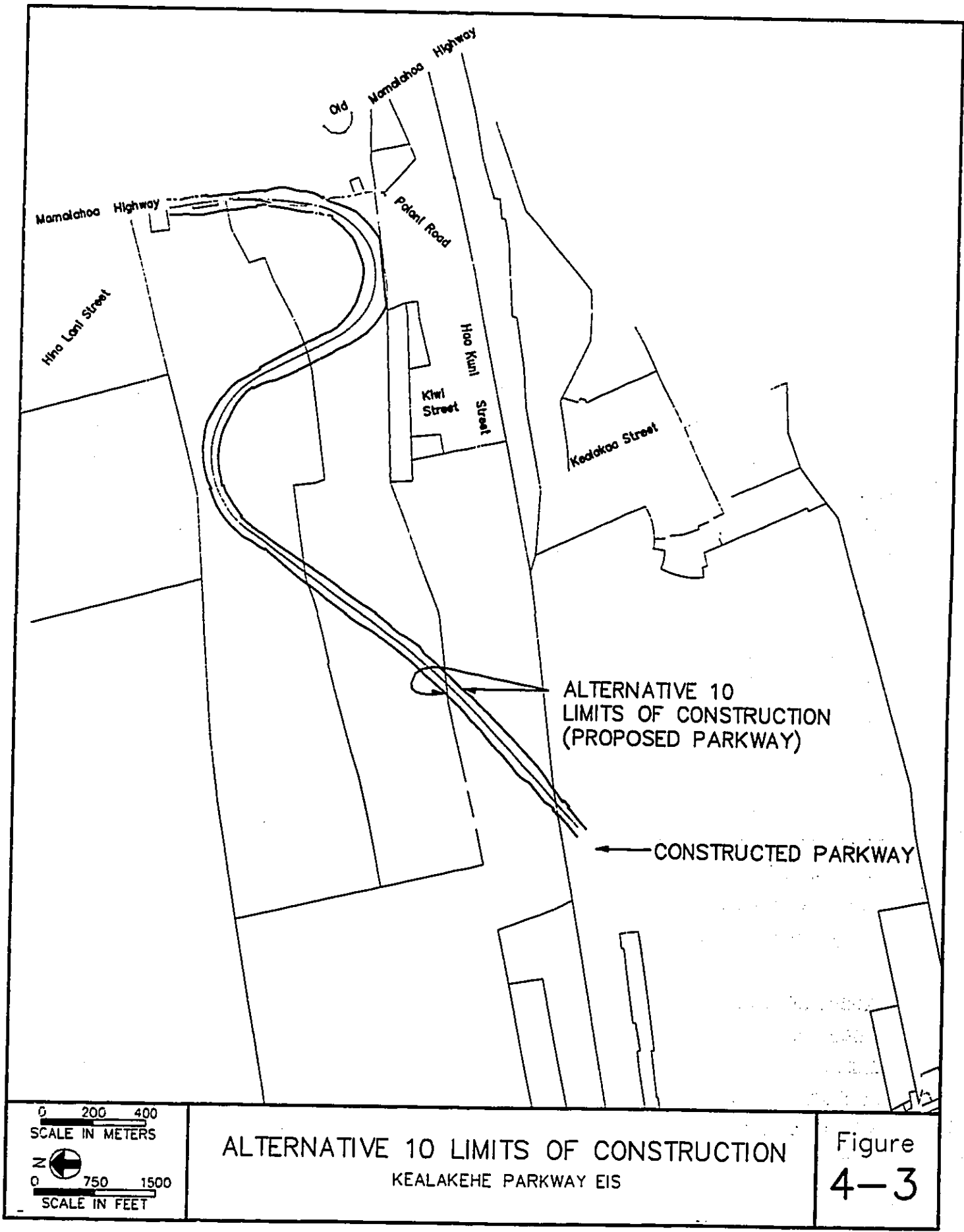
However, cut and fill activity will be needed to achieve acceptable grades on the roadway. Preliminary estimates indicate that Alternative 10 will require approximately 1 300 000 m³ (1,700,000 cubic yards) of total earthmoving. The Preferred Alternative will require approximately 1 100 000 m³ (1,400,000 cubic yards) of total earthmoving activity. The zones of earthmoving for Alternative 10 and the Preferred Alternative are shown in Figures 4-3 and 4-4.

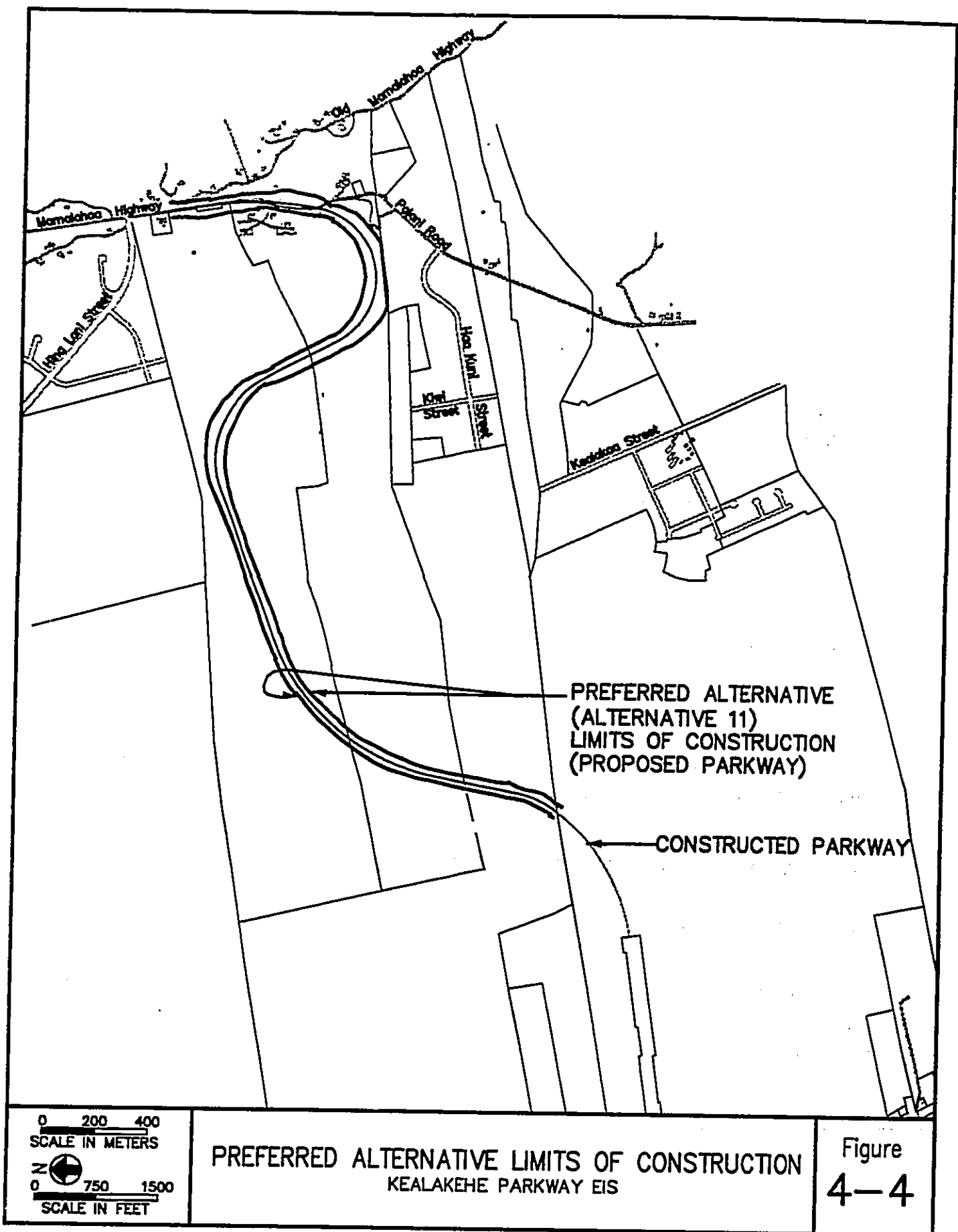
As described in Section 3.1.2, a thin veneer of soil covers the lava bedrock at the project site. To minimize erosion of the soil, sediment and erosion control measures will be implemented. The project's National Pollutant Discharge Elimination System (NPDES) permit for storm water discharges from a construction site will give details as to the types of erosion control, exact location, inspections, and maintenance procedures and other details involving storm water mitigation. Specifications will require the contractor to propose and implement a Best Management Priority Plan to control erosion. Measures will include installation of silt fences, minimizing the area of exposure to that required for immediate construction, and planting, hydro-mulching or covering exposed areas and excavated material.

Silt fences will be utilized at the downslope side of graded areas to control sheet erosion. Sediment basins, debris basins or desilting basins may also be used for sediment removal from runoff where it is deemed feasible.

The need to import or export fill materials to or from the job site will be reduced by using material that is excavated from other portions of the roadway. A preliminary balancing of cut and fill indicates that approximately 16 000 m³ (21,000 cubic yards) of material will need to be disposed, which is about 0.015 percent of the total earthmoving volume. Final cut and fill requirements will be determined during the design phase of the project.

Where cuts, fills and other grading work is required, State, federal, and County grading standards will be enforced to reduce erosion. Runoff of drainage water during construction may be controlled by proper grading, slope rounding, warping and contouring. Berms at the top of cuts will divert water from the cut face. Re-vegetation will follow grading operations and, if possible, native species will be utilized. Fresh





cuts and fills will be mulched and planted incrementally so that no slope area remains barren.

4.6.1.2 SOLID AND HAZARDOUS WASTE MANAGEMENT

Based on the information provided in Section 3.6.2, project construction will be unlikely to uncover contaminated sites. However, construction will involve the use of some materials that are designated hazardous. The handling and disposal of hazardous materials during construction is addressed in Section 4.18.5.

There will be no solid wastes generated from the operation of Kealakehe Parkway. Highway accidents may, however, involve the release of hazardous materials. Such spills will be handled in accordance with applicable procedures. Any accident that involves spills or release of hazardous materials or petroleum products will be reported to the Hazard Evaluation and Emergency Response Office (HEER), pursuant to State Environmental Response Law requirements. Appropriate containment and disposal procedures will be followed under the supervision of the HEER.

4.6.2 Mitigation Measures

Impacts to the geology and physiography of the area are minimized through selection of alternatives that preserve existing contours as much as possible, while still meeting roadway design guidelines. Cut and fill will be balanced so that the transportation of material to and from the site will be minimized.

4.7 VOLCANOLOGY AND EARTHQUAKES

The No Build alternative would have no impact on the present conditions.

Since Kealakehe Parkway will provide an evacuation route for area residents and access for emergency vehicles and supplies, it will also be a mitigation measure for volcanic and earthquake hazards in the area.

4.8 WATER RESOURCES

4.8.1 Potential Impacts

Impacts to surface water resources and wetlands are not expected under the build alternatives because there are no surface water bodies, wetlands or floodplains in the project corridor. Wetlands and coral reefs, depicted in Figure 3-9, are located several kilometers from the project site and will not be affected by Kealakehe Parkway. An Army Corps of Engineers permit is not required because the project will not affect any surface water bodies, floodplains, or wetlands (see Appendix F).

Replacement of open, vegetated land by a highway will result in an increase in surface runoff. However, the project area soils are quite porous, and when it does rain, runoff percolates rapidly into the ground. Traffic will result in some petroleum and other pollutants in the runoff.

Changes in the existing landform by cutting embankments and creating berms will affect existing surface drainage patterns.

From the perspective of the coastal waters, Kealakehe Parkway will comply with all water quality standards to protect and where feasible, restore the recreational value of coastal waters.

The No Build alternative would not affect the existing water resources.

4.8.2 Mitigation Measures

No mitigation measures addressing roadway runoff after construction are proposed.

Mitigation measures will be employed during project construction to control storm water discharges. Because of potential adverse impacts to groundwater supplies and nearshore marine ecosystems, an erosion control plan will be an integral part of the project. This topic is discussed in Section 4.18.3.

4.9 TERRESTRIAL FLORA

4.9.1 Potential Impacts

The No Build alternative would not have an impact on the terrestrial flora.

Completion of Kealakehe Parkway, however, will require the clearance of approximately 26 hectares (64 acres) of vegetated area. With the exception of isolated occurrences of certain endangered and threatened plant species (see Section 4.11), the types of vegetational communities that will be cleared are abundant in the area, and their loss is not considered regionally significant. The areas to be affected are not critical habitat areas. Impacts will be minimized by limiting the construction zone and providing erosion and sediment controls.

4.9.2 Mitigation Measures

Xeriscape landscaping will be provided to replace lost vegetation. Details of the landscaping will be developed during the project's design phase.

4.10 TERRESTRIAL FAUNA

4.10.1 Potential Impacts

The No Build alternative would not affect existing faunal conditions.

The project will convert faunal habitats into roadway and embankment. However, Kealakehe Parkway will not threaten the relatively common faunal community in this area. As discussed in Chapter 3.0, many of the birds and mammals present in the area, such as the common myna, the House Sparrow, the Indian Mongoose, rats and mice, are considered nuisances by some and are easily adaptable to urban environments.

4.10.2 Mitigation Measures

No mitigation measures will be necessary for the project.

4.11 ENDANGERED AND THREATENED SPECIES

4.11.1 Agency Coordination

The U.S. Fish and Wildlife Service (FWS) and the State Department of Land and Natural Resources (DLNR) were contacted in September 1993 to discuss the presence of endangered and threatened species. In October 1993, a coordination meeting was held with the U.S. FWS to discuss the conclusions in the botanical survey report. Based on its review of the botanical report, the U.S. FWS was unable to determine whether formal Section 7 consultations would be required.

On December 16, 1993, a letter was sent to the U.S. FWS requesting its official review of the project. On March 8, 1994, the U.S. FWS issued a response indicating that the Federal Highway Administration (FHWA) should initiate formal consultation with the U.S. FWS to ensure that endangered species are adequately protected. Formal consultations would ensue after the submission of a biological assessment (as required by 50 CFR Part 402 of the "Endangered Species Act of 1973") that "addresses the effects of the project as a whole, which include cumulative effects." In October 1994, additional biological information was submitted to the U.S. FWS. Also in 1994, the U.S. FWS listed the Loulu Palm (*Pritchardia affinis*) as an endangered species.

On January 12, 1995, the U.S. FWS received an FHWA request for formal Section 7 consultations. A subsequent meeting with the U.S. FWS on March 2, 1995, determined that the Loulu Palm would need to be addressed in the botanical reports for the project. This decision triggered preparation of the Report on the Endangered Loulu Palms (*Pritchardia affinis*) Found within the Palani Road Corridor (April 1995). At the same meeting, the U.S. FWS also determined that the draft EIS could serve as the biological assessment for the project. The draft EIS was submitted to the U.S. FWS in July, 1995, with a request that it be reviewed as the project's biological assessment.

On September 18, 1995, the U.S. FWS and the Department of the Interior (DOI) Office of the Secretary submitted a written request for additional information. A meeting was held on November 1, 1995, to discuss the U.S. FWS' requirements for additional information. FHWA submitted additional information to the U.S. FWS on November 27, 1995 to complete its biological assessment.

In letter a dated February 16, 1996 (see Appendix B.1) the U.S. FWS rendered its biological opinion of non-jeopardy on Alternative 10 and the Preferred Alternative. The opinion focused on three species (*Bidens micrantha* ssp. *ctenophylla*, *Caesalpinia kavaiensis*, and *Pritchardia affinis*) that will be affected by at least one of the alternatives. *Pritchardia affinis* was not included in the original species letter, but was addressed in the formal Section 7 consultation. The other species described in Section 3.11 were not subject to this formal consultation because they are found on surrounding land but are not likely to be adversely affected by the proposed action (see FWS letters dated February 16, 1996 and September 26, 1996 in Appendix B.1). The biological opinion of non-jeopardy formally concluded the Section 7 Consultation process.

FWS letters of September 26, 1996 and November 17, 1997 updated information on whether additional species have been listed since the March, 1994 species letter. It was learned that *Pleomele hawaiiensis* and *Neraudia ovata*, previously listed Proposed Endangered, became listed Endangered on October 10, 1996. The FWS stated that neither of these two species are in the project area (see Appendix B.1). The status of all species listed in Section 3.11 is accurate as of November 17, 1997.

As described in Section 3.11, the FWS noted in early consultation that several species of sea birds may transit the project area (the endangered Hawaiian petrel (*Pterodroma phaeopygia sandwichensis*), the threatened Newell's shearwater (*Puffinus auricularis*), and the candidate band-rumped storm petrel (*Oceanodroma castro cryptoleucura*)). However, in the November 17, 1997 letter, the FWS stated that there are no known records of these species in the project area, and therefore, they were not subject to this consultation and therefore, not included in the February 16, 1996 biological opinion.

All agency consultation efforts are documented in Appendix B.1.

4.11.2 Potential Impacts

The No Build alternative would not affect endangered or threatened species.

The locations of rare plant species in relation to the proposed action are shown in Figure 4-5. Alternative 10 will pass through a population of Ko'oko'olau (*Bidens micrantha ssp. ctenophylla*), a "Candidate 1" plant species. At present, Ko'oko'olau is not a listed or proposed endangered or threatened species.

Alternative 10 is also close to two uhiuhi trees (*Caesalpinia kawaiensis*), an endangered species. Alternative 10 will not directly affect these trees since they grow outside of the project's construction zone, but the trees could be affected through secondary impacts.

Although the Preferred Alternative will avoid direct involvement with Ko'oko'olau and uhiuhi trees, these species could be destroyed or removed by future land use development and improved accessibility of parcels adjacent to the right-of-way. Improving accessibility would increase fire risk because of the area's dry conditions.

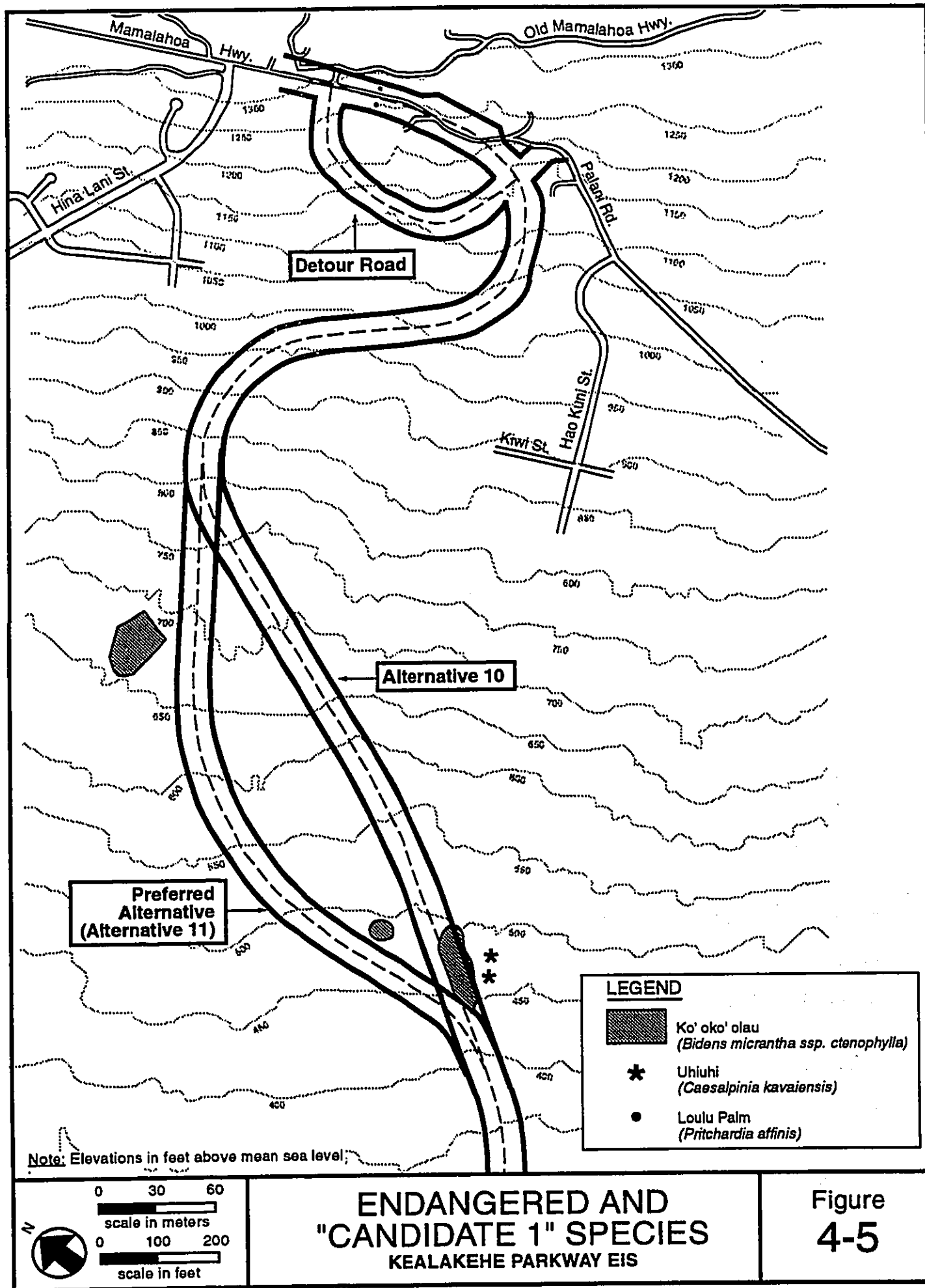
Both Alternative 10 and the Preferred Alternative will directly affect two endangered Loulu Palms (*Pritchardia affinis*) located along Palani Road. The larger of the two palms is about 15 meters (50 feet) tall and is located on the grounds of Orchard Marine plant nursery, near the building. The smaller palm is about 9 meters (30 feet) tall and is located immediately downslope (west) of Palani Road, about 15 meters (50 feet) south of an electric pole.

4.11.3 Mitigation Measures

In the February 16, 1996 biological opinion, the FWS requested that a translocation plan and a fire plan be implemented.

4.11.3.1 TRANSLOCATION PLAN

A translocation plan will be developed to mitigate impacts to the endangered Loulu Palm (*Pritchardia affinis*). Protection of the uhiuhi trees (*Caesalpinia kawaiensis*) will also be provided in this plan because of the potential of secondary impacts.



Two palms exist within the proposed construction zone of the project. The smaller of the two palms, located immediately downslope (west) of Palani Road, will be transplanted. The larger, upslope palm will be protected by a retaining wall.

Prior to the start of construction, a botanist will inspect the palm to be transplanted to determine the probability of a successful transplant. The botanist will then transplant the palm in a preserve approved by the FWS. The botanist will collect seeds for propagation in the event the palm does not survive the transplant.

In addition to collecting seeds from the smaller palm, a botanist will also collect seeds from the larger palm which is located on the grounds of the Orchard Marine Plant Nursery, east (mauka) of Palani Road. In order to leave the larger palm in-place both during construction and roadway operation, a protective retaining wall will be built. The project construction zone will therefore be narrowed in the area to protect the palm.

The botanist will also collect seeds from the endangered uhiuhi trees and place them, along with seeds from the palms, in a nursery to germinate. After the seeds have sprouted, the botanist will plant the seedlings in a site approved by the FWS. The botanist will continue care and maintenance of the seedlings for six months after they have been placed in the ground to ensure their establishment. The translocation plan will be completed six months following the planting.

To ensure the preservation of the Loulu palm and uhiuhi trees, potential preserve locations for off-site management of the translocated species include:

- the Housing Finance and Development Corporation (HFDC) uhiuhi preserve (5.7 hectare (14-acre site));
- the Amy Greenwell Ethnobotanical Gardens;
- the Tokyo Green property; or
- Lanihau Partners/Palani Ranch property.

4.11.3.2 FIRE PLAN

A fire plan will be developed to reduce the potential loss of species and habitat in the event of a fire. The plan will indicate:

- identification of the responsible fire control agency;

- the appropriate point of contact in case of fire;
- the appropriate chain of command;
- identification of those responsible for extinguishing fires;
- location of those endangered and threatened and candidate species requiring protection from fire; and
- duration of the plan.

The fire plan will be distributed to various fire stations throughout the area.

In addition, roadway signage will be posted to alert drivers of potential fire hazards.

The plan will be implemented during construction and transition into the post-construction phase.

4.11.3.3 ROADWAY LIGHTING DESIGN

Although the FWS indicated that there are no records of listed endangered or candidate species of sea birds in the project area, measures to minimize potential impacts to sea birds are nevertheless provided. Street light luminaries, where provided, will be designed to reduce glare and shield light from migrating birds. When possible, the SDOT will use The Newell's Shearwater Light Attraction Problem. A Guide for Architects, Planners, and Resort Managers in designing the luminaries.

4.11.3.4 CONCLUSION

All mitigation measures found in Section 4.11.3 will be undertaken in cooperation with and reviewed by the FWS and the DNR, Division of Forestry and Wildlife. These are the agencies which oversee the protection of endangered species.

4.12 HISTORIC AND ARCHAEOLOGICAL RESOURCES

4.12.1 Section 106 Requirements

Section 106 of the National Historic Preservation Act of 1966 requires that a federal agency consider the effect of its project on any district, site, building, structure, or

object listed on or eligible for the National Register of Historic Places. The Advisory Council on Historic Preservation (ACHP) must be given an opportunity to review a project's impacts.

Regulations of the ACHP reference a "Criteria of Effect" which must be applied. A project is deemed to have an effect if it would change those characteristics of a property that qualify it for inclusion in the National Register. If an effect is found, the "Criteria of Adverse Effect" must be applied. The "Criteria of Adverse Effect" are as follows:

An undertaking is considered to have an adverse effect when the effect on a historic property may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects on historic properties include, but are not limited to:

- physical destruction, damage, or alteration of all or part of the property;
- isolation of the property from or alteration of the character of the property's setting, when that character contributes to the property's qualification for the National Register;
- introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting;
- neglect of a property resulting in its deterioration or destruction; and
- transfer, lease, or sale of the property.

For most subsurface archaeological sites, 36 CFR 800.9(c) is applicable, and states:

Effects of an undertaking that will otherwise be found to be adverse may be considered as being not adverse...when the historic property is of value only for its potential contribution to archaeological, historical, or architectural research, and when such value can be substantially preserved through the conduct of appropriate research, and such research is conducted in accordance with applicable professional standards and guidelines.

4.12.2 Historic Structures

There are no historic architectural structures in the study area that can be affected by any of the alternatives.

4.12.3 Archaeological Resources

The results of the inventory survey are described in An Archaeological Inventory Survey and Limited Subsurface Testing of the Proposed Kealakehe Parkway Extension, Alternatives 10 and 11 and the Addendum Report to the Kealakehe Parkway Extension (June 1994).

The reports identified the following archaeological sites encountered as summarized in Tables 4-15 through 4-18:

- Sites located exclusively within the Alternative 10 corridor (see Table 4-15);
- Sites located exclusively within the Preferred Alternative corridor (see Table 4-16);
- Sites located within the combined Alternative 10 and Preferred Alternative corridor, and the Detour Road corridor (see Table 4-17); and
- Sites recommended for No Further Work (see Table 4-18).

The Preferred Alternative will affect 54 archaeological sites: 21 sites located exclusively within the Preferred Alternative corridor (see Table 4-16); 24 sites located within the corridor common to Alternative 10 and the Preferred Alternative (see Table 4-17); and nine sites along the Preferred Alternative corridor and the detour road that require for no further work (see Table 4-18). In comparison, Alternative 10 will affect 67 sites: 28 sites located exclusively with the Alternative 10 corridor (see Figure 4-15); 24 sites located within the corridor common to Alternative 10 and the Preferred Alternative (see Table 4-17); and 15 sites along the Alternative 10 corridor and the detour road that require for no further work (see Table 4-18).

The FHWA applied the "Criteria of Effect" and "Criteria of Adverse Effect" (36 CFR 800.9) to the 54 sites affected by the Preferred Alternative. The evaluations were based on the impacts of the Preferred Alternative, the archaeological significance of the sites and the recommended treatments for these sites. The "Criteria of Effect" and "Criteria of Adverse Effect" were not applied to Alternative 10.

Table 4-15

**ARCHAEOLOGICAL RESOURCES
RECOMMENDED FOR DATA RECOVERY AND PRESERVATION:¹
ALTERNATIVE 10**

State Site #	CSH Site #	Site Type	Function	Probable Age	Significance	Recommended Treatment
50-10-28-18209	139	Trail	Transportation	PH	D	DR
50-10-28-18214	144	Circular enclosure	Hab. (R)	PH	D	DR
50-10-28-18237	167	Site complex	Hab. (P); Agriculture	PH/H	D	DR
	167A	Platform-Modified outcrop	Hab. (P)			
	167B	Modified outcrop	Agriculture			
	167C	Rectangular enclosure	Hab. (P)			
50-10-28-18238	168	Terrace	Agriculture	PH/H	D	DR
50-10-28-18240	170	Modified outcrop	Agriculture	PH/H	D	DR
50-10-28-18249	179	Site complex	Agriculture	PH/H	D	DR
	179A	Rectangular enclosure	Agriculture			
	179B	L-shaped enclosure	Agriculture			
50-10-28-18251	181	Site complex	Agriculture	PH	D	DR
	181A	Rectangular enclosure	Agriculture			
	181B	L-shaped enclosure	Agriculture			
	183	Site complex	Hab. (P); Agriculture	PH	D	DR
	183A	Terrace	Agriculture			
	183B	C-shaped enclosure	Agriculture			
	183C	Terrace	Agriculture - work surface			
	183D	Terrace	Hab. (P)			
50-10-28-18262	192	Kerbstone trail	Transportation	PH/H?	D	DR
50-10-28-18271	201	Site complex	Hab.	PH	D	DR
	201A	Wall segment	Hab.			
	201B	Terrace	Hab.			
	201C	Wall segment	Hab.			
50-10-28-18273	203	U-shaped enclosure	Hab. (P)	PH	D	DR

Table 4-15

**ARCHAEOLOGICAL RESOURCES
RECOMMENDED FOR DATA RECOVERY AND PRESERVATION:
ALTERNATIVE 10
(continued)**

State Site #	CSH Site #	Site Type	Function	Probable Age	Significance	Recommended Treatment
50-10-28-18274	204	Lava blister	Hab. (T)	PH	D	DR
50-10-28-18284	214	Site complex	Hab. (P); Special	PH	D	DR
	214A	Platform	Hab. (P)			
	214B	Pavement	Hab. (P)			
	214C	Platform	Hab. (P)			
	214D	Wall	Hab. (P)			
	214E	Papamu	Special			
50-10-28-18285	215	Walls	Animal Containment	H	D	DR
50-10-28-18290	220	Circular enclosure	Hab. (R)	PH	D	DR
50-10-28-18291	222	Stone basin	Hab.	PH	D	DR
50-10-28-18294	228	Site complex	Hab. (P)	PH	D	DR
	228A	Rectangular enclosure	Hab. (P)			
	228B	Platform	Hab. (P)			
50-10-28-18296	230	Site complex	Hab. (P)	PH	D	DR
	230A	Rectangular enclosure	Hab. (P)			
	230B	Platform	Hab. (P)			
	230C	Platform	Hab. (P)			
	230D	L-shaped enclosure	Hab. (P)			
50-10-28-18298	232	Walls	Agriculture	PH/H?	C,D	DR
50-10-28-18303	240	Petroglyphs	Special	PH	D	DR
50-10-28-18732	45	Wall	Indeterminate	PH/H	D	DR
50-10-28-18747	64	Site complex	Hab. (R); Agriculture	PH	D	DR
	64A	Mound	Agriculture			
	64B	Mounds	Agriculture			
	64C	Modified outcrop	Agriculture			
	64D	Lava blister	Hab. (R)			
	64E	Terrace	Hab. (R)			
	64F	Platform	Hab. (R)			
	64G	Mounds	Agriculture			
	64H	Irregular-shaped enclosure	Agriculture			

Table 4-15

**ARCHAEOLOGICAL RESOURCES
RECOMMENDED FOR DATA RECOVERY AND PRESERVATION:
ALTERNATIVE 10
(continued)**

State Site #	CSH Site #	Site Type	Function	Probable Age	Significance	Recommended Treatment
50-10-28-18747	64I	Terrace	Hab. (R)	PH	D	DR
	64J	Terrace	Hab. (R)			
50-10-28-18748	65	Site complex	Hab. (R); Agriculture	PH	D	DR
	65A	Platform	Hab. (R)			
	65B	Modified outcrop	Agriculture			P
50-10-28-18749	66	Lava tube	Hab. (R); Burial	PH	A,D	DR/P
50-10-28-18750	67	Site complex	Hab. (R); Burial; Agriculture	PH	A,D	
	67A	Lava tube	Hab. (R)			
	67B	Modified sink	Agriculture			
	67C	Lava tube	Burial			
	67D	Platforms	Agriculture			
	67E	Wall segments	Agriculture			
	67F	Platforms	Agriculture			
	67G	Mounds	Agriculture			
	67H	Terrace	Agriculture	PH	A,D	DR
50-10-28-18751	68	Site complex	Agriculture; Special	PH	A,D	DR
	68A	Wall	Agriculture			
	68B	Terrace	Agriculture			
	68C	Mound	Agriculture			
	68D	Platform	Agriculture			
	68E	Petroglyph	Special			
50-10-28-18754	71	Site complex	Agriculture; Special	PH	D	DR
	71A	Terrace	Agriculture			
	71B	Terrace	Agriculture			
	71C	Mounds	Agriculture			
	71D	Mounds	Agriculture			
	71E	Mounds	Agriculture			
	71F	Irregular-shaped enclosure	Agriculture			
	71G	Terraces	Agriculture			
	71H	Platform	Agriculture			

Table 4-15

**ARCHAEOLOGICAL RESOURCES
RECOMMENDED FOR DATA RECOVERY AND PRESERVATION:
ALTERNATIVE 10
(continued)**

State Site #	CSH Site #	Site Type	Function	Probable Age	Significance	Recommended Treatment
50-10-28-18754	71I	Irregular-shaped enclosure	Agriculture	PH	AD	DR
	71M	Modified outcrop	Agriculture			
	71N	Modified outcrop	Agriculture			
	71O	Modified outcrop	Agriculture			
	71P	Papamu	Special			
50-10-28-18755	72	Site complex	Hab. (R); Agriculture	PH	D	DR
	72A	Modified outcrop	Hab. (R)			
	72B	Modified outcrop	Agriculture			
	72C	Mound	Agriculture			
	72D	Mound	Agriculture			
	72E	Mound	Agriculture			
	72F	Modified outcrop	Agriculture			
	72G	Mound	Agriculture			

Source: Cultural Surveys Hawaii, An Archeological Inventory Survey and Limited Subsurface Testing of the Proposed Kealahou Parkway Extension, Alternatives 10 and 11, June 1994.

Notes: 1 - This table lists resources found only along Alternative 10; resources shared by Alternatives 10 and the Preferred Alternative are listed in Table 4-15.

State site numbers less than -18725 are previously identified sites

SIGNIFICANCE DESIGNATION

- A - Site reflects major trends or events in the history of the state or the nation
- B - Site is associated with the lives of persons significant in our past
- C - Site is an excellent example of a site type
- D - Site may be likely to yield information on prehistory or history

FUNCTION	PROBABLE AGE	RECOMMENDED TREATMENT
Hab. - Habitation	PH - Prehistoric	DR - Data Recovery
(P) - Permanent	H - Historic	P - Preservation
(R) - Recurrent	PH/H - Prehistoric & Historic	
(T) - Temporary	? - Not conclusive	

Table 4-16

**ARCHAEOLOGICAL RESOURCES
RECOMMENDED FOR DATA RECOVERY AND PRESERVATION:¹
PREFERRED ALTERNATIVE**

State Site #	CSH Site #	Site Type	Function	Probable Age	Significance	Recommended Treatment
50-10-28-18178	105	Site complex	Hab.(R); Agriculture	PH	D	DR
	105A	Platform	Hab. (R)			
	105B	C-shaped enclosure-Lava blister	Hab. (R)			
	105C	Rectangular enclosure	Agriculture			
	105D	C-shaped enclosure-Lava blister	Hab. (R)			
50-10-28-18182	110	Site complex	Hab.(P)	PH	D	DR
	110A	Terrace	Hab. (P)			
	110B	Terrace	Hab. (P)			
	110C	Terrace	Hab. (P)			
	110D	Wall segment	Hab. (P)			
50-10-28-18185	113	Lava tube complex	Hab. (P); Burials; Special	PH	A,C,D	P
50-10-28-18209	136	Stepping stone trail	Transportation	PH	D	DR
50-10-28-18220	150	Site complex	Hab. (P); Ag.; Water; Special; Rit.	PH	A,D	DR
	150A	Terrace	Habitation (P)			
	150B	Rectangular enclosure	Habitation (P)			
	150C	Circular enclosure	Possible well			
	150D	Terrace	Habitation (P)			
	150E	Petroglyphs	Special			
	150F	L-shaped enclosure	Agriculture			
	150G	Alignment	Poss. shrine			
50-10-28-18221	151	Site complex	Agriculture	PH	D	DR
	151A	Square enclosure	Agriculture			
	151B	Platform	Agriculture			
	151C	Circular enclosure	Agriculture			

Table 4-16

**ARCHAEOLOGICAL RESOURCES
RECOMMENDED FOR DATA RECOVERY AND PRESERVATION:
PREFERRED ALTERNATIVE
(continued)**

State Site #	CSH Site #	Site Type	Function	Probable Age	Significance	Recommended Treatment
50-10-28-18228	151D	Rectangular	Agriculture	PA	D	DR
	158	Site complex	Agriculture; Special	PH	A,D	DR
	158A	Modified outcrop	Agriculture			
	158B	Platform	Agriculture-work surface			
	158C	Platform	Agriculture-work surface			
	158D	Circular enclosure	Agriculture			
	158E	Petroglyphs	Special			
	158F	Petroglyph	Special			
50-10-28-18241	171	Irregular-shaped enclosure	Agriculture	PH/H	D	DR
50-10-28-18242	172	Modified outcrop	Hab. (T)	PH/H	D	DR
50-10-28-18243	173	Kerbstone trail	Transportation	PH/H?	A,D	DR
50-10-28-18244	174	Lava blister	Hab. (T)	PH	D	DR
50-10-28-18727	29	Site complex	Hab. (P); Special;	PH	A,D	DR
	29A	Triangular-shaped enclosure	Agriculture			
	29B	Irregular-shaped enclosure	Agriculture			
	29C	Modified outcrop	Hab. (P)			
	29D	Rectangular enclosure	Agriculture			
	29E	Mound	Hab. (P)			
	29F	Modified outcrop	Agriculture			
	29G	Irregular-shaped enclosure	Agriculture			
	29H	Terrace	Agriculture			
	29I	Modified outcrop	Agriculture			
	29J	Terrace	Hab. (P)			
	29K	Terrace	Agriculture			
	29L	C-shaped enclosure	Hab. (P)			
	29M	C-shaped enclosure	Agriculture	PH	A,D	DR

Table 4-16

**ARCHAEOLOGICAL RESOURCES
RECOMMENDED FOR DATA RECOVERY AND PRESERVATION:
PREFERRED ALTERNATIVE
(continued)**

State Site #	CSH Site #	Site Type	Function	Probable Age	Significance	Recommended Treatment
50-10-28-18727	29N	Platform	Hab. (P)			
	29O	Irregular-shaped enclosure	Hab. (P)			
50-10-28-18733	29P	Square enclosure	Hab. (P)			
	29Q	C-shaped enclosure	Agriculture			
	29R	Papamu	Special			
	29S	Irregular-shaped enclosure	Agriculture			
	29T	Wall	Agriculture			
	29U	Terrace	Hab. (P)			
	29V	Mound	Agriculture			
	29W	Mound	Agriculture			
	29X	Petroglyph	Special			
	29Y	Petroglyphs	Special			
	29Z	Petroglyph	Special			
	47	Kerbstone trail	Transportation		PH/H	DR
	54	Site complex	Agriculture		PH/H?	DR
	54A	Wall	Agriculture			
	54B	Mound	Agriculture			
	54C	C-shaped enclosure	Agriculture			
	54D	Mound	Agriculture			
54E	Platform	Agriculture				
54F	Wall segments	Agriculture				
54G	Mound	Agriculture				
54H	Terrace	Agriculture				
54I	Mound	Agriculture				
54J	Modified outcrop	Agriculture				
54K	Mound	Agriculture				
54L	Mounds	Agriculture				
54M	Mound	Agriculture				
55	Terrace	Hab. (R); Agriculture		PH/H?	DR	
50-10-28-18738				PH	D	DR
					D	DR

Table 4-16

**ARCHAEOLOGICAL RESOURCES
RECOMMENDED FOR DATA RECOVERY AND PRESERVATION:
PREFERRED ALTERNATIVE
(continued)**

State Site #	CSH Site #	Site Type	Function	Probable Age	Significance	Recommended Treatment
50-10-28-18739	56	Site complex	Hab. (T); Agriculture	PH	D	DR
	56A	Modified outcrop	Hab. (T)			
	56B	Alignment	Agriculture			
	56C	Wall segment	Agriculture			
	56D	Mound	Agriculture			
50-10-28-18740	57	Site complex	Hab. (P)	PH	D	DR
	57A	Platform	Hab. (P)			
	57B	Wall segments	Hab. (P)			
	57C	Terrace	Hab. (P)			
	57D	Wall	Hab. (P)			
50-10-28-18741	58	Platform	Hab. (P)	PH	D	DR
50-10-28-18742	59	Terrace	Hab. (P)	PH	D	DR
50-10-28-18743	60	Papamu	Agriculture	PH	D	DR
50-10-28-18744	61	L-shaped Enclosure	Special	PH	D	DR
			Hab. (R)			

Source: Cultural Surveys Hawaii, An Archeological Inventory Survey and Limited Subsurface Testing of the Proposed Kealahou Parkway Extension, Alternatives 10 and 11, June 1994.

Notes: 1 - This table lists resources found only along the Preferred Alternative; resources shared by Alternatives 10 and the Preferred Alternative are listed in Table 4-15. State site numbers less than -18725 are previously identified sites.

SIGNIFICANCE DESIGNATION

- A - Site reflects major trends or events in the history of the state or the nation
- B - Site is associated with the lives of persons significant in our past
- C - Site is an excellent example of a site type
- D - Site may be likely to yield information on prehistory or history

FUNCTION

- Hab. - Habitation
- (P) - Permanent
- (R) - Recurrent
- (T) - Temporary
- Ag. - Agriculture
- Rit. - Ritual

PROBABLE AGE

- PH - Prehistoric
- H - Historic
- PH/H - Prehistoric & Historic
- ? - Not conclusive

RECOMMENDED TREATMENT

- DR - Data Recovery
- P - Preservation

Table 4-17

**ARCHAEOLOGICAL RESOURCES
RECOMMENDED FOR DATA RECOVERY AND PRESERVATION:
COMMON TO ALTERNATIVE 10 AND THE PREFERRED ALTERNATIVE CORRIDOR, AND
THE DETOUR ROAD CORRIDOR**

State Site #	CSH Site #	Site Type	Function	Probable Age	Significance	Recommended Treatment	Route
50-10-27-00002	3	Kerbstone trail	Transportation	PH/H	A,D	P	I
50-10-27/28-13006	73	Kerbstone trail	Transportation	PH/H	A,C,D	P	10 & PA
50-10-27-13194	none	Trail	Transportation	PH	A,D	P	I
50-10-28-18099	20	Kerbstone trail	Transportation	PH/H	A,C,D	P	10 & PA
50-10-28-18363	308	Site complex	Homestead-Hab. (P); Transportation	H	A,D	DR	10 & PA
	308A	Terrace	Homestead-Hab. (P)				
	308B	Wall	Homestead-Hab. (P)				
	308C	Possible cart road	Transportation				
50-10-28-18383	329	Site complex	Homestead-Hab. (P)	H	A,D	DR	10 & PA
	329A	Rectangular enclosure	Homestead-Hab. (P)				
	329B	Rectangular enclosure	Homestead-Hab. (P)				
	329C	Rectangular enclosure	Homestead-Hab. (P)				
	329D	Rectangular enclosure	Homestead-Hab. (P)				
50-10-28-18384	330	Rectangular enclosure	Hab.	PH	D	DR	10 & PA
50-10-28-18391	337	Platform	Agriculture	H?	D	DR	10 & PA
50-10-28-18393	-18393A	Site Complex	Hab. (P); Ag.	PH	D	DR	Detour
	18393B	Platform Terrace	Hab. (P) Ag.				

Table 4-17

**ARCHAEOLOGICAL RESOURCES
RECOMMENDED FOR DATA RECOVERY AND PRESERVATION:
COMMON TO ALTERNATIVE 10 AND THE PREFERRED ALTERNATIVE CORRIDOR,
AND THE DETOUR ROAD CORRIDOR
(continued)**

State Site #	CSH Site #	Site Type	Function	Probable Age	Significance	Recommended Treatment	Route
50-10-28-18393	-18393C	Rectangular Enclosure	Ag.	PH	D	DR	Detour
	-18393D	Rectangular Enclosure	Ag.				
	-18393E	Wall Segment	Ag.				
	-18393F	Mound	Ag.				
	-18393G	Terrace	Ag.				
	-18393H	Enclosure	Ag.				
50-10-38-18396		Rectangular Enclosure	Hab. (P)	H	D	DR	Detour
50-10-38-18397		Walled Field Complex	Ag.	PH/H	C,D	DR	Detour
50-10-28-18725	1	Site complex	Agriculture; Animal Containment	PH/H	A,C,D	DR	10 & PA
	1A	Circular enclosure	Agriculture/Animal containment?				
	1B	Rectangular enclosure	Agriculture				
	1C	Rectangular enclosure	Agriculture				
	1D	Wall	Agriculture				
	1E	Rectangular enclosure	Agriculture				
	1F	Rectangular enclosure	Agriculture				
	1G	Irregular-shaped enclosure	Poss. Animal Containment				

Table 4-17

**ARCHAEOLOGICAL RESOURCES
RECOMMENDED FOR DATA RECOVERY AND PRESERVATION:
COMMON TO ALTERNATIVE 10 AND THE PREFERRED ALTERNATIVE CORRIDOR,
AND THE DETOUR ROAD CORRIDOR
(continued)**

State Site #	CSH Site #	Site Type	Function	Probable Age	Significance	Recommended Treatment	Route
50-10-28-18725	1H	Mounds	Agriculture - Work surface	PH/H	A,C,D	DR	10 & PA
	1I	Terrace	Agriculture				
	1J	Irregular-shaped enclosure	Agriculture				
	1K	Wall	Agriculture				
	1L	Wall	Agriculture				
	1M	Terrace	Agriculture				
50-10-28-18726	2	Cart road	Transportation	H	D	DR	10 & PA
50-10-28-18728	39	Site complex	Homestead-Hab. (P)	H	A,D	DR	10 & PA
	39A	Circular domed enclosure	Charcoal oven				
	39B	Terrace	Hab. (P)				
	39C	Platform	Hab. (P)				
	39D	Mound	Agriculture				
	39E	Modified outcrop	Hab. (P)				
50-10-28-18729	41	Site complex	Hab. (R); Ag.; Special; Water	PH/H	A,D	DR	10 & PA
	41A	Terrace	Agriculture				
	41B	Lava tube	Hab. (R)				
	41C	Wall	Agriculture				
	41D	Terrace	Agriculture				
	41E	Mounds	Agriculture				
	41F	Lava tube	Hab. (R); water source				
	41G	Terrace	Agriculture				
	41H	Terrace	Agriculture				

Table 4-17

**ARCHAEOLOGICAL RESOURCES
RECOMMENDED FOR DATA RECOVERY AND PRESERVATION:
COMMON TO ALTERNATIVE 10 AND THE PREFERRED ALTERNATIVE CORRIDOR,
AND THE DETOUR ROAD CORRIDOR
(continued)**

State Site #	CSH Site #	Site Type	Function	Probable Age	Significance	Recommended Treatment	Route
50-10-28-18729	41I	Petroglyph	Special	PH/H	A,D	DR	10 & PA
	41J	Wall	Agriculture				
	41K	Walls	Agriculture				
50-10-28-18730	42	Site complex	Hab. (R); Ag.; Animal Pen; Marker	PH/H	D	DR	M
	42A	Wall	Site boundary				
	42B	Terraces	Agriculture				
	42C	Mound	Agriculture				
	42D	Irregular-shaped enclosures	Agriculture				
	42E	Faced depressions	Agriculture				
	42F	Mound	Agriculture				
	42G	Ahu	Marker				
	42H	Oval enclosures	Agriculture				
	42I	Irregular-shaped enclosures	Agriculture				
	42J	Terrace	Agriculture				
	42K	Wall	Agriculture				
	42L	Pavement	Agriculture work surface				
	42M	L-shaped enclosure	Poss. animal containment				
	42N	Terrace	Agriculture				
	42O	Wall	Agriculture				
	42P	Terrace	Agriculture				
	42Q	Mound	Agriculture				
	42R	Wall	Agriculture				

Table 4-17

**ARCHAEOLOGICAL RESOURCES
RECOMMENDED FOR DATA RECOVERY AND PRESERVATION:
COMMON TO ALTERNATIVE 10 AND THE PREFERRED ALTERNATIVE CORRIDOR,
AND THE DETOUR ROAD CORRIDOR
(continued)**

State Site #	CSH Site #	Site Type	Function	Probable Age	Significance	Recommended Treatment	Route
50-10-28-18730	42S	Pavement	Hab. (R)	PH/H	D	DR	M
50-10-28-18734	51	Terrace	Hab. (P)	PH	D	DR	10 & PA
50-10-28-18735	52	Lava tube	Hab. (R); Water Source	PH	D	DR	10 & PA
50-10-28-18736	53	Site Complex	Hab. (P); Agriculture	PH/H?	D	DR	10 & PA
	53A	Mound	Agriculture				
	53B	Mounds	Agriculture				
	53C	Platform	Agriculture				
	53D	Rectangular enclosure	Hab. (P)				
	53E	Mound	Agriculture				
	53F	Mound	Agriculture				
	53G	Mound	Agriculture				
50-10-28-18745	62	Site complex		PH	D	DR	10 & PA
	62A	Terrace					
	62B	Terrace					
	62C	Wall segment					
	62D	Wall segment					
50-10-28-18757	74	Site complex		PH	D	DR	10 & PA
	74A	Wall segment	Site boundary				
	74B	Wall segment	Agriculture				
	74C	Wall segment	Agriculture				
	74D	Wall segment	Agriculture				
	74E	Terrace	Agriculture				
	74F	Mounds	Agriculture				
50-10-28-19627	1	Platform	Hab.	PH	D	DR	Detour
50-10-28-19628	2	Platform	Hab. (P)	PH	D	DR/P	Detour

Table 4-17

**ARCHAEOLOGICAL RESOURCES
RECOMMENDED FOR DATA RECOVERY AND PRESERVATION:
COMMON TO ALTERNATIVE 10 AND THE PREFERRED ALTERNATIVE CORRIDOR,
AND THE DETOUR ROAD CORRIDOR
(continued)**

State Site #	CSH Site #	Site Type	Function	Probable Age	Significance	Recommended Treatment	Route
50-10-28-19629	3	Site Complex	Hab. (P); Ag.	PH/H	C,D	DR/P	
	3A	Enclosure	Hab.				
	3B	Wall	Ag.				
	3C	Enclosure	Hab.				
	3D	Mounds	Ag.				
	3E	Enclosure	Hab.				
	3F	Terrace	Ag.				
	3G	Enclosure	Ag.				
50-10-28-19630	4	Enclosure	Hab. (P)	PH	D	DR	Detour

Source: Cultural Surveys Hawaii, An Archeological Inventory Survey and Limited Subsurface Testing of the Proposed Kealahou Parkway Extension, Alternatives 10 and 11, June 1994.

Notes: State site numbers less than --18725 are previously identified sites.

SIGNIFICANCE DESIGNATION

- A - Site reflects major trends or events in the history of the state or the nation
- B - Site is associated with the lives of persons significant in our past
- C - Site is an excellent example of a site type
- D - Site may be likely to yield information on prehistory or history

FUNCTION	PROBABLE AGE	RECOMMENDED TREATMENT	ALTERNATIVE ROUTE
Hab. - Habitation	PH - Prehistoric	DR - Data Recovery	I - Queen Kaahumanu Intersection
(P) - Permanent	H - Historic	P - Preservation	M - Mauka Corridor Section
(R) - Recurrent	PH/H - Prehistoric & Historic		PA - Preferred Alternative
Ag. - Agriculture			

Table 4-18

**ARCHAEOLOGICAL RESOURCES
RECOMMENDED FOR NO FURTHER WORK**

State Site #	CSH Site #	Site Type	Function	Probable Age	Significance	Alignment Alternative
50-10-28-13188	**	Site complex	Hab.(R); Agriculture	PH	D	10 & PA
50-10-28-16009	**	Site complex	Hab.(T); Agriculture	PH	D	10 & PA
50-10-28-16033	103	Modified outcrop	Agriculture	PH	D	PA
50-10-28-16041	**	Site complex	Agriculture	PH	D	10 & PA
50-10-28-18115	none	Wall System	Cattle containment	H	D	DR
50-10-28-18177	104	Modified outcrop	Agriculture	PH	D	PA
50-10-28-18252	182	Terrace	Hab. (R)	PH	D	10
50-10-28-18272	202	Site complex	Agriculture	PH	D	10
50-10-28-18286	216	Site remnant	Indeterminate	PH	D	10
50-10-28-18289	219	Wall	Indeterminate	PH	D	10
50-10-28-18356	51,153, 301	Wall segments	Ahupua'a boundary	PH	D	10
50-10-28-18392	338	Site remnant	Indeterminate	?	D	10 & PA
50-10-28-18746	63	Site complex	Agriculture	PH	D	10 & PA
	63A	Mounds	Agriculture			
	63B	Mound	Agriculture			
	63C	Modified outcrop	Agriculture			
	63D	Mound	Agriculture			
	63E	Mound	Agriculture			
	63F	Wall	Agriculture			
50-10-28-18752	69	Ahu	Marker	H	D	10

Table 4-18

**ARCHAEOLOGICAL RESOURCES
RECOMMENDED FOR NO FURTHER WORK
(continued)**

State Site #	CSH Site #	Site Type	Function	Probable Age	Significance	Alignment Alternative
50-10-28-18753	70	Terrace	Hab. (R)	PH	D	10
50-10-28-18756	73	Platform	Agriculture	PH	D	10
50-10-28-19631	5	Wall System	Cattle Containment	H	D	DR

Source: Cultural Surveys Hawaii, An Archeological Inventory Survey and Limited Subsurface Testing of the Proposed Kealahou Parkway Extension, Alternatives 10 and 11, June 1994.

Notes: ** - PHRI Sites

State site numbers less than --18725 are previously identified sites.

SIGNIFICANCE DESIGNATION

- A - Site reflects major trends or events in the history of the state or the nation
- B - Site is associated with the lives of persons significant in our past
- C - Site is an excellent example of a site type
- D - Site may be likely to yield information on prehistory or history

FUNCTION

- Hab. - Habitation
- (R) - Recurrent
- (T) - Temporary

PROBABLE AGE

- PH - Prehistoric
- H - Historic
- ? - Not conclusive

ALTERNATIVE ROUTE

- PA - Preferred Alternative
- DR - Detour Road



The FHWA found that the Preferred Alternative will have an "adverse effect" on all the sites affected by the Preferred Alternative, and therefore, per 36 CFR 800.5(e)(4), the FHWA found that a Memorandum of Agreement (MOA) had to be prepared. In a letter dated April 12, 1996 (see Appendix C.1), the State Historic Preservation Officer (SHPO) concurred with the "adverse effect" assessment, and the need for an MOA. An MOA was subsequently developed, with full opportunity for public comment (see Section 4.12.4), which has been signed by the FHWA, SHPO, and the ACHP (see Appendix C.3). The MOA establishes the mitigation treatments for the sites (e.g., data recovery, preservation-in-place), and the process by which the treatment plans will be developed and approved.

If Alternative 10 is selected in the project's Record of Decision, the "Criteria of Effect" and "Criteria of Adverse Effect" will have to be applied, and most likely, a separate MOA will have to be executed prior to the approval of the expenditure of any federal funds for potential destructive activities (36 CFR 800.3(c)).

Tables 4-16 and 4-17 summarize the treatment of the sites affected by the Preferred Alternative as established by the MOA as follows:

- one (1) site: preservation-in-place;
- four (4) sites: partial or complete preservation, but not preservation-in-place where they are affected by the Preferred Alternative;
- one (1) site: data recovery and preservation, but not preservation-in-place;
- thirty-nine (39) sites: data recovery; and
- nine (9) sites: no further work.

The sites requiring for "no further work" were not included in the MOA since it is believed that no further scientific data is obtainable from these sites beyond what was acquired during the inventory survey (e.g., site configuration, description, and plotted location).

For the 40 sites requiring data recovery, the MOA mandated the preparation of a data recovery plan that will specify:

- sites to be data recovered;
- the research questions to be addressed through the data recovery, with an explanation of their relevance and importance;

- the methods to be used with an explanation of their relevance to the research questions;
- contents of the archaeological data recovery report;
- the report review procedures;
- a report completion date;
- proposed distribution of the results; and
- proposed methods by which native Hawaiian groups will be notified when the work is beginning and be provided a summary of the report findings.

The following are the sites requiring preservation (see Figure 4-6) by the MOA:

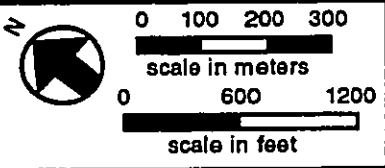
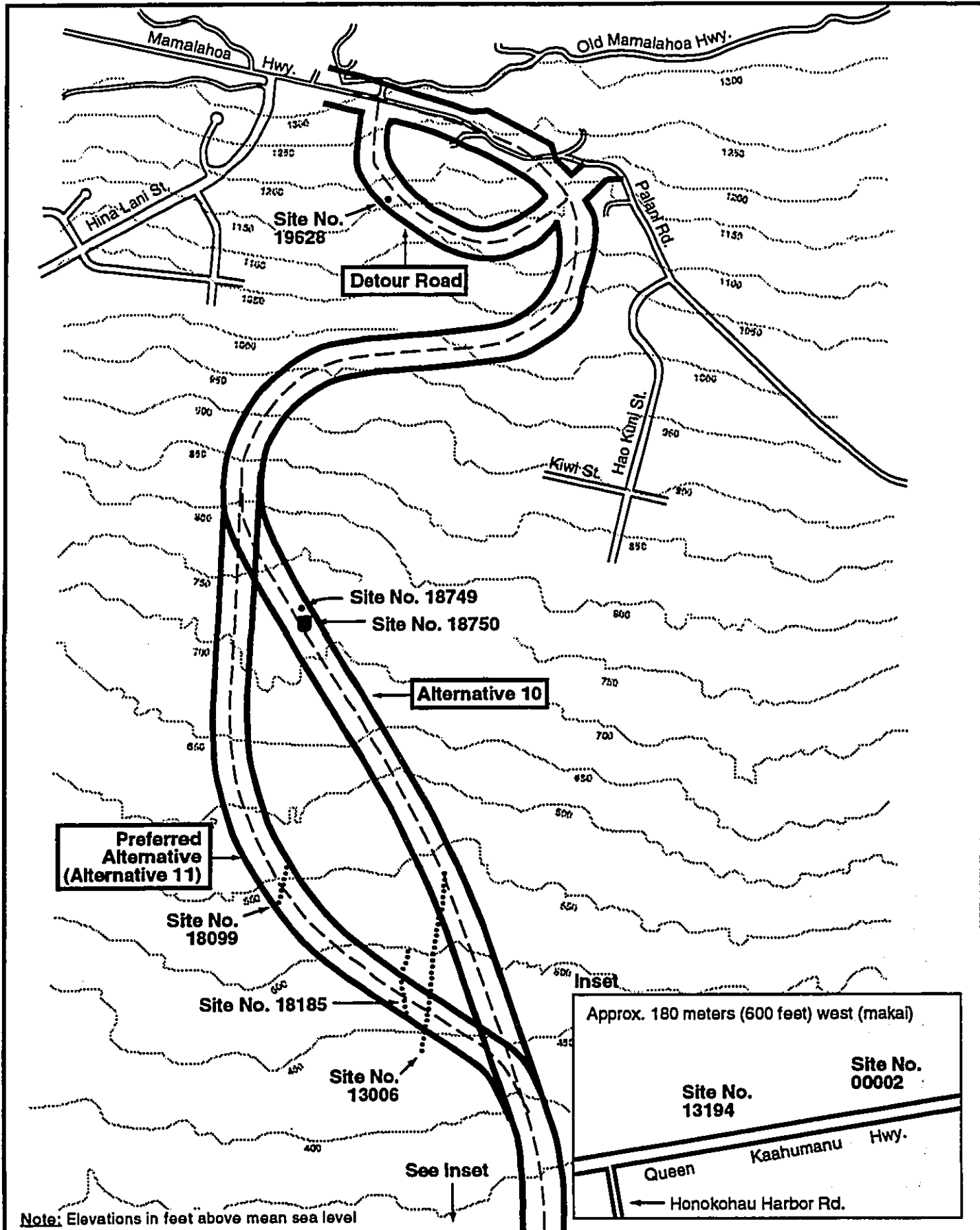
- State Site # 50-10-27-00002: Kerbstone Trail (Mamalahoa Trail)
- State Site # 50-10-27/28-13006: Kerbstone Trail
- State Site # 50-10-27-13194: Trail (Traditional)
- State Site # 50-10-28-18099: Kerbstone Trail
- State Site # 50-10-28-18185: Lava Tube Complex
- State Site # 50-10-28-19628: Platform

4.12.3.1 TRAILS

Two kerbstone trails will be crossed by the Preferred Alternative. Sites 50-10-27/28-13006 and 50-10-28-18099. Lengths of these trails within the construction zone of the Preferred Alternative measure 850 meters (2,850 feet) and 3070 meters (10,120 feet), respectively. The trails are oriented in an east-west (mauka-makai) direction. These trails have been previously breached in numerous places.

The traditional trail (Site 50-10-27-13194) and Mamalahoa Trail (Site 50-10-27-00002) are located on State land near the Queen Kaahumanu/Kealakehe Parkway intersection. The traditional trail was recommended for preservation within the Housing Finance and Development (HFDC) proposed golf course. Mamalahoa Trail is a kerbstone horse trail that was constructed during the nineteenth century. It has been breached in several places by other east-west (mauka-makai) roads, including the HFDC portion of Kealakehe Parkway. Both trails are in fair to poor condition.

All trails were scored "Significance Criterion A" which indicates a site that reflects major trends in the history of the State or nation. The kerbstone trails represent two major trends in Hawaiian history: the alteration of traditional Hawaiian trails for horse



**ARCHAEOLOGICAL SITES
RECOMMENDED FOR PRESERVATION
KEALAKEHE PARKWAY EIS**

**Figure
4-6**

travel during the mid to late 1800s, and for Mamalahoa Trail, the subsequent alteration into a jeep trail during the 20th century; and the historic Japanese settlement of upland areas and initiation of coffee and "truck" farming. Each trail also has at least one other significance designation, "D", which indicates a site that may yield information important in prehistory and history.

Although the MOA requires that these trails be preserved, it does not require preservation-in-place where they will be affected by the Preferred Alternative. The two east-west (mauka-makai) kerbstone trails extend well beyond the corridor of the Preferred Alternative, and since other sections of these trails are in better condition than the sections affected by the Preferred Alternative, preservation-in-place will not be required where the trails will be affected by the Preferred Alternative. Beyond the construction zone of the Preferred Alternative, the trails will not be disturbed.

Although the traditional trail and the Mamalahoa Trail have been recommended for preservation in previous archaeological studies, because both trails have been previously breached, and are only in fair to poor condition where affected by this project, preservation-in-place will not be required.

4.12.3.2 PLATFORM AND SITE COMPLEX

Site 50-10-28-19628 is a large rectangular platform encompassing a walkway and a terrace structure. It is located within the construction zone of the detour road. Its significance designation is "D", indicating that the site may yield information important in prehistory and history. The MOA requires data recovery and preservation of this site. However, the site does not require preservation-in-place. The data recovery procedures were described above.

4.12.3.3 LAVA TUBE COMPLEX

The only archaeological site affected by the Preferred Alternative that requires preservation-in-place is Site 50-10-28-18185, a lava tube complex. Section 4.13.1.1.2 and Appendix C.2 provide a description of this site. Section 4.13.1.1.5 describes treatment measures that have been agreed upon by the FHWA, SHPO and ACHP, and are conditions of the MOA.

More details on all sites may be found in An Archaeological Inventory Survey and Limited Subsurface Testing of the Proposed Kealakehe Parkway Extension, Alternatives 10 and 11 and the Addendum Report to the Kealakehe Parkway Extension (June 1994).

4.12.4 Consultation And Community Input

Copies of the archaeologist's reports were forwarded to the SHPO seeking concurrence with the report's conclusions. Subsequently, the following State and local agencies and native Hawaiian groups were contacted to solicit their input on sites in the project area, significance evaluations, and mitigation recommendations:

- Office of Hawaiian Affairs (OHA);
- Department of Hawaiian Home Lands (DHHL);
- Hawaii Island Burial Council;
- Hui Malama I Na Kupuna O Hawai'i Nei;
- Daughters of Hawaii;
- Kona Hawaiian Civic Club;
- Native Hawaiian Advisory;
- Na Ohana O Kekaha; and
- Pai 'Ohana Association.

Each organization received copies of the archaeologist's reports and a general location map to review. With the exception of the Pai 'Ohana Association, each group also received a one-page questionnaire to elicit comments, and an invitation to attend the November 30, 1994 public information meeting. All coordination occurred with the knowledge of the SHPO. Evidence of this effort is exhibited in Appendix C.1.

In addition, the project's archaeological findings were presented to the Land and Sovereignty Committee of the Office of Hawaiian Affairs on August 8, 1996, and a project presentation was made a second time to the Hawaii Island Burial Council on September 19, 1996. Also, a draft of the MOA was sent to eight Hawaiian organizations for review before being finalized. A response was received from one group (Hui Malama I Na Kupuna O Hawaii Nei), and a written response was provided (see Appendix C.1).

4.13 SECTION 4(f) EVALUATION

Section 4(f) of the Department of Transportation Act, 49 U.S.C. 303 and 23 U.S.C. 138 (referred to hereafter as "Section 4(f)") permits the use of land for a transportation project from a significant publicly-owned public park, recreation area, wildlife and waterfowl refuge, or a historic site only when the Federal Highway Administration (FHWA) has determined that:

- there is no feasible and prudent alternative to such use; and
- the project includes all possible planning to minimize harm to the property resulting from such use.

Thus, the purpose of Section 4(f) is to preserve significant parkland, recreation areas, refuges, and historic/archaeological sites by limiting the circumstances under which such land can be used for transportation projects.

The word "use" in this case means:

- land is permanently incorporated into a transportation facility;
- there is a temporary occupancy of land that is adverse in terms of preservation of the resource; or
- the project's proximity to the site substantially impairs those functions that qualify the site as a Section 4(f) resource even though no land is permanently or temporarily acquired. This is called "constructive use."

Neither the Preferred Alternative nor Alternative 10 will use lands from publicly-owned public parks or recreational facilities, or wildlife and waterfowl refuges, because there are no such resources within the project limits. The nearest publicly-owned public park is Kaloko-Honokohau National Historic Park located west (makai) of Queen Kaahumanu Highway.

An archaeological site falls within the protection afforded by Section 4(f) only if it is on or eligible for the National Register of Historic Places and the site has been determined, after consultation with the SHPO and the ACHP, to be important for preservation-in-place. Three such sites have been identified in the project area and their locations are shown on Figure 4-7. The SHPO's letters of December 23, 1993 and August 3, 1994 (see Appendix C.1) agree with these determinations. The Preferred Alternative will use only one archaeological site that was determined to be

eligible for the National Register and important for preservation-in-place: State Site 50-10-28-18185 (see Section 4.12.3). Alternative 10 would use two sites (State Sites 50-10-28-18749 and 50-10-28-18750) eligible for the National Register and important for preservation-in-place.

4.13.1 Evaluation of State Site 50-10-28-18185

Site Type: Lava tube; petroglyph

Function: Permanent habitation; burials

Special Features (#): 12

Dimension: 1020 m² (11,016 sq. ft.)

Elevation: 140-155 m (460-510 ft.) above mean sea level

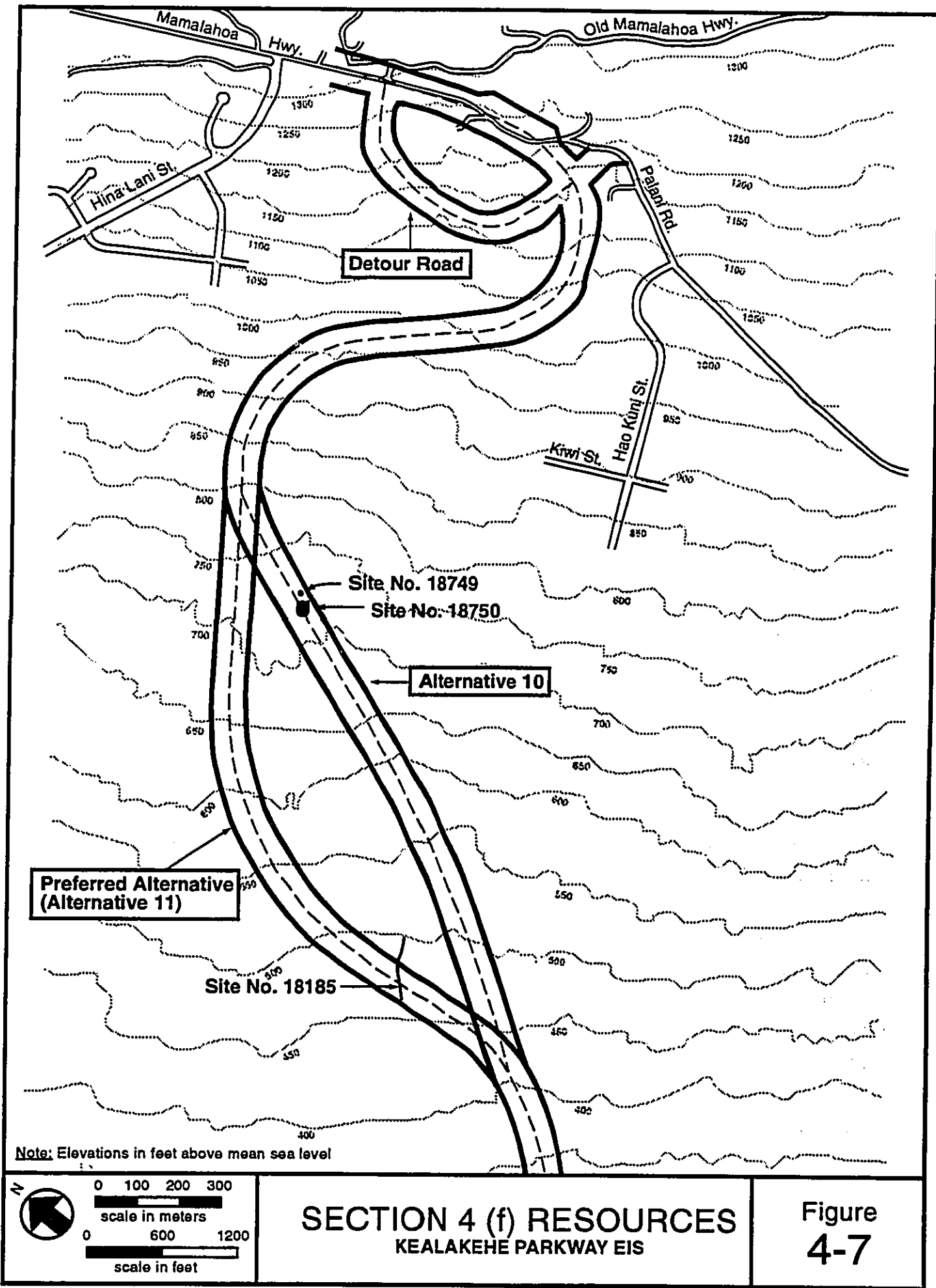
4.13.1.1 PROPOSED ACTION

Approximately 122 meters (300 feet) of the lava tube exists within the Preferred Alternative construction zone (see Figure 4-7). The remaining 82 meters (270 feet) occur beyond the construction zone, east (mauka) of the alignment corridor. The portion of the alignment closest to the lava tube is located between the 122 and 152 meter (450- and 500-foot) elevation levels.

4.13.1.2 DESCRIPTION OF THE SECTION 4(f) RESOURCE

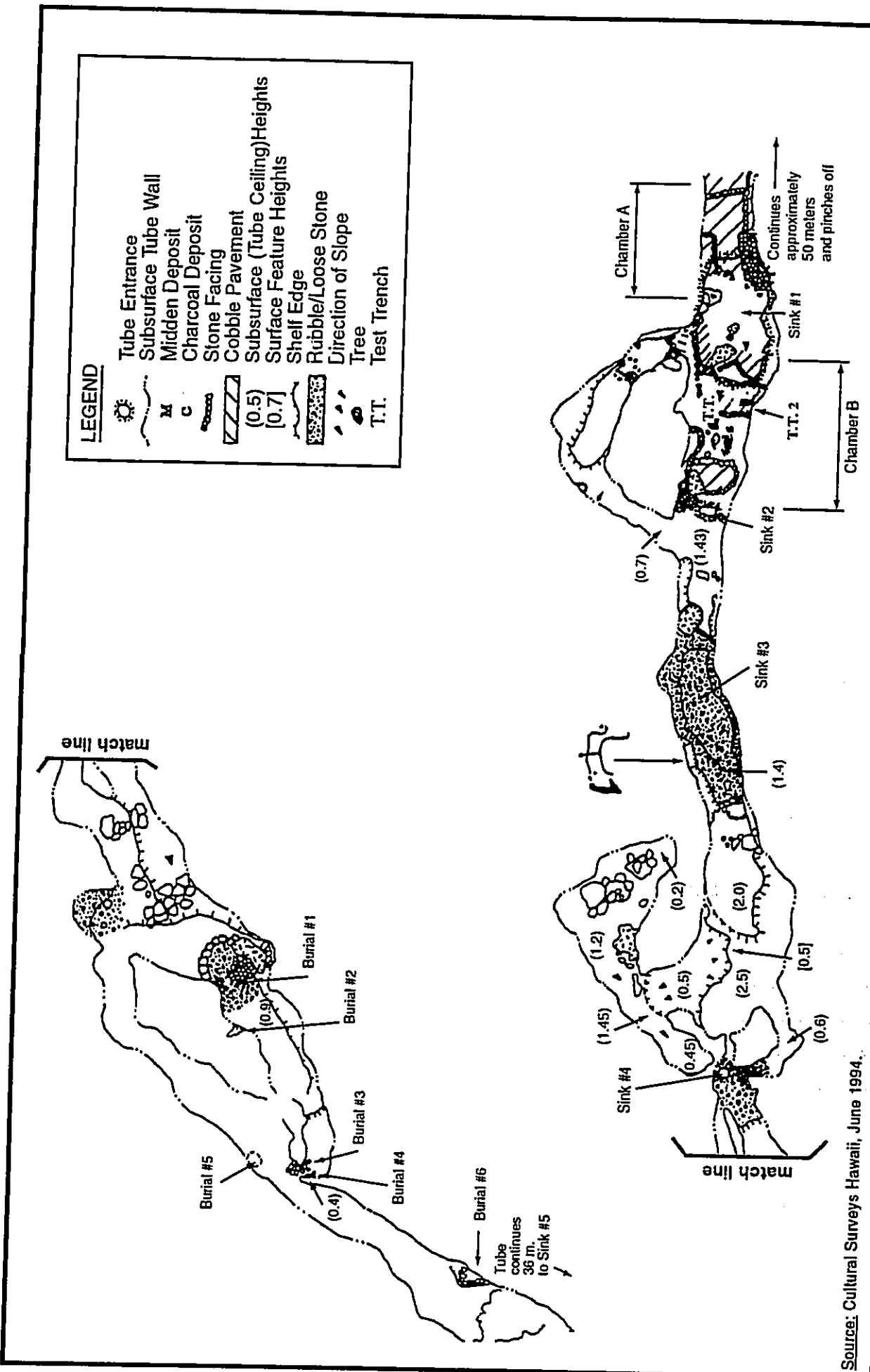
Site 18185 is a lava tube system located below an undulating pahoehoe flow which is gently sloping west (makai) (see Figure 4-8). The area has scattered pockets of soil. Surface vegetation includes noni, koa hole, grasses and air plants.

The lava tube system is quite extensive and contains interior structures, petroglyphs, burials and a variety of cultural material. The lava tube consists of a main tube oriented in an east/west (mauka/makai) direction with a few subsidiary tubes extending short distances perpendicular to the main tube. The accessible portion of the main tube extends approximately 255 meters (837 feet) east/west. Five areas of ceiling collapse (surface sinks) create entrances into the lava tube. These sinks form light zones where human activities appear to have been focused.



SECTION 4 (f) RESOURCES
KEALAKEHE PARKWAY EIS

Figure
4-7



ARCHAEOLOGICAL SITE 50-10-28-18185
KEALAKEHE PARKWAY EIS

Figure
4-8

The Site 18185 lava tube is in good condition. Based on testing results, the habitation areas (Chambers A and B) of the lava tube exhibit good excavation potential.

Appendix C.2 describes details of the 12 features encountered at Site 18185.

4.13.1.3 IMPACT ON THE SECTION 4(f) RESOURCE BY THE PROPOSED ACTION

The total encroachment of the Preferred Alternative on this site is estimated to be approximately 610 m² (6,570 sq. ft.) after considering site boundaries and the necessary grading work in this vicinity. To achieve the desired profile where the roadway crosses Site 18185, it is expected that approximately 1.8 meters (6.0 feet) of overburden material may need to be removed. To provide a stable roadway foundation, subsurface voids, and possibly portions of the tube itself, will be filled. However, the specifics of the Section 4(f) use cannot be precisely determined without detailed surveying (see Section 4.13.5), i.e., the precise portion or amount of the tube that will be filled is not known at this time pending additional surveying and detailed engineering.

Valuable archaeological artifacts and burials within the affected section of the tube will be damaged during construction if no mitigation measures are implemented. The Preferred Alternative could, therefore, severely affect the historical value of this site.

4.13.2 Evaluation Of State Site 50-10-28-18749

Site Type: Lava Tube

Function: Recurrent habitation: Burial

Features (#): 1

Dimension: 350.0 m² (3,765.4 sq. ft.)

Elevation: 219 m. (719 ft.) above mean sea level

4.13.2.1 PROPOSED ACTION

The lava tube is 30 meters (100 feet) south of the 110+00 centerline stake of Alternative 10, located entirely within the construction zone (see Figure 4-7). The

portion of the alignment closest to the site is located near the 220 meter (730-foot) elevation level.

4.13.2.2 DESCRIPTION OF THE SECTION 4(f) RESOURCE

Site 18749 is a lava tube (see Figure 4-9). The tube entrance is situated along the east (mauka) edge of a large sink located west (makai) of survey stake 100+00. The surrounding terrain, sloping gently west (makai), consists of eroded pahoehoe with outcrops and shallow soil deposits. Vegetation in the area includes grasses, *koa haole*, and lantana.

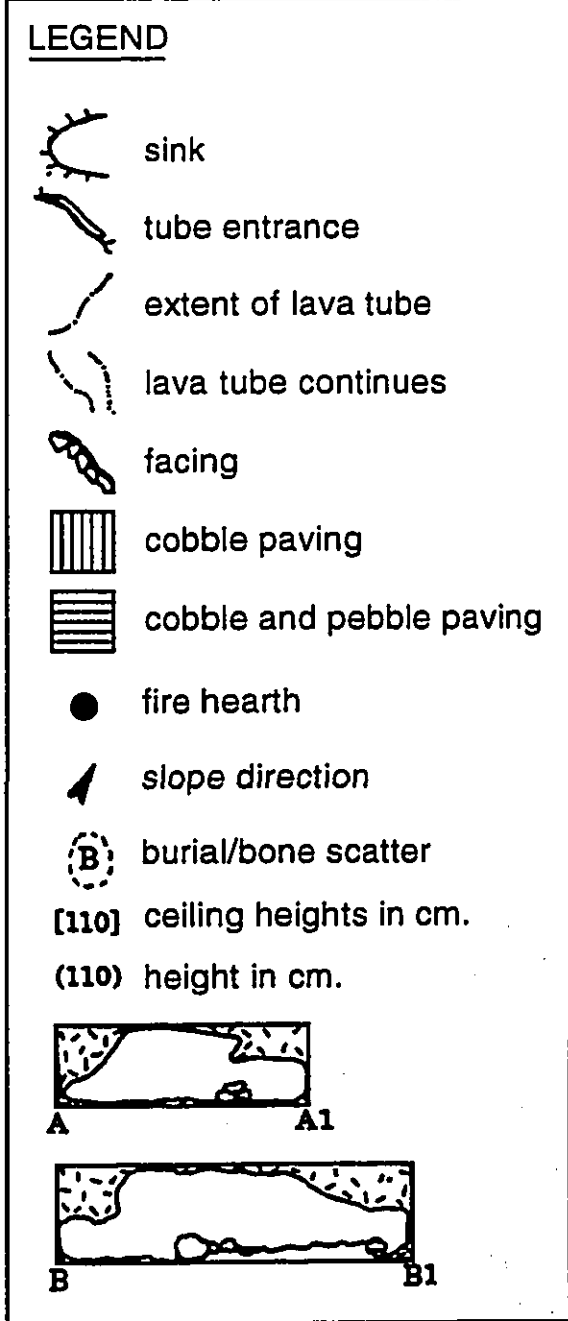
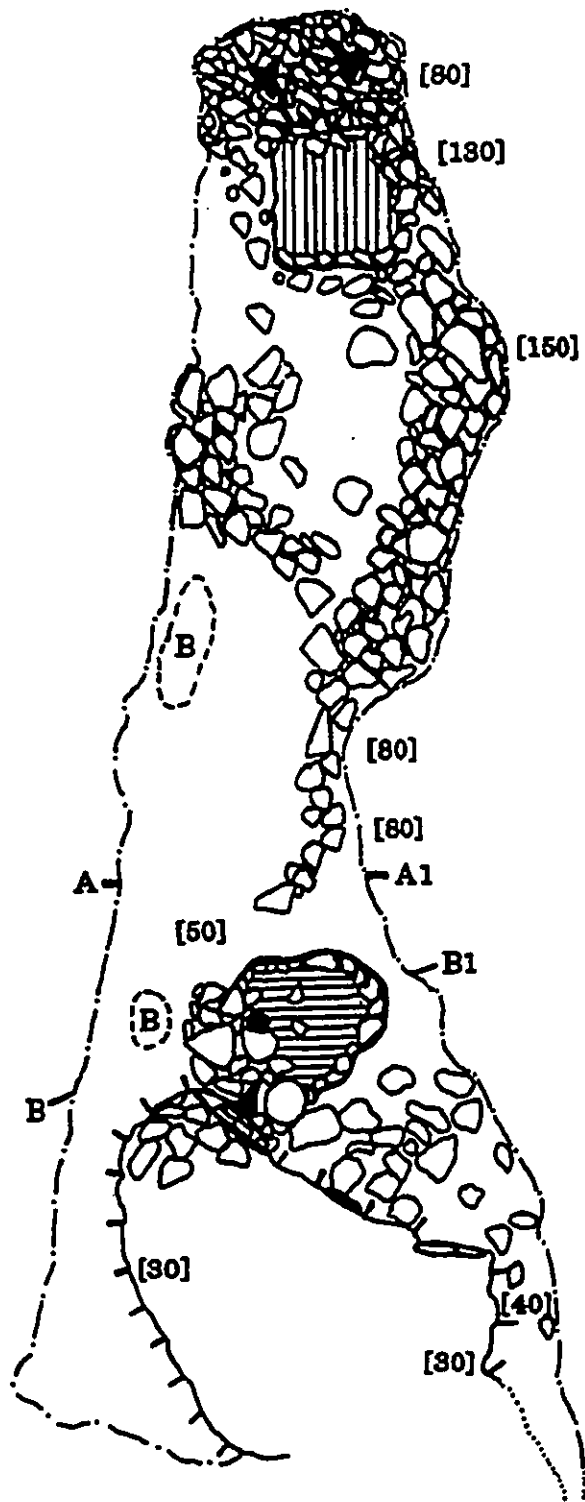
Site 18749 is in fair condition. It is a burial site with recurrent habitation subfeature components. It is likely that the interment of the burial postdated the habitation occupation.

Appendix C.2 describes Site 18749 in greater detail.

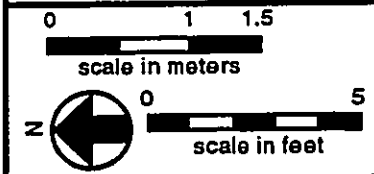
4.13.2.3 IMPACT ON THE SECTION 4(f) RESOURCE BY THE PROPOSED ACTION

The encroachment of Alternative 10 on this site would be the entire site, totaling 350 m² (3,765 sq. ft.), after considering site boundaries and the necessary grading work in this vicinity. Approximately 2.4 meters (8.0 feet) of overburden material would need to be removed to achieve the desired roadway profile. Such excavation could affect the lava tube. To provide a stable roadway foundation, subsurface voids, and possibly the lava tube itself, would be filled.

Valuable artifacts and burials within the affected section of the tube would be damaged during construction if no mitigation measures are implemented. Alternative 10 would, therefore, severely affect the historical value of this site.



Source: Cultural Surveys Hawaii, June 1994.



ARCHAEOLOGICAL SITE
50-10-28-18749
KEALAKEHE PARKWAY EIS

Figure
4-9

4.13.3 Evaluation of State Site 50-10-28-18750

Site Type: Site Complex

Function: Recurrent habitation: Agriculture: Burial

Features (#): 8

Dimension: 1764.0 m² (18,977.8 sq. ft.)

Elevation: 213 m. (700 ft.) above mean sea level

4.13.3.1 PROPOSED ACTION

The centerline of Alternative 10 will pass through the middle of the site complex (see Figure 4-7). The site is located at approximately the 108+00 staked location of the alignment. The portion of the alignment closest to the site is located near the 213 meter (700-foot) elevation level.

4.13.3.2 DESCRIPTION OF THE SECTION 4(f) RESOURCE

Site 18750 is a site complex consisting of two lava tubes (Features A and C), a modified sink (Feature B), two platforms (Features D and E), a wall (Feature F), mounds (Feature G), and a terrace (Feature H) (see Figure 4-10). The terrain is exposed pahoehoe outcrop with shallow soil pockets in the lower regions of the outcrop. Vegetation surrounding the site consists of *koa hale*, *lantana*, and various grasses.

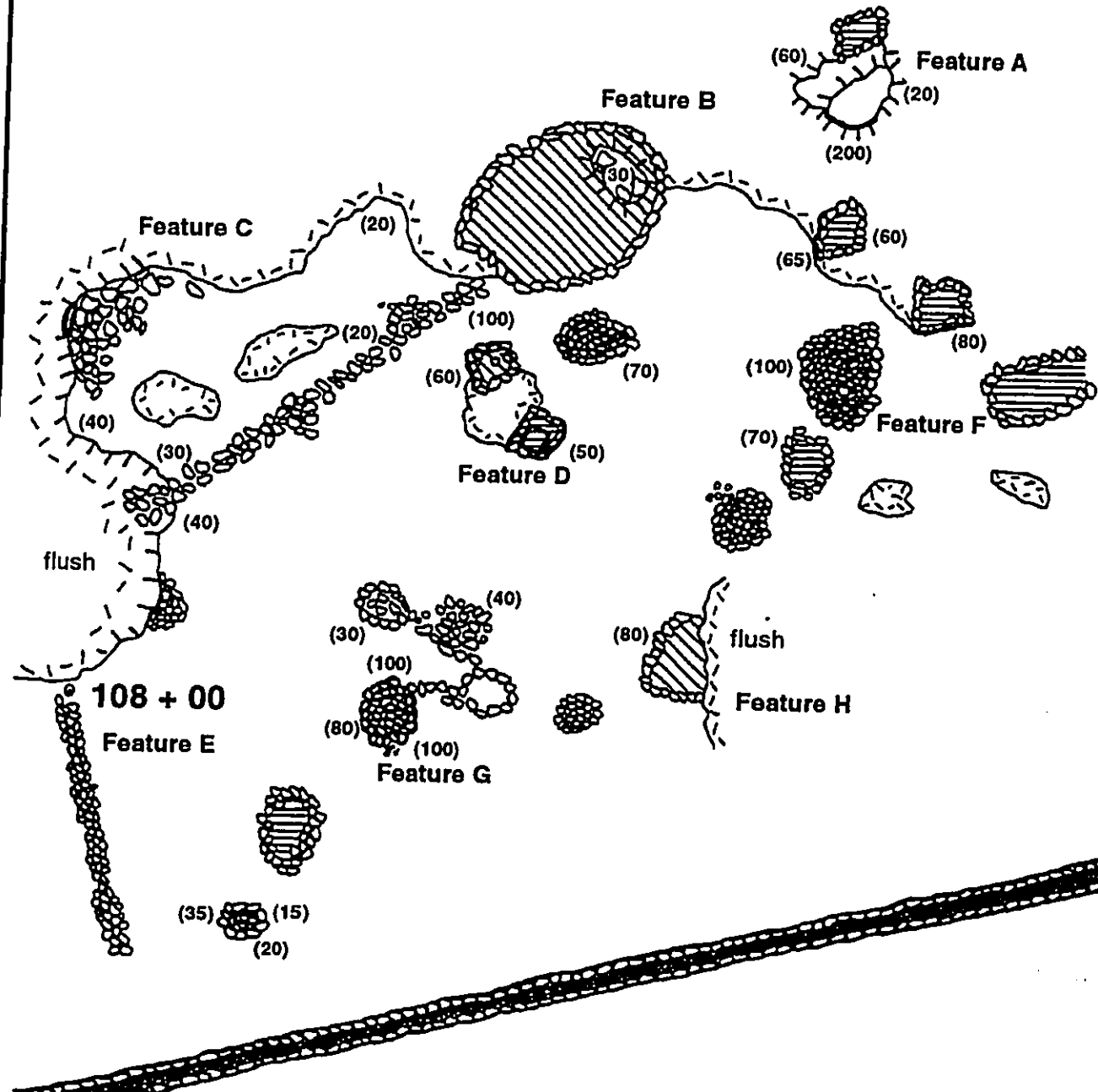
Appendix C.2 contains descriptions of the eight features in more detail.

4.13.3.3 IMPACT ON THE SECTION 4(f) RESOURCE BY THE PROPOSED ACTION

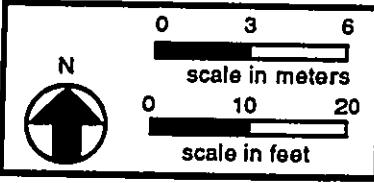
Although the centerline of Alternative 10 would pass through the middle of the site complex, a burial cave (lava tube) is the only component in the complex that is important for preservation-in-place. The cave is located 15 meters (50 feet) north of the 108+00 centerline stake of Alternative 10, within the construction zone. Although the centerline does not pass over the cave, the entire site is located within the construction zone. The alignment would therefore encroach on the site by approximately 1764 m² (18,978 sq. ft.) after considering site boundaries and the necessary grading work in this vicinity. Approximately 4.6 meters (15 feet) of

LEGEND

	outcrop edge		historic boundary wall		
	outcrop ledge		cobble paving		lava tube entrance
	facing		boulder paving	(110)	height in cm.
	collapse		test unit		stake location



Source: Cultural Surveys Hawaii, June 1994.



ARCHAEOLOGICAL SITE
50-10-28-18750
KEALAKEHE PARKWAY EIS

Figure
4-10

overburden material would need to be removed to achieve the desired roadway profile. Such excavation would affect the burial cave. To provide a stable roadway foundation, subsurface voids, and possibly the lava tube itself, would be filled.

Valuable artifacts and burials within the affected section of the cave would be damaged during construction if no mitigation measures are implemented. Alternative 10 would, therefore, severely affect the historical value of this site.

4.13.4 Avoidance Alternatives

Figure 4-11 displays the Sites 18185, 18749 and 18750 avoidance alternatives. These alternatives are fully described in Section 2.2 (see Figures 2-2, 2-3 and 2-4) and, with the exception of the No-Build alternative, were previously considered for thorough evaluation in this project's Draft and Final EIS. However, they were eliminated for various reasons (see Section 2.2).

Table 4-19 summarizes an analysis that determined whether any of these alternatives are feasible and prudent to avoid the three Section 4(f) resources. The results indicate that these alternatives are not feasible and prudent avoidance alternatives because they either would not avoid using one of the Section 4(f) resources; would not address the project's purposes and needs; or would have community impacts of an extraordinary magnitude.

Archaeological reconnaissance surveys were conducted for Alternatives 6A and 8 because they passed the first-cut screening (see Section 2.2.1). Some of Alternative 6A's survey results can be applied to Alternative 6 because they share much of the same alignment. Other than the Preferred Alternative and Alternative 10, these are the only alternatives with available archaeological data. Site 18185 was found along both Alternatives 6A and 8, as well as Alternative 6. Therefore, Alternatives 6, 6A and 8 were disqualified as feasible and prudent avoidance alternatives based on the fact they would not avoid Site 18185.

Ten of the avoidance alternatives would not meet at least one of the project's purposes and needs as described in Section 1.2. The TSM alternative would not address any of the project's purposes and needs, and the other two non-alignment alternatives (Improvements to Palani Road or Hina Lani Street) would not address the economic

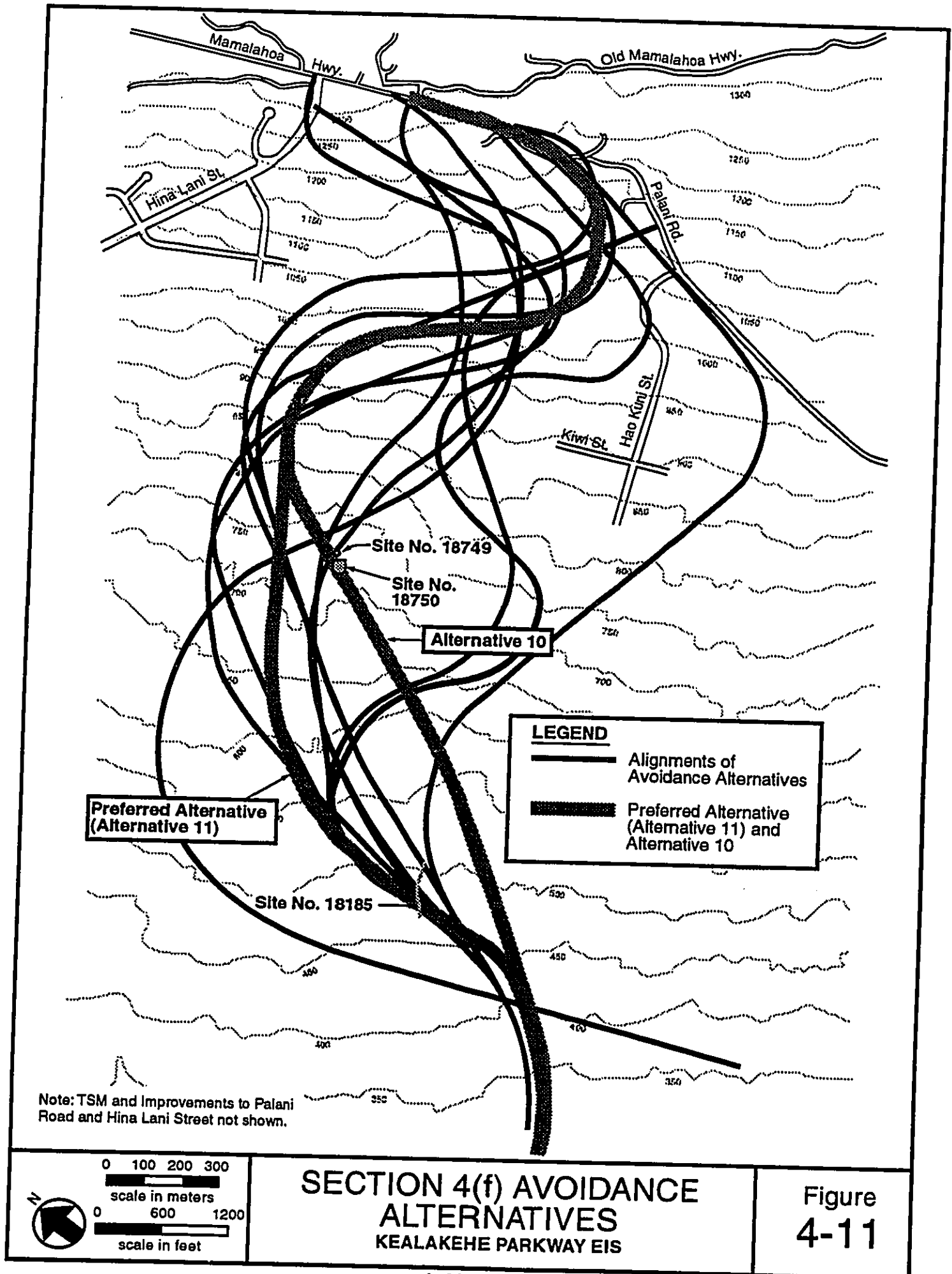


Table 4-19

EVALUATION OF AVOIDANCE ALTERNATIVES

<u>Avoidance Alternative</u> <u>(Note 1)</u>	<u>Reasons For Disqualification</u>
<u>ISM</u>	<u>Would not meet project's purposes and needs.</u>
<u>Improvements to Palani Road</u>	<u>Would not meet the economic development needs of the project because it would not provide access from the Villages of La'i'opua to Mamalahoa Highway. Would displace up to 71 residences including a religious facility.</u>
<u>Improvements to Hina Lani Street</u>	<u>Would not meet the economic development needs of the project because it would not provide access from the Villages of La'i'opua to Mamalahoa Highway.</u>
<u>Alternative 1</u>	<u>Would not meet project's system linkage purpose because it would not form a continuous State route system and because its maximum grade exceeds standards for an arterial highway.</u>
<u>Alternative 2</u>	<u>Would not meet project's system linkage purpose because it would not form a continuous State route system and because its maximum grade exceeds standards for an arterial highway.</u>
<u>Alternative 3</u>	<u>Would displace 24 residences and would split an existing neighborhood and therefore would not be prudent.</u>
<u>Alternative 4</u>	<u>Would not meet project's system linkage purpose because it would not form a continuous State route system.</u>
<u>Alternative 5</u>	<u>Would not meet project's system linkage purpose because it would not form a continuous State route system and because its maximum grade exceeds standards for an arterial highway.</u>
<u>Alternative 6</u>	<u>Would not avoid Site 18185.</u>
<u>Alternative 6A</u>	<u>Would not avoid Site 18185. This alternative was modified to Alternative 10 because of its archaeological impacts.</u>
<u>Alternative 7</u>	<u>Would displace 22 residences and one community facility and therefore would not be prudent.</u>
<u>Alternative 8</u>	<u>Would not avoid Site 18185. This alternative was modified to Alternative 11 (Preferred Alternative) because of its archaeological impacts.</u>
<u>Alternative 9</u>	<u>Would not meet project's system linkage purpose because it would not form a continuous State route system and because its maximum grade exceeds standards for an arterial highway.</u>
<u>Alternative 9A</u>	<u>Would not meet project's system linkage purpose because its maximum grade exceeds standards for an arterial highway.</u>
<u>Alternative 9B</u>	<u>Would not meet project's system linkage purpose because its maximum grade exceeds standards for an arterial highway.</u>

Notes: 1 - The alternatives are described and evaluated in Section 2.2.

Source: Parsons Brinckerhoff, 1997.

development needs of the project because they would not provide access to and from the Villages of La'i'opua and Mamalahoa Highway. Seven of the nine alignment alternatives would not address the project's system linkage purpose (see Section 1.2.1). These alternatives either would not form a continuous through route between Mamalahoa Highway and Queen Kaahumanu Highway (Alternatives 1, 2, 4, 5 and 9) and/or would have maximum grades that would not meet State highway standards (Alternatives 1, 2, 5, 9, 9A and 9B). Non-satisfaction of the project's purposes and needs disqualified the above 10 alternatives as feasible and prudent to avoid the Section 4(f) resources. Therefore, it was not necessary to determine precisely the number of other Section 4(f) resources each alternative would use.

The last two alternatives were disqualified because they would have community impacts of an extraordinary magnitude. Alternative 3 would bisect a neighborhood and displace 24 residences, and Alternative 7 would displace 22 residences and one community facility. It was determined that the splitting of a neighborhood and residential displacements of such a large number in a rural area was not prudent. Therefore, Alternatives 3 and 7 were disqualified because they were not feasible and prudent alternatives to avoid the Section 4(f) resources.

In summary, there is no feasible and prudent alternative to the potential use of the three Section 4(f) resources discussed in this section. The avoidance alternatives described and evaluated in detail in Chapter 2 either would have Section 4(f) impacts themselves; would not meet the project's purposes and needs; or would have community impacts of an extraordinary magnitude. The analysis is summarized in Table 4-19, and further substantiation is provided in Chapter 2.

4.13.5 Mitigation Measures

Since there are no feasible and prudent avoidance alternatives to the use of Site 18185, or Sites 18749 and 19750, mitigation measures will be implemented to minimize harm to the site(s).

If the Preferred Alternative is selected, Site 18185 will be surveyed during the design phase to precisely locate the site and its artifacts in relation to the Parkway. This information will be valuable in determining the precise Section 4(f) "use" of the site, and in adjusting the vertical profile of the Preferred Alternative to minimize harm to the

lava tube. A Burial Treatment Plan and Archaeological Data Recovery Plan will be prepared and implemented prior to construction. Data recovery will include photo documentation of existing conditions, field observations and note taking, and removal of artifacts. Extracted records will be sent to a site deemed appropriate by the SHPO. The Hawaii Island Burial Council is responsible for protecting the remains of native Hawaiians, and must approve in advance the treatment of any burial, including mitigation measures. However, approval from the Hawaii Island Burial Council cannot be granted without the preparation and submission of a Burial Treatment Plan, which must include information to be developed during the design phase, which cannot commence until completion of the NEPA process.

The Burial Treatment Plan will be submitted to the SHPO, which will review the plan and forward it to the Hawaii Island Burial Council for its review. Additional consultations will be made with native Hawaiian groups, including but not limited to the Office of Hawaiian Affairs, Hui Malama I Na Kupuna O Hawaii Nei, and individuals that have familial or lineal affiliation with ancestral Hawaiian remains interred in the burial site. Coordination and consultation with the Hawaii Island Burial Council has already occurred twice (December, 1994 and September, 1996 - see Appendix C). Both consultations included presentations before the Council. Council members have not objected to the project and have expressed a willingness to work towards an acceptable Burial Treatment Plan. Once the Burial Treatment Plan is accepted by the Hawaii Island Burial Council, the FHWA and SDOT will implement the plan.

If Alternative 10 is selected for construction, mitigation measures similar to those described above would be implemented, including a Burial Treatment Plan and Archaeological Data Recovery Plan for Sites 18749 and 18750.

4.13.6 Summary and Conclusion

As described in Section 4.12, coordination with the SHPO, the Hawaii Island Burial Council, and native Hawaiian groups began in 1993 to identify archaeological resources that will be affected by the proposed project and to develop measures to mitigate these impacts. Appendix C.1, Historic and Archaeological Resources Correspondence and Coordination, contains documentation of the coordination efforts.

The Preferred Alternative will "use" one Section 4(f) resource, State Site 50-10-28-18185; and Alternative 10 will "use" two Section 4(f) resources, State Sites 50-10-28-18749 and 50-10-28-18750. The SHPO concurred that all three sites meet the criteria for archaeological Section 4(f) resources. The alternatives discussed in Chapter 2.0 were evaluated again to determine whether any one would be a feasible and prudent alternative to avoid the three Section 4(f) resources. None was found to be a feasible and prudent alternative.

To minimize harm to the Section 4(f) site(s), a Burial Treatment Plan and Archaeological Data Recovery Plan will be prepared, in coordination with the Hawaii Island Burial Council and other Hawaiian organizations, during the design phase of the project for Site 18185 or Sites 18749 and 18750, depending on the alternative that is selected for construction. Once accepted by the Hawaii Island Burial Council, the plans will be implemented.

A draft Section 4(f) statement evaluating the three archaeological sites (one site affected by the Preferred Alternative and two sites affected by Alternative 10) was included in the Draft Environmental Impact Statement for Kealahou Parkway Mamalahoa Highway to Queen Kaahumanu Highway, North Kona, Hawaii (July 1995) and was submitted to the Department of the Interior (DOI), Office of the Secretary. In a letter dated October 26, 1995 (see Chapter 5), the DOI concurred that "there is no prudent and feasible alternative to the proposed project" and with the "proposed measures to minimize harm to historic and archaeological resources."

In conclusion, there is no feasible and prudent alternative to the use of land from State Site 50-10-28-18185, or Sites 50-10-28-18749 and 50-10-28-18750. Regardless of which alternative is selected (Preferred Alternative or Alternative 10), the proposed action will include all possible planning to minimize harm to the archaeological site(s) resulting from such use.

4.14 PARKLANDS

4.14.1 Potential Impacts

The No Build alternative would not improve access to Kaloko-Honokohau National Historic Park and Honokohau Harbor. As the number of visitors increases, accessibility would worsen.

Kealakehe Parkway will improve accessibility to Honokohau Harbor and Kaloko-Honokohau National Historic Park. However, direct access to the Park will be provided by a future access road that is proposed to intersect with Queen Kaahumanu Highway.

4.14.2 Mitigation Measures

Since the project will not generate any adverse impacts, mitigation measures will not be needed.

4.15 VISUAL AND AESTHETIC RESOURCES

4.15.1 Potential Impacts

The No Build alternative would not create visual impacts.

With the proposed Parkway, the west (makai) view will experience the fewest visual disruptions since the landscape drops away towards the ocean. In fact, Kealakehe Parkway will open the ocean vista to those who will use it. At present, travelers cannot see the ocean because of structures and vegetation along Palani Road.

The eastern (mauka) view of the corridor will be visible from Queen Kaahumanu Highway and from the adjacent Villages of La'i'opua. The existing view will be changed to include a paved roadway and associated embankments and berms climbing the slope. The view of Palani Road will also change where vegetation

bordering Palani Road will be cleared in the area of the future Kealakehe Parkway/Palani Road intersection.

The visual impact on Kaloko-Honokohau National Historic Park users will be minimal.

Kealakehe Parkway and the detour road will block existing western (makai) vistas of eleven residences. Six of these residences are located between the Kealakehe Parkway and the detour road. Their views will be blocked by the detour road which may have embankments that reach approximately 8.2 meters (27 feet) above the existing grade. The other five residences are located on the southern side of Kealakehe Parkway near Palani Road, and their views will be blocked by the Parkway. These impacts will be permanent.

Roadway lighting will be provided only at the intersections initially. This limited amount of lighting, provided to increase traffic safety, will not represent a regionally-significant visual intrusion.

In conclusion, Kealakehe Parkway will not generate major visual disruptions except to those immediately adjacent to it. Kealakehe Parkway could decrease the visual impact of power and telephone lines that may ultimately be constructed by others because utilities could be placed underground within the Parkway's right-of-way.

4.15.2 Mitigation Measures

To minimize visual impact, the Kealakehe Parkway median and built embankments will be landscaped within the parameters of the State's functional landscape concept (i.e., landscaping that requires minimal irrigation water and low maintenance). Since Kona is largely covered with a'a and pahoehoe lava, this "xeriscape" approach to landscaping could include placing lava rocks or cobbles within the Parkway's median or on the embankment slopes, consistent with highway safety. If a portion of the median is considered substantial enough for plantings, masses of low-growing native Hawaiian ground cover and other locally suitable ground cover could be planted. Water will be used initially to establish the plantings; thereafter, vegetation will be sustained by the rainfall occurring in the region. Complete details of the landscaping plan will be developed during final design.

4.16 ENERGY

The No Build alternative would not affect electrical energy consumption. However, this alternative would increase vehicle fuel consumption as travelers experience increased traffic delays and congestion.

In contrast, the Kealakehe Parkway will decrease vehicle fuel consumption since levels of transportation service will be better, and less fuel would be wasted in congestion and delays. In addition, Kealakehe Parkway will help save fuel by providing a more direct route for many trips, especially those originating and ending at the Villages of La'i'opua. Although some electricity will be needed for roadway lighting and signalization, Kealakehe Parkway will have a minimal effect on regional electrical energy consumption.

4.17 CUMULATIVE AND SECONDARY IMPACTS

According to 40 CFR 1508.7.

"cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

Present and proposed governmental and private actions are described in Section 3.1.1. These actions include housing developments, infrastructure projects, and new schools, including a University of Hawaii branch. Many of these projects were included in the Keahole to Kailua Development Plan (April 1991) (see Section 3.1.3.2), which was adopted by the Hawaii County Council. Most projects do not require the completion of Kealakehe Parkway. A project that will benefit from the proposed action is the HFDC's Villages of La'i'opua. However, this project will be completed regardless of the completion of the proposed action. Therefore, since the development plans for the area are not predicated on the completion of Kealakehe Parkway, cumulative impacts will be very similar between the No Build and Build scenarios.

The cumulative impacts of all present and proposed actions in the Keahole to Kailua area have the potential to be severe, if unmitigated. For example, housing developments in the Villages of La'i'opua, areas mauka of Keahole Airport, and near the east (mauka) terminus of the proposed action will place substantially increased demands on public infrastructure, such as water supply and sewer treatment systems, schools, and roadway facilities. Development projects could also damage or destroy archaeological resources and endangered and threatened species in the region. The Department of Land and Natural Resources, State Historic Preservation Division describes the region as "covered with archaeological sites" (see Appendix C.1). In addition, two Uhiuhi trees (an endangered species) and populations of Ko'oko'olau (a Candidate 1 species) are found adjacent to the proposed Kealakehe Parkway, and could be destroyed by future land use development on adjacent areas (see Section 4.11 for further details). However, the fully executed Section 106 MOA ensures that impacts of the road on archaeological sites are mitigated (see Section 4.12.3); a translocation plan will be implemented for the two Uhiuhi trees (see Section 4.11.3.1); and a fire plan will be developed to reduce the potential loss of species and habitat from fire (see Section 4.11.3.2). The translocation plan will not apply to the Ko'oko'olau populations. At present, Ko'oko'olau is not a listed or proposed threatened or endangered species. Other potential environmental impacts include degradation of water quality due to erosion from disturbed areas and urbanizing areas; permanent loss of agricultural land; and impacts to makai to mauka viewsheds.

According to 40 CFR 1508.8, secondary impacts are impacts that have the potential to occur "later in time or farther removed in distance but are still reasonably foreseeable." Since Kealakehe Parkway will be constructed in an undeveloped area and could enhance access to nearby parcels, it has the potential to induce developments in vacant and unplanned areas adjacent to the Parkway. Induced developments have the potential to have additional environmental and social impacts than indicated in this Final FIS, such as adversely affecting archaeological sites and endangered and threatened species, and taxing public infrastructure. Therefore, the potential secondary impacts of Kealakehe Parkway are induced development and the concomitant environmental and social impacts.

To mitigate the potential for induced development, the project will not include the construction of intersections to provide access to adjacent parcels. However, the region, including those parcels adjacent to the Parkway, has been designated for

urban expansion in a variety of State and County land use plans (see Sections 3.1.3 and 4.1.2). Lands adjacent to the Parkway could be accessed from other roads besides Kealakehe Parkway. For example, lands north of the alignment could be accessed from Hina Lani Street. Therefore, it may be difficult to prevent induced development if the State and County choose to allow development through changes in State and County zoning. Currently, the undeveloped or unplanned parcels adjacent to the Parkway are zoned Agriculture under the State Land Use Districts (see Figure 3-4) and unplanned and agriculture under the County zoning (see Figure 3-6). Should the State Land Use Districts and County zoning be changed to urban and residential, respectively, the parcels' landowners may seek to develop this area, and would probably request access to the Parkway from SDOT. If this occurs, SDOT will not consider such a request until these proposals successfully complete their environmental reviews. SDOT will consider the secondary and cumulative impacts, including endangered species impacts, when evaluating the requested access.

The U.S. Fish and Wildlife Service was concerned about secondary and cumulative impacts during the Section 7 consultation (see Section 4.11). Discussions were held to define areas where the road could directly enhance access, and it was demonstrated that possible future intersections with Kealakehe Parkway will not necessitate the disturbance of threatened or endangered species.

4.18 POTENTIAL CONSTRUCTION IMPACTS

4.18.1 Air Quality

Air quality impacts during roadway construction generally consist of fugitive dust and mobile source emissions from construction equipment.

Fugitive Dust Emissions

Fugitive dust is airborne particulate matter and is usually relatively large in particle size. Fugitive dust will be generated by construction vehicles operating around the construction sites and material blown from uncovered haul trucks, stockpiles, and exposed areas.

The dispersion of fugitive dust depends on particle size, emission height, and wind speed. Small particles (30 to 100 micron range) can travel several meters before settling to the ground, depending on wind speed. Most fugitive dust, however, is made up of relatively large particles (i.e., particles greater than 100 microns in diameter). Given their relatively large size, these particles tend to settle within 6.0 to 9.0 meters (20 to 30 feet) of their source.

Mobile Source Emissions

Construction vehicles will emit engine exhaust while in operation. In addition, since CO emissions increase with decreasing vehicle speed, traffic disruptions during construction could produce short-term elevated concentrations of CO.

Mitigation

The following particulate control measures related to construction activities will be followed:

Site Preparation

- minimize land disturbance;
- use watering trucks to minimize dust;
- cover trucks when hauling dirt;
- stabilize the surface of dirt piles if not removed immediately;
- use windbreaks effectively;
- limit vehicular paths and stabilize temporary roads; and
- to the maximum degree possible, pave all unpaved construction roads and parking areas to road grade for a length no less than 15 meters (50 feet) where such roads and parking areas exit the construction site, to prevent dirt from washing onto paved roadways.

Construction

- cover trucks when transferring materials;
- use dust suppressants on traveled paths which are not paved;
- minimize unnecessary vehicular and machinery activities; and
- minimize dirt track-out by paving site exit road just before entering the public road.

Post-Construction

- restore to original conditions any disturbed land not used;

- remove unused material;
- remove dirt piles; and
- restore to original conditions all vehicular paths created during construction and prevent future off-road vehicular activities.

To minimize these CO emissions, disruptions to existing traffic flows will be minimized, especially during peak travel periods.

4.18.2 Noise and Vibration

Because construction will involve the use of heavy machinery, there will be temporary noise impacts from construction activities. However, construction will normally occur during daylight hours when occasional loud noises are more tolerable. Because of the relatively short-term exposure to any one receptor, extended disruption of normal activities is not considered likely.

In addition to construction noise, those in proximity to the *detour road* will experience increases in noise from the traffic diverted from Mamalahoa Highway/Palani Road onto the detour road.

With rubber-tired vehicles, ground borne vibration is generally low. Some vibration may be felt with the passing of heavy duty trucks, but this is usually not perceptible except within the immediate right-of-way. It is not anticipated that either of the alternatives will generate unacceptable vibration impacts during project construction.

Blasting may be required for certain portions of the excavation. Any blasting will comply with all applicable standards and requirements.

Mitigation

Two measures which will minimize adverse construction noise impacts are to:

- limit activities to weekdays from 6:30 a.m. to 6:30 p.m.; and
- require construction equipment to have mufflers in good working order.

4.18.3 Water Resources

The primary potential for construction-phase water resource impacts will be due to the erosion and sedimentation associated with the project's earthmoving activities and alteration of existing drainage patterns. Coral reefs and wetlands located several kilometers from the project site will remain unaffected by construction activities (see Figure 3-9).

Mitigation

Storm water runoff and erosion during project construction and landscaping will be mitigated through the use of Best Management Practices (BMPs) established before construction begins. Generally accepted BMPs applicable to this project include:

- use of silt curtains and silt fences;
- minimizing areas of disturbance;
- covering stockpiles;
- planting of vegetation and/or mulching on highly erodible or critically eroding areas;
and
- construction of dikes or diversions to avoid runoff across erodible areas.

The specific erosion control measures to be implemented will be approved by the DOH when they issue the National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge Permit for this project and the County of Hawaii will also require specific measures when they issue the Grading, Grubbing, Stockpiling and Excavation Permit. The erosion control plan will be an integral part of construction process.

4.18.4 Traffic Mitigation

A maintenance of traffic plan will be developed during the design phase to accommodate traffic flows during the project's construction. This traffic plan will address:

- through traffic traveling on Mamalahoa Highway, Palani Road, and Old Mamalahoa Highway during construction of the eastern (mauka) terminus of Kealakehe Parkway; and
- maintenance of access to the residences that will be located between Kealakehe Parkway and the detour road.

One element of the maintenance of traffic plan will be the detour road that will be constructed to convey through traffic while the terminus of Kealakehe Parkway is constructed and a portion of Palani Road realigned (see Figure 2-7). Once Kealakehe Parkway is constructed, residential access will be permanently rerouted to the detour road. The detour road is described in more detail in Section 2.3.

4.18.5 Solid Waste Management and Hazardous Waste

Project construction will require excavation, filling and grading activity. As discussed in Section 3.6.2, the excavated materials are expected to be free of contamination and will be used elsewhere on the project for fill. Since the volumes of cut and fill will be balanced to the maximum degree practical, little excavated material will require disposal.

The construction crew will generate solid waste. The materials or substances listed below may be present on site during construction:

- detergents;
- paints;
- metal;
- tar;
- petroleum-based products; and
- cleaning solvents.

Mitigation

During construction, all waste materials will be collected and stored in a securely lidded metal dumpster. The dumpster will meet all State and County solid waste management regulations. All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied as needed. No construction waste materials will be buried on site. The Contractor will be responsible for implementing the correct procedures for waste disposal. Notices stating these practices will be posted in the office trailer; the Contractor will be responsible for ensuring that procedures are followed.

All sanitary waste generated during the construction phase will be collected from portable units as required.

The following material management practices addressing good housekeeping and hazardous products will be used to reduce the risk of spills or other accidental exposure of materials and substances to the environment. A Spill Prevention Plan will be proposed and followed by the contractor.

Good Housekeeping

- an effort will be made to store only enough product required to complete the job;
- all materials stored on site will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure;
- products will be kept in their original containers with the original manufacturers' labels affixed;
- substances will not be mixed with one another unless recommended by the manufacturer;
- whenever possible, all of a product will be consumed before disposing of the container;
- manufacturer's recommendations for proper use and disposal will be strictly followed; and
- the Contractor will conduct a daily inspection to ensure proper use and disposal of materials on site.

Hazardous Products

- products will be kept in original containers unless they are not resealable;
- original labels and materials safety data will be retained; and
- if surplus product must be disposed of, manufacturer's or local and State-recommended methods for proper disposal will be followed.

Petroleum Products

All on-site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed, clearly labeled containers. Any asphalt substances used on site will be applied according to the manufacturer's recommendations. Vehicle servicing and maintenance activities shall not pollute the environment.

Paints

All containers will be tightly sealed and stored when in use. Excess paint will not be discharged on site but will be properly disposed of according to manufacturer's instructions or State and local regulations.

Spill-Control Practices

In addition to the good housekeeping and material management practices discussed previously, the following practices will be implemented for spill prevention and clean up:

- manufacturer's recommended methods for spill clean up will be clearly posted, and site personnel will be informed of the procedures and the location of the information and clean up supplies;
- materials and equipment necessary for spill clean up will be kept in the material storage area on site;
- all spills will be cleaned up immediately after discovery;
- the spill area will be kept well ventilated, and personnel will wear appropriate protective clothing to prevent injury from coming in contact with hazardous substances;
- regardless of their size, spills of toxic or hazardous materials will be reported to the appropriate State or local government agency;
- the spill prevention plan will be adjusted to include measures to prevent spills from re-occurring and clean-up procedures for spills, should they occur. A description of the spill, its cause, and the clean-up measures will be included; and
- the Contractor will coordinate spill prevention and clean-up efforts. In addition, the Contractor will designate at least three site personnel to receive spill prevention and clean-up training; these individuals will each be responsible for a specific phase of prevention and clean-up. The names of responsible spill personnel will be posted in the material storage area and in the office trailer on site.

4.18.6 Mitigation for Agricultural Activities

During construction:

- stock-proof fencing will be placed around construction sites to safeguard and secure livestock;
- cattle crossings will be provided where appropriate;
- existing water distribution infrastructure will be maintained as much as possible;

- access to existing jeep roads will be maintained; and
- fences and stone walls damaged during construction will be restored and repaired.

Further details of the agricultural mitigation measures will be developed during project design.

4.18.7 Mitigation for Historic and Archaeological Resources

During construction, fenced buffer zones will be placed around archaeological preservation features. If additional historic or archaeological sites are uncovered during construction, work will stop immediately, and the appropriate State and County officials will be notified. Construction will resume upon approval by the appropriate authorities.

4.19 PERMITS AND APPROVALS

The No Build alternative would not require any approvals or permits.

Construction of Kealakehe Parkway is expected to require the approvals and permits found in Table 4-20.

4.20 RELATIONSHIP BETWEEN SHORT-TERM USES AND MAINTENANCE OF LONG-TERM PRODUCTIVITY

Construction of Kealakehe Parkway will involve trade-offs between short-term environmental and economic losses, and long-term transportation and economic gains. However, the long-term productivity of Kealakehe Parkway will offset the short-term losses.

Adverse impacts from the construction of Kealakehe Parkway will disappear soon after construction is complete. Long term traffic conditions will improve. The completed Kealakehe Parkway will:

- reduce traffic congestion on Palani Road;
- reduce travel times;
- improve the regional State Highway System;
- improve the safety conditions of travelers;

Table 4-20

PERMITS AND APPROVALS

Permit/Approval	Issuing Agency	Description
STATE PERMITS:		
Burial Treatment Plan Approval	DLNR, Hawaii County Burial Council	Possible burial sites identified during the plan development phase and EIS phase would be reviewed by the Hawaii County Burial Council for significance. Inadvertent discoveries of sites would require notification of the Hawaii County Planning Department and SHPD at DLNR. Design phase.
National Pollutant Discharge Elimination System Permit (NPDES)	Department of Health	Regulates stormwater discharges. Design phase.
Noise Permit	Department of Health	For construction, a work schedule or bar graph justifying the time table is required. A variance is needed if construction is done after business hours. Design phase.
COUNTY PERMITS:		
Grading, Grubbing, Stockpiling, and Excavation Permit	Department of Public Works	Standards to safeguard property, control erosion and sedimentation and to promote public welfare by regulating and controlling excavation fills, grading, grubbing, and stockpiling operations. Design phase.
Permit for Excavation of Public Highways	Department of Public Works	To control excavation and restoration works. Design phase.

Source: Parsons Brinckerhoff, April 1996.

- accommodate and support urban development in the area, including the Villages of La'i'opua; and
- assist in implementing the K to K Plan (April 1991) and the La'i'opua Master Plan (September 1990).

Considering the long-term productive uses listed above, and the fact that adverse impacts from Kealakehe Parkway will be minimized, the project appears beneficial to the community and to the present and future land uses in the vicinity.

4.21 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Implementing Kealakehe Parkway will require a commitment of natural, physical, human, and fiscal resources, as follows:

- agricultural lands affected by construction of the project is considered an irreversible commitment. There will be a permanent loss of 26 hectares (64 acres) of open space.
- existing views from 11 residences will be permanently blocked.
- archaeological resources will be damaged, destroyed, or lost in constructing the project.
- considerable amounts of fossil fuels; labor required for construction, planning, engineering design, landscaping, purchasing, and services; and construction materials will be committed.
- construction will also require a substantial one-time expenditure of government funds that will not be retrievable.

The commitment of these resources is appropriate since businesses, employees, and residents in the County and region will benefit from the completed Kealakehe Parkway as follows:

- savings in time and convenience through improved quality of the transportation system; and
- improved accessibility and safety.

These benefits are anticipated to outweigh the commitment of resources.

**CHAPTER 5.0
RESPONSES TO COMMENTS
RECEIVED ON THE DRAFT EIS**

CHAPTER 5.0 COMMENTS AND COORDINATION

This chapter summarizes the project's scoping process; public information meetings; and the oral comments received at the formal public hearing and the written comments that were received on the draft Environmental Impact Statement (EIS) for Kealahou Parkway. Responses to each oral and written comment on the draft EIS are also included in this chapter, and in addition, other chapters of the EIS were revised as appropriate in response to the comments.

5.1 PUBLIC NOTICE AND ENVIRONMENTAL SCOPING PROCESS

The project's Environmental Assessment (EA) was filed with the Office of Environmental Quality Control on July 31, 1992 and the Environmental Impact Statement Preparation Notice (EISPN) was announced in the State OEQC Bulletin on August 23, 1992 (see Appendix G.1). A public information meeting was held during the EISPN comment period at King Kamehameha Hotel on August 27, 1992. Approximately 29 participants attended. Subsequently, federal funding for the project was sought and the Federal Highway Administration became involved in the project. A Notice of Intent (NOI) to prepare an EIS was published in the Federal Register on March 12, 1993 (see Appendix G.1). Coordination involving federal, State and County agencies, legislators, interested parties, and many others was conducted throughout the preparation of the draft EIS.

5.1.1 Consulted Parties and Small Group Meetings

The following governmental agencies and officials were consulted on this project.

Federal Agencies

U.S. Department of Agriculture, Natural Resources Conservation Service
U.S. Department of Interior, Fish and Wildlife Service
U.S. Department of Interior, National Park Service
U.S. Environmental Protection Agency

State Agencies / Officials

Department of Agriculture

Department of Health

Department of Land and Natural Resources, Division of Forestry and Wildlife

Department of Land and Natural Resources, State Historic Preservation Division

Housing Finance and Development Corporation (now the Housing and Community
Development Corporation of Hawaii)

Office of Environmental Quality Control

Office of the Governor

Office of Hawaiian Affairs

Office of State Planning (now the Office of Planning in the Department of Business,
Economic Development and Tourism)

State Representatives

State Senators

Hawaii County Agencies

Mayor

Council Members

Department of Public Works

Planning Department

Fire Department

Police Department

In addition, informational meetings were conducted with the following parties:

November 15, 1993

Parsons Brinckerhoff (PB) Office

Mayor Steve Yamashiro

State Department of Transportation (SDOT) (Honolulu)

PB

November 16, 1993

Lanikai / Palani Ranch Office

Lanikai Corporation

SDOT (Honolulu)

PB

December 16, 1993

Kailua-Kona Police Station
Virginia Isbell (Legislator)
George Robinson (Office of Governor)
SDOT (Hawaii District)
SDOT (Honolulu)
PB

December 16, 1993

Orchard Marine Office
R. Kelly Greenwell (Robert Greenwell Properties)
SDOT (Honolulu)
PB

December 22, 1993

County of Hawaii Council Chambers
Council Members
SDOT (Honolulu)
PB

December 22, 1993

SDOT (Hawaii District Office)
Hawaii County, Planning Department
Hawaii County, Fire Department
Hawaii County, Police Department
SDOT (Hawaii District)
SDOT (Honolulu)
PB

February 16, 1994

Hulihee Palace
Kona Hawaiian Civic Club
Daughters of Hawaii
Cultural Surveys Hawaii
SDOT (Honolulu)
PB

February 16, 1994

County of Hawaii Mayor's Conference Room
Kona Traffic Safety Council
Kona-Kohala Chamber of Commerce
Kona Community Safety Lane
West Hawaii Committee
Palani Ranch Company
Hawaii Leeward Planning Conference
Private citizens
SDOT (Honolulu)
PB

February 17, 1994

Keauhou Shopping Center
Hawaii County Burial Council
State Historic Preservation Division
Office of Hawaiian Affairs
Cultural Surveys Hawaii
SDOT (Honolulu)
PB

5.1.2 EISPN and NOI Comments

Letters responding to the project's EISPN and NOI were received from federal, State and County agencies, businesses and concerned citizens. Many of the letters from local businesses and citizens expressed support of or opposition to a particular alignment alternative, while governmental agencies addressed technical content of the EIS. Some of the letters were received after a presentation of Alternatives 1 to 8 at the August 1992 public information meeting in Kona. Alternatives 6A, 9, 9A, 9B, 10 and 11 were developed later. All EISPN and NOI comments and comments received following the public information meeting were incorporated in the project's draft EIS.

The agencies, businesses and individuals that provided written comments before announcement and distribution of the project's draft EIS are listed below:

Federal Agency

U.S. Environmental Protection Agency

State Agencies

Department of Accounting and General Services, Division of Public Works

Department of Agriculture

Department of Health

Department of Land and Natural Resources

Department of Transportation, Hawaii District

Representative Virginia Isbell

County Agencies

County Council

Planning Department

Keola Childs, County Council

Police Department

Mayor Steve Yamashiro

Businesses and Individuals

Carl Simons, trucking business

Honokohau Enterprises Ltd.

Insurance Hawaii

John Dinmore, Architect

Orchard Marine Corporation

Lanihau Corporation

Palani Ranch Company, Inc.

Sue Aronson, Realtor, Kailua-Kona

Katherine Augustine

Tracy Boynton

Pete Greenwell

R. Kelly Greenwell

Bruce Owensby

5.2 DRAFT EIS NOTICE

The project's draft EIS was filed with the Office of Environmental Quality Control (OEQC) on June 12, 1995, and was announced in the State OEQC Bulletin on July 23, 1995 (see Appendix G.1). The draft EIS was also filed with the Environmental Protection Agency (EPA). The Notice of Availability of the draft EIS was published in the Federal Register on August 4, 1995 (see Appendix G.1). These State and federal notices of availability initiated the public comment period on the draft EIS. The 45-day comment period formally concluded on September 22, 1995, but public comments were accepted as late as October 25, 1995. No comments were disallowed because they were late.

Regulations of the Council on Environmental Quality state that "any other Federal agency with jurisdiction by law shall be a cooperating agency." For this project, the only federal agency with jurisdiction by law besides FHWA is the U.S. Fish and Wildlife Service. Formal Section 7 consultations were conducted with the Fish and Wildlife Service, as described in Chapter 4 and documented in Appendix B. The possibility of

the Fish and Wildlife Service being a cooperating agency was discussed, but the FWS deemed formal Section 7 consultations to be sufficient.

5.3 OPPORTUNITY TO COMMENT

5.3.1 Public Hearing

In compliance with federal environmental law, 23 U.S.C. 128, and State law, Chapter 343, Hawaii Revised Statutes (HRS), a formal public hearing was conducted. Notification of the public hearing appeared twice in Oahu-based newspapers with statewide distribution and once in a Hawaii County newspaper. In addition, more than 100 agencies, businesses, organizations, and individuals received mailed notice of the public hearing. The hearing was held on August 31, 1995, at 7:00 p.m. in the Kealakehe Intermediate School Cafetorium (74-5062 Onipaa Street, Kailua-Kona). A record of attendees was maintained and a handout providing project information was available to all attendees (see Appendix G.2). The hearing began with a presentation on the project and was followed by an opportunity to provide formal testimony. Approximately 30 people attended, and five of those testified, all in support of the project. A certified court reporter transcribed the complete hearing. A copy of the transcript may be found in Appendix G.2. Comments provided in the formal testimony are summarized in Section 5.3 with the responses.

5.3.2 Written Comments

Comment letters were received from federal, State and County agencies, businesses, organizations and concerned citizens. More than 40 percent of the letters contained substantive comments that are addressed individually in Section 5.4. A larger number of letters expressed either general support for the project or "no comment." All comment letters received are reproduced in Section 5.4, with a list of those who submitted written comments in Section 5.5.

5.4 COMMENTS MADE AT THE PUBLIC HEARING AND RESPONSES

Appendix G.2 contains a transcript of the formal public hearing. This section contains paraphrasing of all of the oral comments that were made at the hearing. Oral comments that were also submitted in writing are not presented in this section, but in Section 5.4.

Commenter - Kelly Greenwell, Orchard Marine

1. Concerned about the tightness of the most mauka curve of the proposed Parkway. For safety reasons, would like to see the radius of the curve increased.
2. Agrees that a four-lane parkway is appropriate.
3. Would like to see a medial strip for aesthetic and safety reasons.
4. Supports the project because it is crucial to the future of Kona.
5. Does not believe that the Loulu Palm is truly an endangered species since his nursery contains approximately 250 individuals of this species in pots.
6. Concerned that sites and objects that have been designated as Hawaiian artifacts and archaeological resources may not actually be such.

Response

1. The radii of all of Kealakehe Parkway's curves are well above the minimum required by federal guidelines. Increasing the radius of the most mauka curve would result in either a higher embankment as the roadway chases the existing grade downhill (and therefore greater cost), or steeper roadway grades.
2. Kealakehe Parkway is proposed to be a four-lane highway, as described in Section 1.1.1. It may be constructed in phases, however.
3. A 28-foot wide median is being provided for safety and to provide sufficient space for left-turn pockets. Plantings within the median, using a xeriscape approach, may be accomplished where sufficient space exists.
4. Comment noted.

5. The U.S. Fish and Wildlife Service has listed the Loulu Palm (*Pritchardia affinis*) as an endangered species. Therefore, in accordance with the requirements of the Endangered Species Act, it is a species that must be protected, and federal actions, such as roadway construction, must be in full accordance with this law.
6. The designation of Hawaiian artifacts and archaeological resources contained in An Archaeological Inventory Survey and Limited Subsurface Testing of the Proposed Kealakehe Parkway Extension, Alternatives 10 and 11 and the Addendum Report to Kealakehe Parkway (June 1994) has been accepted by the State Historic Preservation Officer (SHPO). However, only the most significant archaeological sites will be preserved in place. Depending on their significance, other resources will receive "no further work" or "data recovery" as described in Section 4.12.

Commenter - George Bennett, Kona Heavens Association, President

1. Supports the construction of Kealakehe Parkway and thinks it should have been built sooner to accommodate growth in Kona.
2. Concerned about the cost of the project. Suggested providing incentives to builders as a way to expedite construction and lower costs.
3. Believes roadway will better disperse traffic and noise throughout the area.
4. Described experience of having an arterial roadway close to his home; yet justified construction of the road.
5. Mentioned that the Keahole to Kailua Development Plan includes greenbelts, jogging paths, and bike trails. Inquired why those things were omitted from the proposed Kealakehe Parkway.

Response

1. Comment noted.
2. Use of incentives is an appropriate measure to accelerate construction and contain costs. The use of incentives will be decided during preparation of construction bid documents.

3. Sections 4.3.1 and 4.5.2 support the commenter's statement that the completed Kealakehe Parkway will better distribute traffic and noise.
4. Comment noted. Social impacts to residents living immediately adjacent to the proposed roadway are expected to be minimal, except for the residential area to be enclosed by the Parkway and the detour road. Section 4.2 details social impacts.
5. Kealakehe Parkway will initially be constructed as a rural arterial and will not include jogging paths or bike trails. Bicyclists may use the shoulder. As population increases and development occurs, urbanization improvements such as those mentioned may be considered.

Commenter - Janet Butler

1. Strongly supports building Parkway.
2. Described problems with Hina Lani Street, including truck traffic, congestion, safety, blind spots, vehicle speeds, and road deterioration.

Response

1. Comment noted.
2. The completion of Kealakehe Parkway will divert traffic volumes from Hina Lani Street to Kealakehe Parkway, particularly trucks. The traffic volumes and vehicle types experiencing adverse conditions on Hina Lani Street should therefore be reduced.

5.5 WRITTEN COMMENTS RECEIVED DURING THE DRAFT EIS COMMENT PERIOD AND RESPONSES

The thirty-five written statements received on the draft EIS during the public comment period, July 23, 1995 through October 25, 1995, 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. The letters are arranged in chronological order. 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 chapters of the EIS. Others asked for clarification of information presented or items beyond the scope of the EIS.

Letters responding to the Draft EIS comments were sent in May 1998 (see Appendix G.3). Those who provided comments are also being provided copies of this Final EIS.

BENJAMIN J. CAYETANO
GOVERNOR



ESTHER UEDA
EXECUTIVE OFFICER

STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
LAND USE COMMISSION
Room 104, Old Federal Building
335 Merchant Street
Honolulu, Hawaii 96813
Telephone: 587-3822

July 26, 1995

SUBJECT: Director's Referral No. 94-085-M
Draft Environmental Impact Statement (DEIS) for the
Kealakehe Parkway: Mamalahoa Highway to Queen Kaahumanu
Highway, North Kona, Hawaii

We have reviewed the DEIS for the subject project and have the following comments:

- 1) Based on the representation of the project area in Figure S-1, it appears that it is located within the State Land Use Urban, Agricultural, and Conservation Districts.
- 2) The representation of the State land use districts in Figure 3-4, which appears to be taken from the Office of State Planning's District Boundary Review Report, Hawaii, dated 1992, is outdated. We have attached for your information copies of the Commission's State land use district boundaries maps H-2 (Keahole Point) and H-7 (Kailua) which depict the current district boundaries for the subject area.
- 3) On page 3-10, the following statement is made: "It would be the responsibility of private landowners to petition the Office of State Planning (OSP) for actual land use reclassification at the appropriate time." Please be advised that the correct agency to which private landowners would petition for a change in the district boundaries would be the Land Use Commission or the County of Hawaii (depending on the acreage and reclassification requested), not the Office of State Planning.

We have no further comments to offer at this time.

EU:BS:th

att.

**Response to State of Hawaii Department of Business, Economic
Development and Tourism, Land Use Commission**

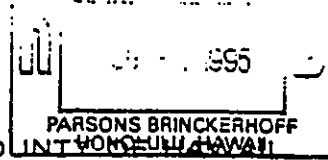
1. Section 3.1.3 of the final EIS describes the project area as located within Urban, Agricultural, and Conservation Districts.
2. Figure 3.4, showing the State land use districts in North Kona, has been revised to show the current land use designations.
3. The final EIS now states that "It will be the responsibility of private landowners to petition either the Land Use Commission or the County of Hawaii (depending on the acreage and reclassification requested) for actual land use reclassification at the appropriate time."



July 28, 1995

DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAII, HONOLULU

25 AUPUNI STREET • HILO, HAWAII 96720
TELEPHONE (808) 969-1421 • FAX (808) 969-6996



The Honorable Benjamin J. Cayetano, Governor
State of Hawaii
c/o Office of Environmental Quality Control
220 South King Street, 4th Floor
Honolulu, HI 96813

DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS)/SECTION (4f) STATEMENT
KEALAKEHE PARKWAY, MAMALAOA HIGHWAY TO QUEEN KAAHUMANU HIGHWAY
NORTH KONA, HAWAII
APPLICANT - DEPARTMENT OF TRANSPORTATION, HIGHWAYS DIVISION
TAX MAP KEY 7-4-2:8; 7-4-6:12; AND 7-4-8:47, 5, 60, 13, AND 17

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

Should you need any assistance from our Department, please contact the Water Resources and Planning Section at 969-1421.

Milton D. Pavao, P.E.
Manager

GGA

copy - Department of Transportation, Highways Division
Parsons Brinckerhoff Quade & Douglas Inc.

... Water brings progress...

Stephen K. Yamashiro
Mayor

AUG - 4 1995



Wayne G. Carvalho
Police Chief

James S. Correa
Deputy Police Chief

County of Hawaii
POLICE DEPARTMENT
349 Kapiolani Street Hilo, Hawaii 96720-3998
(808) 961-2244 Fax (808) 961-2389

August 1, 1995

Mr. Gary Gill, Director
State of Hawaii
Office of Environmental Quality Control
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

Dear Mr. Gill:

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT
PROJECT TITLE: KEALAKEHE PARKWAY
TAX MAP KEY: 7-4-2-8; 7-4-6-12
7-4-8:47, 5, 60, 13, 17

The above Draft Environmental Impact Statement has been reviewed and we foresee no adverse effect should the project be approved to proceed.

Sincerely,

Wayne G. Carvalho
WAYNE G. CARVALHO
POLICE CHIEF

JV:if

cc: Department of Transportation, Highways Division
Parsons Brinckerhoff Quade & Douglas, Inc.
Kona Police



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
FORT SHAFTER, HAWAII 96858-5440



REPLY TO
ATTENTION OF

August 2, 1995

Planning Division

Mr. Abraham Wong
Division Administrator
U.S. Department of Transportation
Federal Highway Administration
Hawaii Division
300 Ala Moana Boulevard, Room 3202
Honolulu, Hawaii 96850

Dear Mr. Wong:

Thank you for the opportunity to review and comment on the Draft Environmental Impact Statement for the Kealakehe Parkway - Mamalahoa Highway to Queen Kaahumanu Highway - North Kona, Hawaii (HEC-HI). We do not have any additional comments to offer beyond those provided in our previous letter dated June 27, 1995.

Sincerely,

Ray H. Jyo, P.E.
Director of Engineering

Comment on Department of the Army Letter

The referenced letter of June 27, 1995 stated that the proposed project area does not include any surface water bodies or special aquatic sites, including wetlands. The Department of the Army therefore concluded that the project will not impact waters of the United States and therefore, a Department of Army permit is not required.

BENJAMIN J. CAYETANO
GOVERNOR



SUSAN M. CHANDLER, M.S.W., Ph.D.
DIRECTOR

KATHLEEN G. STANLEY
DEPUTY DIRECTOR

AUG 17 1995

STATE OF HAWAII
DEPARTMENT OF HUMAN SERVICES
1390 Miller Street
Honolulu, Hawaii 96813

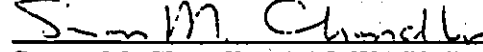
August 3, 1995

Governor, State of Hawaii
c/o Office of Environmental Quality Control
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

Subject: Draft EIS/Section 4(f) Statement
Kealakehe Parkway, Mamalahoa Highway to
Queen Kaahumanu Highway, North Kona, Hawaii

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

Sincerely,


Susan M. Chandler, M.S.W., Ph.D.
Director

cc: DOT, Planning Branch
Parson Brinckerhoff Quade & Douglas Inc.

AN EQUAL OPPORTUNITY AGENCY



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPUNIAMI BOULEVARD, SUITE 300
HONOLULU, HAWAII 96813-5245
PHONE (808) 586-3777
FAX (808) 586-3795

August 4, 1995

Mr. Abraham Wong, Division Administrator
U.S. Department of Transportation
Federal Highway Administration
P.O. Box 50206
Honolulu, Hawai'i 96850

Re: Draft EIS/Section 4(f) Statement Kealakehe Parkway, Mamalahoa
Highway to Queen Ka'ahumanu Highway, North Kona, Hawai'i.

Dear Mr. Wong:

Thank you for the opportunity to review the above referenced Draft Environmental Impact Statement (DEIS). The Office of Hawaiian Affairs (OHA) has the following comments and concerns.

OHA has filed a suit in State Court opposing the Housing Finance and Development Corporation's (HFDC) development of the Villages of La, 'i 'Opua and the anticipated sale of ceded lands. Since the Kealakehe Parkway is an extension of the roadway included in the HFDC project, and because of OHA's involvement in the matter, we would like to be included as a consulting party on the known impacts detailed in the DEIS.

The DEIS at pages 4-67 and 5-3 includes OHA as a party already intended to be consulted. By this letter, we are requesting that the consultation process begin as soon as possible.

In order to facilitate the proposed consultation, please contact Linda Delaney, Land and Natural Resources Officer at 594-1888.

Sincerely,

A handwritten signature in black ink, appearing to read "Dante K. Carpenter".
Dante K. Carpenter
Administrator

cc: Clayton Hee, Chairperson
Board of Trustees



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3202
Honolulu, HI 96850
November 2, 1995

IN REPLY REFER TO
HEC-HI

Ms. Linda Colburn
Acting Administrator
Office of Hawaiian Affairs
711 Kapiolani Blvd., Suite 500
Honolulu, Hawaii 96813

Dear Ms. Colburn

Subject: Draft Environmental Impact Statement/
Section 4(f) Statement (1995)
Kealahou Parkway
Mamalahou Highway to Queen Ka'ahumanu Highway
North Kona, Hawaii

Thank you for your letter of August 4, 1995 on the subject Environmental Impact Statement. The Hawaii Department of Transportation (HDOT) has consulted with OHA's representative on the Island of Hawaii on this project but FHWA welcomes the opportunity to continue coordination with OHA. As discussed with Linda Delaney, Land and Natural Resources Officer of OHA, the HDOT and FHWA are available to discuss the project with OHA.

Please contact Mr. Pat V. Phung, Transportation Engineer, at (808) 541-2700 to arrange a meeting.

Sincerely yours,

RAYMOND J. MCCORMICK

Abraham Wong
Division Administrator



University of Hawaii at Manoa

Water Resources Research Center
Holmes Hall 283 • 2540 Dole Street
Honolulu, Hawaii 96822

4 August 1995

ATTENTION
STATE DEPARTMENT
OF TRANSPORTATION
Aug 9 4 49 PM '95
HIGHWAYS DIVISION
PLANNING BRANCH


Mr. Ronald Tsuzuki
Department of Transportation, Highways Division
Planning Branch
600 Kapiolani Boulevard, Suite 304
Honolulu, Hawaii 96817

Dear Mr. Tsuzuki:

SUBJECT: Draft EIS for Kealakehe Parkway from Mamalahoa Hwy to
Queen Kaahumanu Hwy

We have reviewed the subject DEIS and have no comments to offer. Thank
you very much for the opportunity to review this material.

Sincerely,


Roger S. Fujioka, Ph.D.
Director, WRRC

RSF:jm

AN EQUAL OPPORTUNITY EMPLOYER



United States Department of the Interior

U.S. GEOLOGICAL SURVEY

WATER RESOURCES DIVISION
677 Ala Moana Boulevard, Suite 415
Honolulu, Hawaii 96813

August 4, 1995

Mr. Abraham Wong
Division Administrator
U.S. Department of Transportation
Federal Highway Administration
Hawaii Division
300 Ala Moana Blvd., Suite 3202
Honolulu, Hawaii 96850

Dear Mr. Wong:

Subject: Draft EIS/Section 4(f) Statement
Kealakehe Parkway, Mamalahoa Highway to
Queen Kaahumanu Highway, North Kona, Hawaii.

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

Thank you for allowing us to review the report.

Sincerely,


William Meyer
District Chief

RECEIVED
STATE DEPARTMENT
OF TRANSPORTATION
AUG 7 1 28 PM '95
HIGHWAY DIVISION
PLANNING BRANCH

August 14, 1995

Mr. Abraham Wong, Division Administrator
Federal Highway Administration
PO Box 50206, 300 Ala Moana Blvd.
Honolulu, Hi. 96850

Dear Mr. Wong:

We reside in Kona Heavens. The relatively new extension of Hina Lani Road has been a great boon to all of us in this area. As you must know, before this addition to Hina Lani, Palani Road was a very dangerous route to travel. The many trucks grinding up the grade or going down in low gear really slowed down the traffic and many serious accidents occurred. All that congestion did improve greatly. However, now Hina Lani presents us with another problem. The very top of the road is very steep. It was not engineered to accommodate heavily loaded trucks. **Therefore we are in favor of building the new proposed Kealakehe Parkway.** It appears to furnish the truckers a more acceptable grade to access the upper Mamalahoa highway. Of course it would also furnish access to the new Kealakehe High School and the new planned subdivisions.

In the future, as our community grows, it seems to us that one or more additional similar roads farther north would be of great service to us all.

As much as we loved our sleepy little village of Kailua-Kona, we are growing and we must accept change. To do this we must approach our new problems with dispatch and clear thinking. The longer we delay the worse our problems become.

Sincerely,

Victor Crosetti

Pat Crosetti

Victor and Pat Crosetti
73-4854 Anini St.,
Kailua-Kona, Hi 96740



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

August 14, 1995

Mr. Abraham Wong
Division Administrator
U.S. Dept of Transportation
P.O. Box 50206
Honolulu, HI 96850

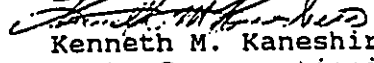
SUBJECT: Draft EIS/Section 4 (f) Statement Kealahou Parkway
Mamalahou Highway to Queen Kaahumanu Hwy, North Kona, Hawaii

Dear Mr. Wong:

We have completed review of this draft EIS. At this time we have no major concerns with this plan. Because of potential negative impacts to ground water supplies and nearshore marine ecosystems, an erosion control plan should be an integral part of each project phase.

Thank you for the opportunity to provide comment. Should you have any questions please do not hesitate to call Mr. Chris Smith at (808) 541-2605 or Ms. Sandra Higa at (808) 322-2484.

Sincerely yours,


Kenneth M. Kaneshiro
State Conservationist

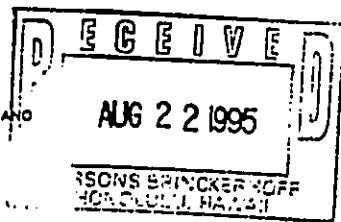
The Natural Resources Conservation Service
formerly the Soil Conservation Service,
is an agency of the
United States Department of Agriculture

AN EQUAL OPPORTUNITY EMPLOYER

**Response to U.S. Department of Agriculture, Natural Resources
Conservation Service**

An erosion control plan which will minimize potential adverse impacts to ground water supplies and nearshore marine ecosystems will be prepared during the design phase of the project. The erosion control plan will require the use of Best Management Practices (BMPs). The specific erosion control measures described in the BMPs will need to be approved by the State Department of Health, as indicated in Section 4.18.3.

BENJAMIN J. GAYETANO
GOVERNOR



ROY S. OSHIRO
ACTING EXECUTIVE DIRECTOR

STATE OF HAWAII
DEPARTMENT OF BUDGET AND FINANCE
HOUSING FINANCE AND DEVELOPMENT CORPORATION
677 QUEEN STREET, SUITE 300
HONOLULU, HAWAII 96813
FAX (808) 587-0600

IN REPLY REFER TO
95:DEV/4819

August 15, 1995

Mr. Keith Nakano
Parsons Brinckerhoff Quade & Douglas, Inc.
Pacific Tower, Suite 3000
1001 Bishop Street
Honolulu, Hawaii 96813

Dear Mr. Nakano:

Subject: Kealakehe Parkway Draft Environmental Impact
Statement - Threatened and Endangered Plant Species
Mitigation

The Housing Finance and Development Corporation (HFDC) is reviewing the subject document for completion of the Kealakehe Parkway. As developers of the Villages of La'i'opua master planned community, HFDC is vitally interested in expediting this project.

Inasmuch as the proposed Parkway corridor will be developed on land now consisting of native dry land forest, it shares many characteristics as HFDC's Villages of La'i'opua development. Not surprisingly, several threatened and endangered plant species have been identified as impacted by the Parkway project.

As you may be aware, HFDC has prepared a draft mitigation plan for the numerous plant species within the Villages which are threatened or endangered or candidates for such designation. In addition to preserving species in place, we are also proposing to construct two substantial preserve areas within which identified plants, once propagated, can be replanted to reestablish a native dry land forest environment.

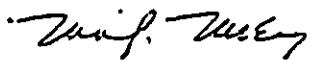
We believe that development and maintenance of these preserves will provide a significant mitigation action. However, as you may also be aware, the clearing, propagation, improvement, and management of preserves is very costly. We would be interested in conferring with you to see if cooperative action between the Department of Transportation (DOT) and HFDC to accelerate and expand the preserve program could assist DOT in meeting mitigation responsibility for the Parkway project.



Mr. Keith Nakano
Page 2
August 15, 1995

We stand ready to confer with you as necessary and hope that our ongoing program can serve as a base for further action to preserve the dry land forest environment.

Sincerely,


MICHAEL MCELROY
Project Manager

c: Paul Weissich

Response to State of Hawaii, Department of Budget and Finance, HFDC

The FHWA and SDOT appreciate HFDC's offer of the use of their endangered species plant preserves. The HFDC preserves are among several that are available for this project. Details of which preserves would be used for Kealahou Parkway will be resolved during the design phase of the project.

To: Mr. Abraham Wong, Division Administrator
Federal Highway Administration
POB 50206, 300 Ala Moana Boulevard
Honolulu, HI 96850

From: Derek and Margie Park
73-4789 Halolani St.
Kailua-Kona, HI 96740

Dear Mr. Wong,

It has been brought to our attention that the Kealakehe Parkway Project for the Kona area is in jeopardy. We are residents of the Kona Heavens subdivision. Our home is on the corner of Halolani and Hinalani. Hinalani is a thoroughfare between the main highway and Palani Rd.

There are many reasons why we believe that it would be in Kona's best interest to complete the Kealakehe Parkway project. Here are just a few: many large trucks are constantly breaking down due to the steep grade along Hinalani and this is obviously not only an eye sore but also a dangerous road hazard, Kona is expected to have population growth and its road systems need further expansion to support the growth, and as a needed access the new Kealakehe High School and planned subdivisions are to name just a few!

Please make the right decision and support Kealakehe Parkway. Don't make a problem road (Hinalani) a disaster!!

Thank you for your support.

Sincerely,


Derek and Margie Park

KONA HEAVENS ASSOCIATION
P.O. Box 734
Kailua-Kona, HI 96745

August 22, 1995

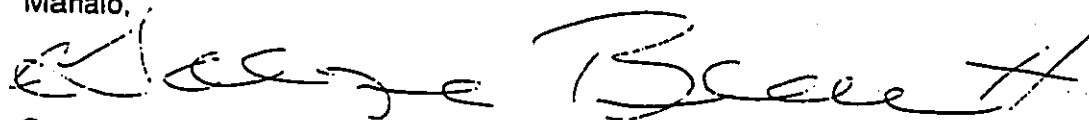
Mr. Abraham Wong, Division Administrator
Federal Highway Administration
P.O. Box 50206, 300 Ala Moana Blvd.
Honolulu, HI 96850

Dear Sir:

As the president of the Kona Heavens Association, I am writing on behalf of the Board of Directors in support of the completion of the Kealakehe Parkway. A major concern that confronts all homeowners of this subdivision is the very steep grade of the recently completed Hina Lani Street mauka-makai connector. We in Kona Heavens are having to cope with spills from cement trucks and other vehicles, boats and trailers breaking loose, a blind intersection at Palani Road, and a tremendous increase in vehicle noise because there are no tonnage limits as in Kona Palisades.

However, our support is not limited to issues pertaining only to Kona Heavens. The Board of Directors are behind any plans that will relieve traffic on existing roads, offer a safer truck route with half the grade of Hina Lani, and provide for future population growth. We are expressing our support in the only ways open to us at the moment. These include a letter to the West Hawaii Today Editorial Page, speaking at the August 31st hearing, and writing to the officials involved.

Mahalo,



George Bennett, President
Kona Heavens Association



Kona Transportation
Company Incorporated
Established—1939

5033A Queen Kaahumanu Highway
Kailua-Kona, HI 96740
Telephone (808) 329-4111
Facsimile (808) 329-5546

General Hauling
Container Service
Moving and Storage

August 23, 1995

Mr. Abraham Wong, Division Administrator
Federal Highway Administration
PO Box 50206, 300 Alamoana Blvd.
Honolulu, HI 96850

Dear Mr. Wong:

Being one of the major users of the roadways in Kona, we support the completion of Kealakehe Parkway to Mamalahoa Hwy. Currently, we use Hinalani and Palani roads to access Mamalahoa. Hinalani is very steep for truck traffic. Palani is not quite so steep, however, it is both narrow and has very little shoulder. We lost a truck and it's entire cargo before the runaway ramp was built. Now the runaway ramp has been removed, and 2 stoplights erected in it's place. We have met with the County of Hawaii to build another ramp, however, even with all of their efforts, the ramp may not become a reality. Kealakehe parkway would be an excellent solution in that the grade can be controlled and shoulders built to accomodate truck traffic.

The lower exit of Kealakehe Parkway onto Queen Kaahumanu is also located very conveniently for access to and from the Honokohau boat harbor. Most recreational trucks towing boats are not able to keep up with the minimum speed of the roadways. The wide shoulders planned on Kealakehe Parkway will allow these and other slower traffic to use the roadway and not impede the normal flow of traffic.

Thank you for allowing our input.

Sincerely,

Albert Shiotsuka
VP Operations



August 23, 1995

WEST HAWAII CONCRETE
Mr. Abraham Wong, Division Administrator
Federal Highway Administration
PO Box 50206, 300 Ala Moana Boulevard
Honolulu, Hawaii 96850

We are writing in support of the proposed construction of Kealahou Parkway to Mamalahou Highway Project.

We are the largest supplier of concrete and aggregates to the West Hawaii area. We have locations in Kona, Waimea and Mauna Kea. We regularly use all available routes from the Mamalahou Highway to Queen Kaahumanu Highway and Palani Road.

Prior to the completion of this project trucks will continue to use either Hina Lani, Palani or Palisades. All of these roads have obvious drawbacks that have been the subject of complaint for years. As noted in the EIS there have been numerous accidents along Palani road. Neither Palani, Hina Lani or Palisades were built to accommodate truck traffic and Palisades is currently posted with a tonnage limit. Residents in Kona Heavens had asked the County for a tonnage limit along Hina Lani as well. Palisades and Hina Lani have extremely steep grades that exceed all reasonable guidelines. Palani is a narrow rural roadway with existing homes very near the roadway and narrow to non existing shoulders.

Truck traffic is a major problem for residents and truckers alike on the existing roads which have never been designed for such traffic. Very often someone becomes stuck behind a slow moving truck going up Palani and gets very frustrated. In frustration this person may try to pass the slow moving truck where there is no passing lane. Truckers don't want to be in the way but with no other route available there is no choice.

When a fully loaded truck is going up hill, pulling over to a full stop to let traffic go by is not a good practice, usually is very unsafe and more of a delay for other traffic. This is true because the only places to pull over going up streets like Palani have blind spots when getting back on the road later and when the truck does get going again it would travel the rest of the way in a lower, slower gear since it would not have the ability to gain enough road speed on the steep hill to get back into the gear that it was in before it pulled over.

As described in the EIS Kealahou Parkway is being designed as a four lane highway to accommodate the expected traffic including truck traffic. If it is built in phases we urge that truck passing lanes in the up and down directions be in the first phase of construction to make it a safe highway

It apparently will cost a lot to build. But it won't get any cheaper in the future and without it we will continue to use unsafe roads.

At West Hawaii Concrete we want to be a good neighbor. We believe this highway can help us by providing a safe road to use.

Sincerely

Carl L. Simons
President

P.O. Box 1390
Keilua-Kona
Hawaii
96745-1390

CONSTRUCTION MATERIALS AND SERVICES
Ready Mix Concrete Aggregates
Pumping Block

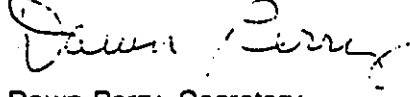
Sales Office
(808) 329-3507
Administrative Office
(808) 329-3561
(808) 329-2267 Fax

Dear Sir:

As the secretary of the Kona Heavens Association, I am writing on behalf of the Board of Directors in support of the completion of the Kealakehe Parkway. A major concern that confronts all homeowners of this subdivision is the very steep grade of the recently completed Hina Lani Street mauka-makai connector. We in Kona Heavens are having to cope with spills from cement trucks and other vehicles, boats and trailers breaking loose, a blind intersection at Palani Road, and a tremendous increase in vehicle noise because there are no tonnage limits as in Kona Palisades.

However, our support is not limited to issues pertaining only to Kona Heavens. The Board of Directors are behind any plans that will relieve traffic on existing roads, offer a safer truck route with half the grade of Hina Lani, and provide for future population growth. We are expressing our support in the only ways open to us at the moment. These include a letter to the West Hawaii Today Editorial Page, speaking at the August 31st hearing, and writing to the officials involved. We invite others to join us in the struggle to improve driving conditions for all.

Mahalo,



Dawn Perry, Secretary
Kona Heavens Association



Kona Transportation
Company, Incorporated
Established - 1939

50399 Queen Kaahumanu Highway
Kailua-Kona HI 96740
Telephone (808) 329-4111
Facsimile (808) 329-5546

General Hauling
Container Service
Moving and Storage

August 24, 1995

Mr. Abraham Wong
Federal Highway Adm.
PO Box 50206, 300 Alamoana Blvd.
Honolulu, HI 96850

Dear Mr. Wong:

We are drivers of tractor trailers carrying loads up to 80 tons. Our route requires 2 tractor trailer combinations to utilize Palani Road daily. All of us have been with Kona Trans of over 15 years, and some of us have been driving Palani road almost daily for over 30 years. We should be familiar and experienced with this road as any other driver, however, bringing a loaded trailer down this road continues to be a challenge. Among truck drivers, this road is the most feared-respected hill on the island except for MaunaKea Summit Road. Driving carefully (slowly) does not make us the most popular users of the road in the eyes of other motorists. This concerns us, of course, but there is not much that we can do about it. We fully endorse the construction of the Kealakehe Parkway. We hope that this road will be designed with wide shoulders and without steep grades.

Respectfully,

The Senior Driving Team
Alan Henriques *AH*
James Zane *JZ*
Alex Ako
Rodney Acol *RA*

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



LAWRENCE MIKE
DIRECTOR OF HEALTH

RECEIVED
SEP 1 1995

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

In reply, please refer to:

August 25, 1995

92-303(2)/epo

To: The Honorable Benjamin Cayetano
Governor, State of Hawaii
c/o Director, Office of Environmental Quality Control
220 South King Street
Honolulu, Hawaii 96813

From: Lawrence Miike *Lawrence Miike*
Director of Health

Subject: Draft Environmental Impact Statement
Kealakehe Parkway
Mamalahoa Highway to Queen Kaahumanu Highway
North Kona, Hawaii
TMK: 7-4-2: 8

Thank you for allowing us to review and comment on the subject document. We do not have any comments to offer at this time.

c: DOT
Parsons Brinckerhoff Quade & Douglas Inc. ✓

Jenjamin J. Cayetano
GOVERNOR

HERMAN M. AIZAWA, PH.D.
SUPERINTENDENT



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

OFFICE OF THE SUPERINTENDENT

August 29, 1995

Mr. Abraham Wong, Division Administrator
U.S. Department of Transportation
Federal Highway Administration
Box 50206
Honolulu, Hawaii 96850

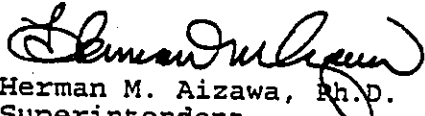
Dear Mr. Wong:

SUBJECT: Draft Environmental Impact Statement (EIS)
Kealakehe Parkway, Mamalahoa Highway to
Queen Kaahumanu Highway, North Kona, Hawaii

We have reviewed the subject draft EIS and have determined that the proposed construction of Kealakehe Parkway will have minimal impact on the schools in the area.

Thank you for the opportunity to comment.

Sincerely,


Herman M. Aizawa, Ph.D.
Superintendent

HMA:jml

cc: A. Suga
P. Bergin, Hawaii

AN AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY EMPLOYER



**KONA-KOHALA
CHAMBER
OF COMMERCE**

AUGUST 31, 1995

TO: THE U. S. DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION

FROM: THE KONA-KOHALA CHAMBER OF COMMERCE

RE: THE PROPOSED EXTENSION OF KEALAKEHE PARKWAY TO MAMALAHOA
HIGHWAY

The Kona-Kohala Chamber of Commerce fully supports the proposed extension of the Kealakehe Parkway to Mamalahoa Highway. An east-west link between the two roadways has been included in Big Island highway plans for over ten years.

We fully agree that this extension would satisfy:

- System linkage needs
- Existing transportation demand and capacity needs
- Safety needs
- Economic development needs

Along with these considerations, we would ask that the DOT Highways and the Federal Highways Administration look carefully at the kinds of truck traffic and the economic dependency of the business and consumer community upon this traffic, for the Kona area. We need a SAFE, CONVENIENT truck route from Mamalahoa Highway to Queen Kaahumanu. This would mean this has to be a four-lane highway and graded for truck transportation.

Thank you for this opportunity to testify.

BENJAMIN J. CAYETANO
GOVERNOR



ROY S. OSHIRO
ACTING EXECUTIVE DIRECTOR

STATE OF HAWAII
DEPARTMENT OF BUDGET AND FINANCE
HOUSING FINANCE AND DEVELOPMENT CORPORATION
877 QUEEN STREET, SUITE 300
HONOLULU, HAWAII 96813
FAX (808) 587-0600

IN REPLY REFER TO:
95:PPE/5110

September 1, 1995

RECEIVED
STATE DEPARTMENT
OF TRANSPORTATION
SEP 6 11 39 AM '95
HIGHWAYS DIVISION
PLANNING BRANCH

TO: Governor, State of Hawaii
c/o Office of Environmental Quality Control

FROM: Roy S. Oshiro *Roy S. Oshiro*
Acting Executive Director

SUBJECT: Draft Environmental Impact Statement for Kealakehe
Parkway

We have reviewed the draft Environmental Impact Statement on the Kealakehe Parkway from Mamalahoa Highway to Queen Kaahumanu Highway and have the following comments:

- 1) Page 1-1 indicates that the Kealakehe Parkway within the Villages of La'i'opua is still under construction. As of August 1995, the entire portion of the Kealakehe Parkway within the Villages of La'i'opua has been completed. Thus, "under construction" should be changed to "completed" throughout the report.
- 2) The name of the Kealakehe Planned Community is "The Villages of La'i'opua," not La'i'opua.
- 3) On botanical mitigation (section 3.11), the Housing Finance and Development Corporation's (HFDC) draft mitigation plan calls for the creation of an uhiuhi preserve area as well as a second preserve area for aupaka and other threatened and endangered species. We would be willing to discuss with the Department of Transportation (DOT) their providing support for the propagation and preserve management functions of our Mitigation Plan as one means of meeting DOT's requirements.
- 4) The alignment of the completed portion of Kealakehe Parkway (within the Villages of La'i'opua) was agreed upon jointly by DOT and HFDC. HFDC did not decide on the alignment solely (section 5.4.9 comment 9.4).



Governor, State of Hawaii
Page 2
September 1, 1995

- 5) U.S. Fish and Wildlife Service (USFWS) has requested a review of impacts on plant species located on the parcel outside of the highway corridor on the basis of the highway's cumulative effect. We believe that application of cumulative effect is improper, in that (a) highway construction does not facilitate urbanization of the rest of the parcel, and (b) mitigation for species elsewhere on the site would be the responsibility of the landowner of the rest of the parcel, not DOT. The effect on the rest of the parcel should be assessed when (and if) development approvals are sought, and presumably would be subject to the Chapter 343 environmental review process.

In sum, it appears that USFWS may be "overreaching" its regulatory authority under Section 7, to require Federal agency consultation on matters which are unrelated to the Federal action.

Thank you for the opportunity to comment.

c: Ronald Tsuzuki, DOT
Keith Nakano, Parsons Brinckerhoff

Response to State of Hawaii, Department of Budget and Finance, HFDC

1. The portion of Kealakehe Parkway within the Villages of La'i'opua is now described as "constructed" or "completed" instead of "under construction."
2. The name of the Kealakehe Planned Community has been changed from La'i'opua to the Villages of La'i'opua throughout the final EIS.
3. FHWA and SDOT appreciate HFDC's offer of the use of their endangered species plant preserves. The HFDC preserves are among several that are available for this project. Details of which preserves would be used for Kealakehe Parkway will be resolved during the design phase of the project.
4. Comment noted.
5. FHWA and SDOT note HFDC's opinion regarding the treatment of cumulative impacts and the Fish and Wildlife Service's use of its authority. FHWA and SDOT have concluded formal Section 7 consultations with the Fish and Wildlife Service in accordance with the Endangered Species Act, as indicated in Section 4.11.1.

/3800L13

BENJAMIN J. CAYETANO
GOVERNOR
STATE OF HAWAII

RECEIVED
STATE DEPARTMENT
OF TRANSPORTATION

SEP 11 2 32 PM '95



STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
HIGHWAYS DIVISION
PLANNING BRANCH
P.O. BOX 1879
HONOLULU, HAWAII 96805

KALI WATSON
CHAIRMAN
HAWAIIAN HOMES COMMISSION

JOE M. K. M. YAMAGUCHI
DEPUTY TO THE CHAIRMAN

September 6, 1995

Mr. Abraham Wong, Division Administrator
U. S. Department of Transportation
Federal Highway Administration
Box 50206
Honolulu, Hawaii 96850

Dear Mr. Wong:

Subject: Draft EIS/Section 4(f) Statement
Kealakehe Parkway, Mamalahoa Highway to
Queen Kaahumanu Highway, North Kona, Hawaii

Thank you for the opportunity to review the subject report for completion of the Kealakehe Parkway connecting Mamalahoa Highway to Queen Kaahumanu Highway.

The Department of Hawaiian Home Lands is acquiring lands in the vicinity for housing and other uses. We strongly support development of this highway project because, by providing an alternative route for people traveling between upper and lower elevations, it will also reduce congestion and improve safety and convenience along Palani Road.

To avoid endangered species and significant archeological sites, a composite alternative alignment with a slight "S" curve descending between Alternatives 10 and 11 should be investigated (See adapted Figure 4-5 & Figure 4-6, attached)

If you have any questions regarding our comments, please call Joseph Chu of our Planning Office at 586-3838.

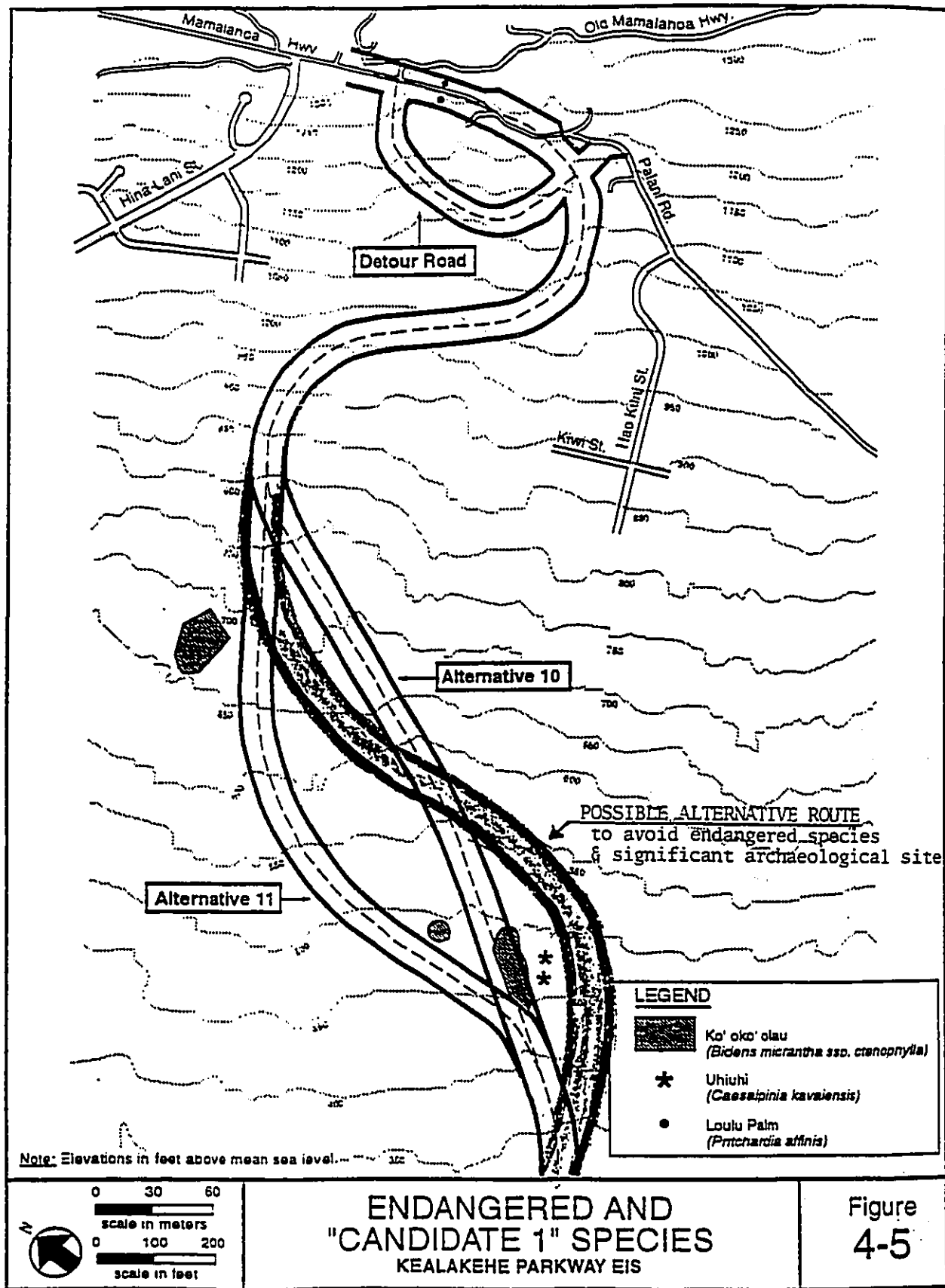
Warmest aloha,

A handwritten signature in cursive script that reads "Kali Watson".

Kali Watson, Chairman
Hawaiian Homes Commission

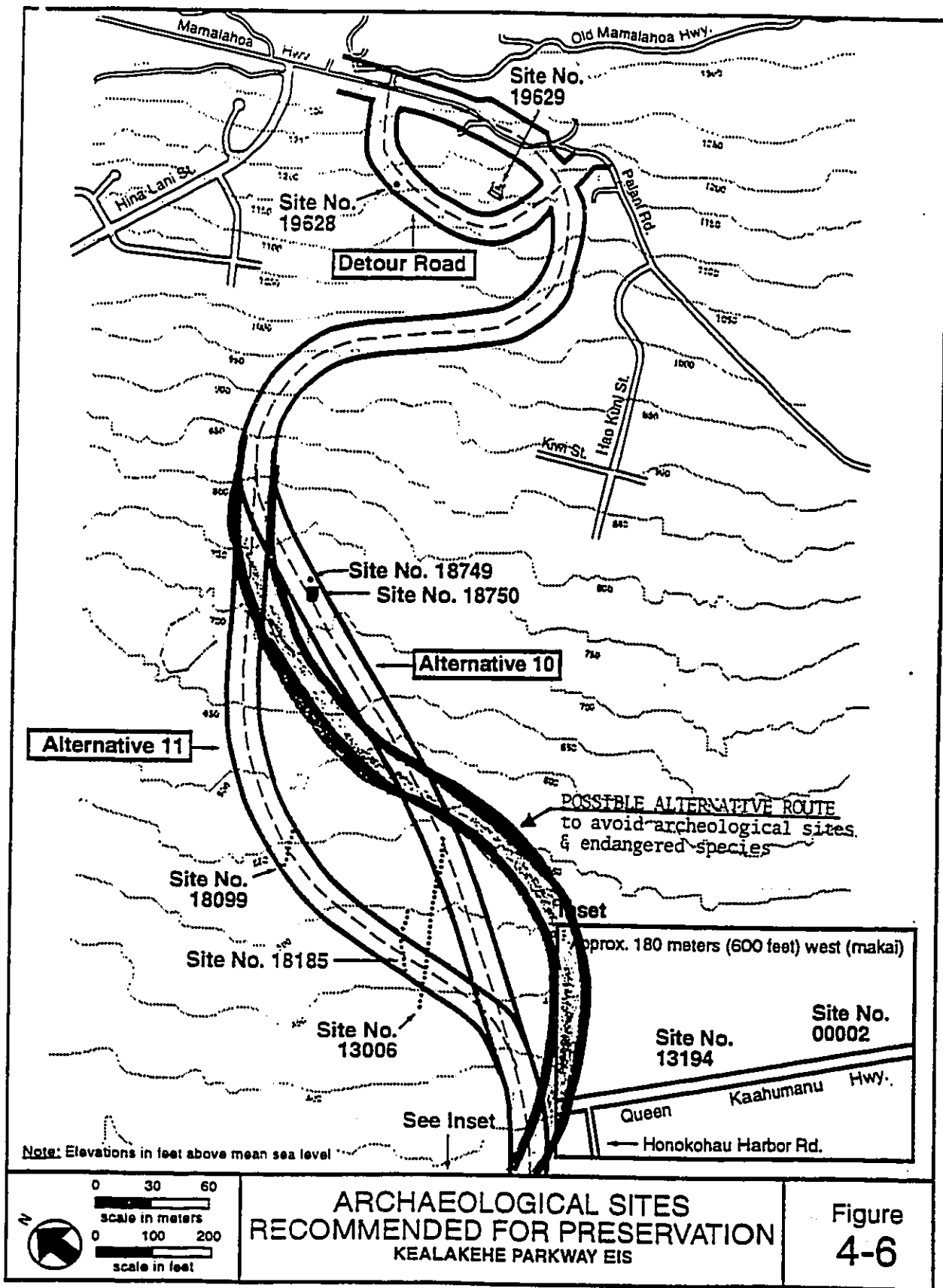
Enclosures

c: OEQC
State DOT (Highways)
Parsons Brinkerhoff Quade & Douglas Inc.



ENDANGERED AND
"CANDIDATE 1" SPECIES
KEALAKEHE PARKWAY EIS

Figure
4-5



Response to State of Hawaii, Department of Hawaiian Home Lands

FHWA and SDOT appreciate the Department of Hawaiian Home Lands' attempt to develop an alignment that avoids critical sites. However, Figure 4-6 does not depict all of the archeological features that are present in the vicinity. This figure only shows features within the Alternative 10 and Preferred Alternative alignments. In fact, archeological sites occur at high density throughout much of the corridor, and the "hybrid" alignment suggested by the Department of Hawaiian Home Lands would affect a heiau complex. A great deal of effort has been expended to develop an alignment that simultaneously minimizes impacts both to archaeological and botanical resources.



KEAUHOU KONA
RESORT COMPANY

September 8, 1995

**Mr. Abraham Wong, Division Administrator
Federal Highway Administration
P O Box 50206, 300 Ala Moana Boulevard
Honolulu, HI 96850**

Dear Mr. Wong:

Please accept this letter in support of the Environmental Impact Statement for the proposed construction of the Kealakehe Parkway to Mamalahoa Highway. Keauhou Kona Resort Company is a construction company required to use either Palani Road, Hina Lani or Kaiminani as they are the only mauka/makai "truck routes" available for our use. As you know these roadways have obvious, dangerous drawbacks to our community. These include extremely steep grades, tonnage limits, narrow to non-existing shoulders and in certain areas homes are very near to the roadways.

As a conscientious contractor we realize the need for safe roads for our community as well as roads that accommodate our truck traffic. At this same time we are cognizant of the general public's frustration when stuck behind slow moving trucks going up Palani, Hina Lani or Kaiminani.

Kealakehe Parkway is being designed as a four lane highway which will accommodate West Hawaii truck traffic. We strongly support the EIS in support of this project for a road designed to address the needs of our community. We understand that this road may be build in phases in which case we urge the governing authorities to include, at a minimum, truck passing lanes in the first phase of construction.

Thank you for your consideration.

Respectfully,

Frederick Guy Lam
Managing Partner of KKRC

*Keauhou-Kona Resort Company Is An Equal Opportunity Employer
A Partnership of Keauhou Land Corporation and Kamehameha Investment Corporation / Lic.# ABC 12262
P.O. Box 5635 • Kailua-Kona, Hawaii 96745-5635 • Telephone (808) 322-2703 • Fax (808) 322-3497*

TRACY BOYNTON

74-4920-A Palani Road
Kailua-Kona, HI 96740

RECEIVED
STATE DEPARTMENT
OF TRANSPORTATION
Phone: (808) 329-4178
FAX: (808) 326-1510
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HIGHWAYS DIVISION
PLANNING BRANCH

DIRECTOR'S OFFICE
DEPT. OF
TRANSPORTATION
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SEP 11 2 33 PM '95

September 8, 1995

Governor, State of Hawaii
c/o Office of Environmental Quality Control
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

Dear Governor Cayetano,

I am writing in response to the Draft Environmental Impact Statement for Phase II of Kealakehe Parkway in Kailua Kona, Hawaii. I have been following this project for over three years now. My position remains the same. I believe that this particular 2-3 mile stretch of roadway is unnecessary, extremely expensive, not well designed, and improperly planned to be of benefit to the majority of people who reside in North Kona and South Kohala. (pg. 3-17)

1 | Plans for this roadway were initiated by HFDC so that the state could provide further access to their proposed development called the Villages of La'i Opuu. It is my understanding that this 900 acre parcel has been deemed to be a parcel which has Hawaiian Home Land rights attached to it which may prevent the state from progressing further with the Villages project. If no development is going to occur, there is absolutely no need for Phase II of Kealakehe Parkway. If the housing project does move forward, it can be well serviced by the existing, but unopened, Phase I of this parkway.

2 | I would briefly like to address each of the four needs that are listed as primary reasons for doing this road. As to the system linkage needs, there is no reason at this time that we, the people of Kailua Kona, need a linkage road at that particular place. If the state desires to get federal funding to provide us with a better transportation network, then it is important to plan roads which

accommodate the people most suitably. What this system linkage section fails to say is that there are several mauka-makai connector roads currently in existence between Mamalahoa Highway and the Queen Kaahumanu highway. Just because they are not under state jurisdiction does not mean that they do not exist. In fact, to put a third mauka-makai road where Phase II of Kealakehe Parkway is currently designed is going to pose more of a hazard than it will be of help. It would place three to four intersections within a few hundred yard distance of each other. That spells congestion where none currently exists.

3 Section S.3.2. is definitely incorrect for the major portion of Palani Road. From the top of Palani Road down to the Queen K. Highway we do not experience ANY long traffic delays unless there is an accident or construction on the road. So there is NO LOS E or LOS F on Palani Road, the Mamalahoa Highway or the Queen Kaahumanu highway until you reach the stretch of Palani Road between the Queen K. and Kuakini Highway.

4 Section S.3.3. states that there were 165 reported accidents on Palani Road between 1986 and 1990. I believe that this statistic is misleading in the fact that it does not present where these accidents on Palani Road occurred. It is my best guess that if someone were to look at where most of these accidents had occurred, it would be in the stretch of Palani Road between the Queen K. and Kuakini highways. This stretch of Palani Road will not be alleviated of any of its accidents or congestion by the construction of Kealakehe Parkway Phase II.

5 Section S.3.4. on economic development needs is again untrue in its portrayal of the facts. The Villages at La'i Opuia are not under construction. A West Hawaii Branch of the University of Hawaii is planned for several years in the future and several miles north of Kealakehe Parkway, so it will not help to provide transportation to that area. The other potential developments listed are ones that will be done by private land owners. I do not believe that forty two to forty eight million dollars of our tax money should be spent on a small section of road which will directly benefit only a few private property owners. Kealakehe Parkway Phase II will not directly provide better access to the U.S. National Park

6 at Honokohau. Access to the park is off the Queen K. highway. The park itself is not even marked with a road sign on the Queen K., so how are people to find it? Park hours are limited. The road from the Queen K. to the park is a rutted rock road which almost requires the use of a 4-wheel drive vehicle. So to suggest that Kealakehe Parkway Phase II is needed to enhance access to the park is just not plausible.

7 In examining the existing Phase I of Kealakehe Parkway and the plans for Phase II, which hope to be financed by federal funds, the two sections are entirely mismatched. Although I haven't personally measured the width of Phase I, I would venture to say that it is just over one half the width of the proposed Phase II. The current median strip on Phase I is about 4 feet wide with painted yellow lines as dividers. Phase II shows a 28 foot center median. The median that is designed in Phase II of Kealakehe Parkway is wider than many other roads that people in our county drive on every day. This does not make sense to me.

8 There are many other facts which I think make the project an undesirable undertaking. I will list a few. As stated in the EIS there are both endangered and threatened species of wildlife which would be affected by the placement of this road. I don't think that the Hawaiian peoples of this area would take kindly to the removal of their sacred archaeological sites. There are also one to two burial sites that would be disturbed. Section 3.5.3. also makes note that the existing noise levels slightly exceed the NAC exterior standards at the Palani Road/ Old Mamalahoa Highway. To put another road in the same area with more traffic will only worsen the already excessive noise pollution.

11 My suggestions as to how to improve the quality of our transportation needs would be the following. First of all, better regional planning whereby small commercial centers are available within walking distances of home would be the most essential step. Secondly, there are numerous unsafe road conditions that currently exist on both state and county roads. Our tax money should go to improving and making these roads safe before further money is spent on new roads. It would take relatively little money to fix the unsafe road condition that

currently exists where Mamalahoa Highway first becomes Palani Road. There is less than half of a mile that could use some straightening out. Thirdly, in order to better facilitate the goals that are stated in this EIS, it would be far better for the mid level arterial road to be built. This would allow more people better access to the existing and planned schools in North Kona. It would provide a road to the planned university. It would alleviate traffic off both the Mamalahoa Highway and Palani Roads. It would provide residents with another way to head north to their jobs at the various hotels, resorts, shopping centers, and golf courses. Those areas currently employ a large number of people.

12

Last, but not least, is the fact that both our federal and state budgets are so out of balance that I do not think it prudent to spend tax dollars that we don't need to. I would probably be in jail if I spent money in the manner in which our government does. It is very disheartening to be a hard working citizen who gives up to 49.6% of their income for state and federal taxation. This is to say nothing of all the other ways in which we are taxed, such as at the gas pump. We have enough roads to get around easily all over our island. If you're going to spend our hard earned tax dollars, please do it on more important things such as making our current roads safe, providing lighted intersections where they are needed, providing safe, divided pathways for pedestrians or bicyclists, paved shoulders, guard rails, etc. We could also use more schools with better education, a larger and more modern hospital, and other essential services that are lacking here. So, please do not spend this huge amount of money on something as unessential as Kealahou Parkway Phase II.

Thank you for your time and consideration.

Respectfully Yours,



Tracy Boynton

cc: Mayor Stephen Yamashiro
Mr. Kazu Hayashida
Mrs. Malama Solomon
Mrs. Virginia Isbell

Mr. Abraham Wong
Mr. Ron Tsuzuki
Mr. Andrew Levin
Mr. David Tarnas

Response to Tracy Boynton

1. The purpose of and need for the project is described in Section 1.2. This section describes the four purposes of the project. Even if the Villages of La'i'opua should not be constructed by the year 2015, which is the planning horizon for this project, there are several other reasons why Kealakehe Parkway should be built (see Section 1.2 and other comment letters contained in this Section).

2. The existing east-west (mauka-makai) connections are inadequate for existing and future traffic volumes (see for example Section 1.2 which describes existing levels of congestion, the numerous comment letters describing problems on Hina Lani Street, and Section 3.3.1.3 which describes the number of accidents that have occurred on Palani Road). With respect to the density of intersections, the Hawaii Statewide Uniform Design Manual for Streets and Highways states that, under ideal situations, intersections should be spaced no closer than 364 meters (1,200 feet). The Hina Lani Street and Old Mamalahoa Highway intersections at Mamalahoa Highway will remain where they are currently located. The Palani Road connection to Kealakehe Parkway is the only new intersection to be created by this project and will be located approximately 550 meters (1,800) feet from the Old Mamalahoa Highway intersection. The Palani Road intersection will be well beyond the State's minimum distance criterion. The Kealakehe Parkway intersections will be designed to meet Federal and State design guidelines for safe operation.

3. The traffic analysis was based on field measurements of traffic conditions taken in May 1992. We have no reason to believe that that date was in any way atypical in terms of traffic conditions.

4. Section 3.3.1.3 states that, "Between 1986 and 1990, there were: ...165 reported accidents on Palani Road between Old Mamalahoa Highway and Queen Kaahumanu Highway."; the area which will be bypassed by Kealakehe Parkway. Since Kealakehe Parkway will divert through traffic from Palani Road, the completion of Kealakehe Parkway is highly likely to alleviate both accidents and congestion on Palani Road.

5. Kealakehe Parkway is being planned to address both existing and future needs. In addition, Kealakehe Parkway will provide regional benefits. Therefore, although

the projects mentioned by the commenter may not be built immediately and may not be immediately adjacent to the corridor, they are all expected to occur by 2015, the planning horizon for this project. For example, the Villages of La'i'opua is expected to provide over 4,000 dwelling units and accommodate approximately 14,200 people within the next twenty years. In addition, the West Hawaii branch of the University of Hawaii will also be constructed by horizon year 2015, or 20 years from now when the roadway is expected to be an integral part of the network system, benefiting the entire region.

Section 4.1 further discusses future development of the area.

6. Although Kealakehe Parkway will not provide direct access to Kaloko-Honokohau National Historic Park, the Parkway will increase visitor accessibility to the Park. Although Kaloko-Honokohau National Historic Park is presently largely unimproved, a master plan has been developed, which includes future access to the Park, and is the subject of the General Management Plan/Environmental Impact Statement for Kaloko-Honokohau National Historical Park (July 1994).
7. In constructing Kealakehe Parkway, the Housing Finance and Development Corporation (HFDC) elected to build the roadway in two phases. The first phase, which is now complete, provides only a single lane in each direction and a truck climbing lane. The second downhill lane, sidewalks, curb and gutter, and median are part of a planned second phase of Kealakehe Parkway within the HFDC project. Kealakehe Parkway Extension (the part covered by this EIS) will also ultimately be four lanes plus a median, although, as with the HFDC portion, it may also be built in phases. As stated in Section 2.3.2.4, the median width is established by safety and traffic considerations.
8. The U.S. Fish and Wildlife Service (FWS) has rendered a non-jeopardy biological opinion based on the information presented during formal consultations with FHWA. Accepted mitigation measures are described in Section 4.11.3.
9. The SDOT will work with the SHPO, the Hawaii Island Burial Council, native Hawaiian groups, the Office of Hawaiian Affairs and the Advisory Council on Historic Preservation (ACHP) to implement the Memorandum of Agreement (MOA).

(see Appendix C) which describes the stipulations and conditions for archaeological resources.

10. Mitigation for noise impacts is described in Section 4.5.3.

11. Comments noted, but most beyond the scope of this project. Widening Palani Road to make it safer is addressed in Section 1.2.3 and the "mid-level arterial road" is another roadway improvement in addition to the completion of Kealakehe Parkway that is contained in current plans for the area.

12. Comments noted, but out of the scope of this FIS. In general, funds dedicated to roadway construction cannot be reprogrammed to non-transportation purposes. Also, the comment that "we have enough roads to get around easily all over our island" is not supported by analysis or comments by others in the community.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX

DIRECTOR'S OFFICE
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BRANCH

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DEPT. OF TRANSPORTATION
STATE HIGHWAY OFFICE
PLANNING DIVISION

Abraham Wong, Division Administrator
Federal Highway Administration
P.O. Box 50206
300 Ala Moana Boulevard
Honolulu, HI 96850

Dear Mr. Wong:

The U. S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the Kealahou Parkway in North Kona, Hawaii County, Hawaii. We provide our comments pursuant to the national Environmental Policy Act (NEPA), Section 309 of the Clean Air Act and the Council on Environmental Quality's (CEQ) Regulations for Implementing NEPA.

The Project sponsors propose to build a 2.5 mile 4-lane divided urban arterial that would connect the Mamalahou Highway and the Queen Kaahumanu Highway. The DEIS discussed a no action alternative and two build alternatives. The build alternatives consist of two different alignments with signalized intersections improvements. The DEIS did not identify a preferred alternative.

We have rated the DEIS as LO, Lack of Objections (See enclosed "Summary of Rating Definitions and Follow-up Action"). We commend the State of Hawaii Department of Transportation and the Federal Highway Administration for providing a clear and thorough document. The DEIS does a very good job of outlining the alternatives and the impacts associated with them, as well as identifying the mitigation measures to be employed, the permits that will be obtained, and the coordination efforts that are ongoing with other agencies.

Even though the villages of La'i 'Opua are already planned and approved, the completion of this parkway may induce significant growth outside and around the project area. According to the DEIS, the last decade has seen a population increase of 62% in North Kona and many of the county plans anticipate substantial population growth in the future. The Hawaii county zoning currently designates the areas around the proposed alignment as unplanned, however the Land Use Pattern Allocation Guide designates the area as urban expansion. The k to K plan which is the implementing tool for the County plan for North Kona identifies significant developments are planned for the area, yet the DEIS does not clearly indicate that the plans for the parkway and these developments are concurrent. We recommend that the Final EIS elaborate in greater detail the

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1 potential for induced growth in the surrounding areas of North Kona due to the improved circulation brought about by the Kealahou Parkway.

2 In keeping with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations (EO 12898), the FEIS should describe the measures taken by the State DOT and FHWA to fully analyze the environmental effects of the proposed Federal action on minority communities and low income populations. The intent and requirements of EO 12898 are clearly illustrated in the President's February 11, 1994, Memorandum for the Heads of all Departments and Agencies, attached. We recommend that the State DOT and FHWA work closely with the residents in proximity to the parkway regarding the immediate impacts of the Parkway and with the Native Hawaiian organizations regarding the areas where the freeway is on archaeologically significant lands. FHWA and the State DOT should also ensure that the residents in the immediate neighborhoods have access to all public information relating to the planning and construction of the Freeway.

We appreciate the opportunity to review and provide comments on this Draft EIS. Please send two copies of the Final EIS to this office at the same time it is officially filed with our Washington, DC office. If you have any questions, please feel free to contact me at (415) 744-1584, or have your staff contact David J. Carlson of my staff at (415) 744-1577.

Sincerely,


David Farrel, Chief
Office of Federal Activities

Attachment: 3 pages
MI# 001877kealpy.dei

cc: Jeffrey Brooks, FHWA - Region IX
Kazu Hayashida, State Department of Transportation

DEPARTMENT OF TRANSPORTATION
DIVISION OF ENVIRONMENTAL
STATEMENTS
JUN 2 1995

Response to U.S. Environmental Protection Agency, Region IX

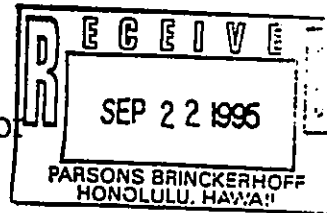
1. Large population increases are planned for this part of North Kona. Government is making many infrastructure investments to support these future populations levels (e.g. roads, sewage, water supply, housing), and land use plans and zoning designations have been updated to reflect the planned growth. Under these conditions, the impact of Kealahou Parkway for inducing growth is minimal. Rather, a combination of infrastructure investments and land use plans and approvals is facilitating resident population increases in the area.

2. Compliance with Environmental Justice is discussed in Section 4.2.4. Since the ethnic population of West Hawaii is 59 percent white and income levels are generally higher than the island median, the analysis for Environmental Justice was limited to five residences used by retired Palani Ranch employees, located between the detour road and Kealahou Parkway. The proposed action will not cause health risks to these residents, mitigation measures will be implemented to preserve the integrity of the community, and the landowner has identified another property for the one unit that will be relocated. Therefore, having met the provisions of the Executive Order on Environmental Justice, it was determined that the proposed action will not have a disproportionate impact on minority groups or low income populations within the context of the income levels and racial composition of Hawaii. Coordination with the native Hawaiian community has occurred and will continue through the Hawaii Island Burial Council, the Office of Hawaiian Affairs, and the SHPO.



United States Department of the Interior

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



In Reply Refer To: MSS/KE

SEP 18 1995

Memorandum

To: Regional Director
Region I, Portland, Oregon

Through: Assistant Regional Director
Pacific Islands Ecoregion,
Region I, Portland, Oregon

Through: ^{Acting} Pacific Islands Ecoregion Manager
Pacific Islands Ecoregion, Honolulu, Hawaii

From: Field Supervisor
Ecological Services
Pacific Islands Ecoregion

Subject: Draft Environmental Impact /Section 4 (f) Statement for the
Construction of Kealakehe Parkway, Mamalahoa Highway to Queen Kaahumanu
Highway, North Kona District, Hawaii County, Hawaii
ER # 95/0605

The Service's comments on the referenced Draft EIS are attached for your review and signature. For information about the review comments, please contact Ms. Margo Stahl, Branch Chief for Interagency Cooperation, at 808/541-3441.

attachment

Brook Harper



United States Department of the Interior
FISH AND WILDLIFE SERVICE

Memorandum

To: Field Director
National Park Service

From: Regional Director
Fish and Wildlife Service

Subject: Review of Draft Environmental Impact /Section 4 (f) Statement for the
Construction of Kealakehe Parkway, Mamalahoa Highway to Queen
Kaahumanu Highway, North Kona District, Hawaii County, Hawaii

The U.S. Fish and Wildlife Service (Service) has reviewed the July 1995 Draft Environmental Impact Statement (Draft EIS) for the proposed construction of Kealakehe Parkway, Mamalahoa Highway to Queen Kaahumanu Highway, North Kona District, Hawaii County, Hawaii. The following comments are provided for your consideration for inclusion in the Departmental response pursuant to our authorities under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*; 83 Stat. 852), as amended, the Fish and Wildlife Coordination Act of 1934 (16 U.S.C. 661 *et seq.*; 48 Stat. 401), as amended, the Endangered Species Act of 1973 (16 U.S.C. 1531-1534; 87 Stat. 884), as amended, and other authorities mandating Service concern for environmental values.

General Comments

The Draft EIS does not adequately address impacts to federally listed and candidate endangered and threatened species, including the endangered loulu palm (*Pritchardia affinis*), the endangered uhiuhi tree (*Caesalpinia kawaiensis*), the candidate ko'oko'alau (*Bidens micrantha* spp. *ctenophylla*), the endangered Hawaiian petrel (*Pterodroma phaeopygia sandwichensis*), the threatened Newell's shearwater (*Puffinus auricularis*), or the candidate band-rumped storm petrel (*Oceanodroma castro cryptoleucura*). The Federal Highways

Administration has initiated formal section 7 consultation with the Service in accordance with the Endangered Species Act in order to address impacts of the road construction project on these species. Since the consultation is ongoing, we believe that selection of a preferred alternative and issuance of the Final EIS should be deferred until the Service's Biological Opinion has been rendered. The Draft EIS lacks the specific information necessary to comprehensively evaluate impacts to federally listed and candidate species, including detailed conservation measures to minimize impacts.

Specific Comments

- a. p. 3-47. Chapter 3.0. Affected Environment. 3.11 Endangered and Threatened Species.

1 The Draft EIS lacks information on endangered and threatened and candidate seabirds that may transit through the project area during their migrations from the sea to terrestrial nesting grounds. We recommend that the Final EIS include information stating that the endangered Hawaiian petrel, the threatened Newell's shearwater, and the candidate band-rumped storm petrel may occur in the project area.

- b. p. 4-41. Chapter 4.0. Environmental Consequences. 4.11. Endangered and Threatened Species. 4.11.1. Potential Impacts and Agency Coordination.

2 This section of the Draft EIS does not adequately describe or address impacts to endangered and threatened and candidate species. The Draft EIS fails to include a discussion on the potential for the roadway lighting to adversely affect native seabirds that may transit through the project area. Seabirds, particularly fledglings, are often attracted to bright lights during flights from their terrestrial nesting sites to the sea. The installation of bright lights along the highway may pose a significant threat to seabirds by causing them to become disoriented and to collide with street lighting, power lines, buildings, or other structures in the area.

3 The Draft EIS acknowledges that endangered and candidate plants may be affected by the project. However, a thorough discussion of the direct, indirect, and cumulative impacts of the project on rare plants within the area is lacking. An analysis of the direct effects of project construction, the indirect effects of project operations, and the cumulative impacts associated with urbanization and increased fire potential during road construction and operation should be addressed in the Final EIS.

- c. p. 4-41. Chapter 4.0. Environmental Consequences. 4.11. Endangered and Threatened Species. 4.11.2. Mitigation Measures.

The Draft EIS fails to identify mitigation measures to reduce impacts to endangered and threatened and candidate species. The Service recommends that measures to minimize impacts

4 to seabirds such as requiring shielded lights along the highway be incorporated into the project. More information on measures to minimize the effects of urban lights on seabirds can be found in the Department of Land and Natural Resources' publication entitled "*The Newell's Shearwater Light Attraction Problem, A Guide for Architects, Planners, and Resort Managers.*" We recommend that the guidelines in this publication be followed in designing the proposed highway lighting.

5 In addition, specific measures to minimize impacts to endangered and candidate plants in the project area should be identified in the Final EIS. A mitigation plan should be included which allows for the evaluation of the net effects of the project on native plants. This mitigation plan should address the endangered and candidate species identified in the Final EIS with respect to habitat protection and reduction of fire hazards. It is also important to point out that the use of native plants in roadway landscaping and xeroscaping is not adequate mitigation unless it results in self-sustaining viable populations of native plants.

d. p. 2-1. Chapter 2.0. Alternatives Analysis.

The Service has tentatively identified Alternative 11 as the environmentally preferred alternative assuming appropriate mitigation is incorporated into the project to reduce impacts to listed and candidate species.

Summary Comments

In summary, the Service finds the Draft EIS inadequate in its evaluation of impacts to endangered, threatened, and candidate species and lacking in identified mitigation for impacts. The Service is in the process of formal consultation with the Federal Highways Administration. We will complete the consultation in mid-October and render our Biological Opinion no later than December 4, 1995.

6 The Service disagrees with the statement in the Draft EIS that "Further progress on these issues [endangered and threatened species] will be made after selection of the preferred alternative, and will be incorporated in the final EIS. Section 7 consultations could continue after the acceptance of the final EIS." Section 7(d) of the Endangered Species Act prohibits federal agencies from making any "irreversible or irremediable commitment of resources that would preclude the formulation or implementation of reasonable and prudent alternatives" that may be identified in the Service's Biological Opinion. Therefore, we strongly recommend that decisions to select a preferred alternative be withheld until the Service's Biological Opinion is rendered.

The Service's Pacific Islands field office has enjoyed the working relationship established with the Federal Highways Administration. The Service looks forward to resolving the issues identified in this letter through the consultation process. For technical assistance on matters

pertaining to the Endangered Species Act, contact the Field Supervisor, U.S. Fish and Wildlife Service, P.O. Box 50088, Honolulu, Hawaii 96850. Thank you for the opportunity to review the Draft EIS.

cc: Mr. Abraham Wong
Department of Transportation
Highways Division
Planning Branch
600 Kapiolani Boulevard, Suite 304
Honolulu, Hawaii 96817

Governor Ben Cayetano
State of Hawaii
c/o Office of Environmental Quality
Control
220 South King Street, 4th Floor
Honolulu, Hawaii 96813
Attn: Ronald Tsuzuki

Parsons Brinckerhoff Quade & Douglas, Inc.
Pacific Tower, Suite 3000
1001 Bishop Street
Honolulu, Hawaii 96813
Attn: Keith Nakano

**Response to U.S. Department of the Interior, Fish and Wildlife Service,
Pacific Islands Ecoregion**

1. Section 4.11 has been revised to address candidate seabirds that may migrate through the project area.
2. Initially, light standards will be erected only at proposed intersections. Over time as the area becomes urbanized, lights will be added. Section 4.11.3.3 describes the design of the light standards, while Section 4.11.2 describes the expected impact to seabirds flying through the project area.
3. Sections S.5 and 4.11 addresses the direct effects of project construction, the indirect effects of project operations, and the cumulative impacts associated with urbanization following roadway construction and operation.
4. Section 4.11.3.3 describes the lighting design that will be used to mitigate disturbance to migrating seabirds.
5. Sections 4.11.3.1 and 4.11.3.2 describe the translocation plan and fire plan intended to protect endangered and candidate species.
6. Comment noted. This final FIS has been prepared following the issuance of the EWS' non-jeopardy biological opinion. Details describing consultations may be found in Appendix B.1.

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STATEWIDE TRANS.
PLANNING OFFICE

SEP 21 2 45 PM '95

September 18, 1995

Kazu Hayashida, Director
State of Hawaii, Dept. of Transportation
869 Punchbowl St.
Honolulu, HI 96813

Dear Mr. Hayashida:

I would like this letter to be RECORDED as written testimony in the Dept. of Transportation, State of Hawaii proposed Kealakehe Parkway Road

Be aware that I am not against a safe new mauka-makai access from the top of Palani Road down to Queen Kaahumanu Highway. As a Kona resident for twenty "20" years, I believe that such a road would be beneficial for the safety of all because of the projected growth of this area.

However, I do have some serious concerns about the proposed project. Mainly its location, safety, cost and impact on rural lifestyles.

1 First would be location, being a major four(4) lane mauka-makai road, I don't understand why it should be built on areas where Palani Road starts on a downhill with unsafe turns before turning makai on to Kealakehe Parkway. The fact that the road has a sweeping almost hairpin (180 degree) turn as an on-ramp and off-ramp off of Palani Road doesn't make any sense. That turn by the way sweeps right next to my home as close as only 150 feet from my back door on a down grade which may be as much as 11%. Access on to and off of Kealakehe Parkway should be placed a few hundred feet north where access on to and off of would be from a straight and much more level roadway, Highway 11, and tied into the existing Palani-Old Mamalahoa Junction. Access would be through Palani Ranch and effecting less residents. Also eliminating any hairpin turns because of the proposes traffic signal at the intersection.

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2 My next item of concern is safety. If built as proposed the Kealakehe Parkway will be as close as 150 feet from my home and also very close to five other residences. Its design calls for a sweeping 180 degree turn built on a berm. Because of this, noise, dust, and the very real possibility of runaway trucks, puts myself and family in a very unhealthy and unsafe location. At the last EIS Public Hearing, I directed a question to a planner representative from the State that if any runaway truck ramps are incorporated into the roads design and his answer was "NO, but very good point!" My response was that "I have the perfect location! My backyard!" For every large truck coming down that steep grade around a turn towards my home only 150 feet away, I will be thinking, "Is this the one that the brakes will fail or have a flat that will cause him to come crashing into my yard where my children and their friends are at play?" Please take a minute to think about this dangerous and lethal situation that has happened before on Palani Road and most surely will happen again. What can be done to address this problem.

3 This brings me to the subject of dust and noise. The EIS handout at the last public meeting clearly states that "The Kealakehe Parkway Project will have "HIGHLY LOCALIZED AND SEVERE ADVERSE IMPACTS" on those existing residence that would be immediately adjacent to the berm on which the roadway will be built. Both my children have asthma, some of which is brought on by dust. Soot and dust come hand in hand with roads. Another health factor is stress, not only from noise, dust, but the idea that at any given time the real possibility exists that a 20, 30, or 40 ton tractor-trailer might come plowing through my house. Every vehicle going down or coming up this road at night will shine their headlights right at my livingroom and kids bedrooms, as they make their way around this large and dangerous turn.

4 My next item is property value. When my wife and I purchased our lot in 1981 we had certain considerations why we would choose this special lot to build our home and raise our family.

1. It was a flag lot a 400 feet away from the main road.
2. The north side, back of the house was all ranch, which meant no neighbors.
3. The lot is close to town, only 3 miles from Kailua.

These special qualities made out lot and home very desirable. However, because of speculators within our subdivision, we have been hit with increased real property taxes of over 300% over a period of 7 years. We have a simple 1400 sq. ft. home, planted with coffee and a few fruit trees. Our intention is long term, at least through my life time. If the proposed road is built as planned, it not only destroys my chosen way of life, but it will also make my home and lot very undesirable, thus making relocation to another location in Kona very slim.

5 At \$49 million for 2.5 miles of road, I believe that this project is not very cost efficient. I am not an expert on the cost of building roads, but it sure seems like a lot of money for so little road.

Possible solutions to my concerns are:

6 1. Redesign the road to connect at Palani and Old Mamalahoa Junction. A much safer access, also less immediate effects with existing residents.

7 2. Upgrade the top section of Hinalani (Kona Heavens Roadway) to better accomodate protected traffic and connect new Parkway once below any homes within Kona Heavens. The only portion of this already built Mauka-Makai Road that is old and not adequate is the top 1/4 mile or so. Seems that it would be more cost wise to upgrade a present road then to have to condemn land and build a new road.

8 3. The third option is to build Kealakehe Parkway as planned with the option to give those residents that are severly and adversely effected the chance to be bought out right at fair market value so that we may realize our chosen lifestyle of a quiet rural home to raise our families as we do now, but stand the chance to lose if the Kealakehe Parkway is carried out.

Please respond within the month as promised.

Respectfully yours,

Alfred Palmeira
Alfred Palmeira

Response to Alfred Palmeira

1. Construction of Kealakehe Parkway will begin at the intersection of Mamalahoa Highway, Old Mamalahoa Highway and Palani Road and will conform to State rural arterial highway standards. After project completion, Mamalahoa Highway will smoothly transition into Kealakehe Parkway heading south. There will be no exit or entrance ramps accessing Kealakehe Parkway. Therefore, following project completion, there will be no unsafe turns as the motorist stays on essentially the same road, whose name changes from Mamalahoa Highway to Kealakehe Parkway. To extend Kealakehe Parkway as a continuation of Old Mamalahoa Highway across Mamalahoa Highway, would conflict with roadway master plans for Kealakehe Parkway, as well as with the established project goal of Kealakehe Parkway being a direct through route. Section 1.2 describes the project's purpose and need.

While the most mauka turn of Kealakehe Parkway is approximately 130 degrees, it is by no means a "hairpin." This turn has a radius of 275 meters (915 feet), which fully complies with State and federal highway design standards and all applicable safety standards. At this turn, the down grade would be 9.5 percent, not 11 percent. Many such highway curves exist, and are safe.

2. While details have not yet been determined, Kealakehe Parkway will be banked at the turns, further enhancing safety. In addition, a guard rail will be installed along the outside of the curve, beyond the shoulder. Although a runaway truck ramp is not presently proposed, were one to be provided, it would have to be on the makai-bound side of the road, not the mauka-bound side.

3. "Highly localized and severe adverse impacts" pertain to visual impacts to those residential parcels immediately adjacent to the proposed roadway berm (see Section 4.14.1). In some cases, visual impacts may occur when a residence is located adjacent to a berm. However, lighting is not expected to create a visual disturbance by shining directly into homes. Street light luminaries will be designed to reduce glare and shield light.

It is SDOT's standard practice to incorporate dust and noise control measures during construction.

4. Kealakehe Parkway will increase traffic safety and enhance access in the area. These improvements tend to increase development potential, and the net effect will probably increase property values in the area.
5. Comment noted.
6. Kealakehe Parkway will begin at the Palani Road and Old Mamalahoa Highway Junction and will form a through route with Mamalahoa Highway.
7. Upgrading Hina Lani Street does not conform to the project's goal of providing access to the Villages of La'i'opua and having Kealakehe Parkway form a through route with Mamalahoa Highway. Section 1.2 describes the project's goals.
8. Relocation assistance is reserved for those who would be physically displaced by the roadway. Relocating those adjacent to the right-of-way is not an allowable use of relocation assistance. Details of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 are described in Section 4.1.3.

Michael Traub, N.D.
75-5759 Kuakini Hwy, Suite 202
Kailua Kona, HI 96740
Phone/Fax 808-329-2114

September 19, 1995

Kazu Hayashida, Director
State of Hawaii, Dept. of
Transportation
869 Punchbowl St.
Honolulu, HI 96813

Re: Palmeira family residence,
74-1523 Hao Kuni St., Kailua-Kona

Dear Mr. Hayashida:

1 Russell Palmeira is a 5 year old boy under my care for
the treatment of allergies. He has documented severe
allergies to dust. He lives with his parents, Fred and Rose
Palmeira, and their home is in close proximity (150 ft.) from
the path of the new 4 lane road planned for the Kealakehe
area. It is my opinion that the dust from the construction
and traffic on this road would cause a serious exacerbation
2 of Russell's allergies. If there is any possibility of re-
aligning the road so that it does not pass near the
Palmeira's home, I urge you to consider doing so.

Thank you for your attention to this matter.

Sincerely,



Michael Traub, N.D.

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SEP 20 2 30 PM '95
DEPT. OF TRANSPORTATION
HIGHWAYS DIVISION

RECEIVED
STATE DEPARTMENT
OF TRANSPORTATION
SEP 21 11 10 AM '95
HIGHWAYS DIVISION
PLANNING BRANCH

Response to Michael Traub, N.D.

1. Although dust can be generated during roadway construction, there are many ways to control it, as indicated in Section 4.18.1.
2. The proposed alignment of Kealakehe Parkway was developed after a detailed analysis of many alternatives that balanced roadway design requirements against environmental impacts and present the best balance all of the factors (see Chapter 2.0). It is SDOT's standard practice to incorporate dust and noise control measures during construction. Therefore, the proposed roadway will not need to be realigned.

LANIHAU PARTNERS L.P.

Control Data Building 2828 Paa St., Suite 3150 Honolulu, HI 96819 (808)-836-2076 Fax (808) 836-7559

September 19, 1995

Governor, State of Hawaii
c/o Office of Environmental Quality Control
220 South King Street, 4th Floor
Honolulu, HI 96813

SEP 21 11 11 AM '95
STATE DEPARTMENT
OF TRANSPORTATION
HIGHWAY CONSTRUCTION
PLANNING BRANCH

Gentlemen:

Re: Kealakehe Parkway - Draft Environmental Impact Statement

We appreciated receiving a copy of subject Draft EIS and wish to make the following comments on behalf of Lanihau Partners L.P. and Palani Ranch Company, Inc.

As a general comment, we must first observe that our properties will be substantially impacted by this project. We question, however, the likelihood of this project's actually being constructed in the foreseeable future due to the substantial cost involved and the current and projected State and Federal fiscal resources available for such projects. The downside impacts to the affected property owners of this continuing uncertainty include whether or when the project will go in and, if it does, the variety of impacts it will have on local traffic and land use patterns, noise, and visual impacts. The uncertainty has also frustrated our own planning efforts over the years which do not rely on said highway and, in fact, would be restricted should this project proceed.

As to specific comments on points raised in the draft EIS, we stand by and reaffirm our earlier comments of record. In addition;

1 | Re: Noise Impacts - (pages 3-36, 4-30, 4-35, 4-85, etc.) These will be substantial both during construction (for residences near the corridor) and after construction (for existing and future residences near the corridor). The EIS should reflect a commitment to specifically mitigate these impacts rather than relying so substantially on the design phase to come up with adequate mitigation. For example:

- Where safety barriers are required at the upper end of the highway due to substantial fill and elevated condition, these should be concrete walls rather than guard rails so that they would serve a dual function for both safety and sound mitigation.

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- Construction activity near residences should be limited to weekdays from 6:30AM to 6:30PM (see 4.17.2)

2 | Re: Visual Impacts (pages S-72, 4-81, etc.) Again, these will be substantial to residences next to the corridor (i.e.; embankments of up to 27 feet). The need for mitigation is mentioned, but exactly what degree of mitigation is assured? The EIS should again be more specific and reflect a commitment to specific mitigation steps. For example:

- All man-made fill or embankment areas shall be landscaped with a mixture of trees, ground-cover, shrubs and irrigation system in order to;
 - a). minimize erosion of the fill slope,
 - b). beautify the embankment, and
 - c). provide an added measure of noise abatement.

3 | Re: Mamalahoa/Old Mamalahoa Intersection (pages 1-7, 3-27,3-28, etc.) The study indicates both an existing and projected poor (E/F) level of service at this intersection which will only be worsened by the added traffic utilizing this improved highway. Signalization of this intersection should be a part of this project.

4 | Re: Detour Road - The northern connection point of the detour road to Mamalahoa Highway would be less costly to construct (and subsequently remove if necessary) if it were moved further to the north.

5 | Re: Impacts On Existing Agricultural Uses (pages S-20, S-21, 4-9, 4-88, etc.) Even though we acknowledge that the expanding urbanization in this area will eventually make continued pasture unfeasible, it is expected to continue as a near-term interim use. In that regard, we must recognize that cattle crossings (4-88/4.17.16) are not going to work once the highway is complete. Instead the EIS should provide for the construction of corrals and loading facilities makai (north and west) of the lower section of the corridor to service those pasture areas which would otherwise be severed and isolated from the balance of the pasture areas so long as pasturage use continues. Containment of cattle during construction is going to be an on-going problem unless the right-of-way is first fenced completely with stock-proof gates where needed for construction access and existing jeep roads. Temporary plastic mesh fencing as is typically used during construction is totally ineffective. As a minimum, even if grazing were to continue for only a few more years, the fencing must be absolutely stockproof (i.e., heavy gauge mesh hog wire with a single strand of barbed wire above and below with corner posts and other key locations being 4" pipe set in concrete). Non-disturbance of existing water distribution systems must also be stressed in the EIS.

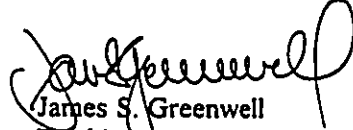
SOH - Office of Environmental Quality Control
September 19, 1995
Page 3

6 Re: Archaeological/Burial Mitigation (page 4-73) We question the State's authority to relocate any burials to locations elsewhere in the same ahupua'a but outside the acquired right-of-way. It seems that the EIS should provide that such a relocation site would also be acquired, owned by and be the responsibility of the State.

We appreciate this opportunity to express these comments.

Sincerely,

Lanikai Partners L.P.
By Lanikai Management Corporation
Its Managing General Partner


James S. Greenwell
President

JSG:vsc

cc: Dept. of Transportation
Parsons Brinckerhoff Quade & Douglas, Inc.
U.S. Dept. of Transportation

s:\jsg\lpt\Governor.doc\14

Response to Lanihau Partners

1. Sections 4.5.2 and 4.18.2 of this final EIS address noise mitigation measures during and after construction of the completion of Kealakehe Parkway. Section 4.5 contains a "reasonable and feasible" analysis of a noise wall at the mauka (eastern) terminus of the project and concludes that provision of a noise wall is appropriate. The material of construction of the noise wall have not been determined, but the safety concern of the commenter will be considered in the design phase. In addition, under normal circumstances, the daytime restrictions on construction noise suggested by the commenter will be followed.
2. Section 4.15.2 describes mitigation measures to lessen the severity of visual impacts. The specific suggestions made by the commenter are again noted, but confirmation of details is deferred to the design phase when initial and maintenance costs will be examined in more detail, including the maintenance costs of the suggested irrigation system.
3. A decision to signalize an intersection is based on traffic volumes or accident warrants. Traffic signals will be installed as part of the initial construction if appropriate conditions are met.
4. Comment noted and will be considered during final design when more topographic information is available. There are other factors besides cost to consider, such as spacing between intersections.
5. Sections 4.1.3 and 4.18.6 describe in general terms the mitigation measures proposed to maintain agricultural activity during and after construction. FHWA and SDOT will continue to work with the commenter to implement a meaningful and appropriate mitigation package so viable agricultural uses continue in the near-term.
6. The FHWA, SDOT, SHPO, ACHP, Hawaii Island Burial Council, and native Hawaiian groups will negotiate the treatment of burials. Stipulations and conditions have been incorporated into a Memorandum of Agreement. Archaeological resources and Section 4(f) mitigation are described in Sections 4.12 and 4.13. When relocation of burials is discussed, ownership of potential relocation sites will be taken into account.



University of Hawai'i at Mānoa

Environmental Center
A Unit of Water Resources Research Center
Crawford 317 • 2550 Campus Road • Honolulu, Hawai'i 96822
Telephone: (808) 956-7301 • Facsimile: (808) 956-3980

September 22, 1995
RE:0664

Governor Benjamin J. Cayetano
c/o Office of Environmental Quality Control
220 South King Street
Honolulu, Hawaii 96813

Dear Governor Cayetano:

Kealahou Parkway
Draft Environmental Impact Statement
North Kona, Hawaii

The referenced draft Environmental Impact Statement (EIS) considers a proposal by the State of Hawaii Department of Transportation and the Federal Highway Administration to construct a new, four-lane urban arterial in the North Kona district of the island of Hawaii. The proposed roadway would extend mauka from the State of Hawaii Housing Finance and Development Corporation's planned community, the Villages of La'i 'Opua, and terminate at Mamalahou Highway. The roadway system within the Villages of La'i 'Opua includes an existing portion of the Kealahou Parkway that connects to Queen Kaahumanu Highway. The proposed roadway would continue mauka and terminate at Mamalahou Highway. Upon completion, the entire Kealahou Parkway would extend mauka from the intersection of Queen Kaahumanu Highway and Honokohau Harbor Road to a point near the intersection of Mamalahou Highway and Old Mamalahou Highway.

Our review was completed with the assistance of George Curtis, UH Hilo; Karl Kim and Peter Flachsbar, Urban and Regional Planning; and Tom Hawley, Environmental Center.

This draft EIS is generally well prepared and comprehensively addresses the probable effects of the proposed project. There appear to be few significant environmental impacts; however, several issues within the document are either covered inadequately or not addressed at all.

1 Specifically, no comprehensive traffic report appears in this draft EIS. This is a
major omission for several reasons. First, such a report is a central element necessary in
order to assess a transportation-oriented EIS. Second, emissions and noise calculations are
included in the draft EIS, which would indicate that a traffic report was complete. If this
is the case, then there is no reason why it should be excluded from the EIS. The public
needs such relevant information just as much as preparers of the document do in order to
assess project impacts. Third, it appears that some study information comes from 1988 and
2 1990 population forecasts. Given that population growth is the first step in assessing "trip
generation," it is important to include accurate and up-to-date information. However, our
reviewers point out that there was considerably more optimism in 1990 regarding population
growth for this part of Hawaii. Hence, it appears that these figures should probably be
adjusted downward.

3 Other areas of the draft EIS merit improvement in the final version. First, the maps
included in the document are confusing, in part because the primary existing mauka-makai
road (Palisades) has been omitted. Second, the use of road nomenclature in the draft EIS
4 makes it difficult to determine just what is planned for the project, what presently exists and
what will exist upon completion of this phase (the first phase is apparently under
construction). Third, the draft EIS lacks clear statements regarding plans for the two major
5 intersections. This is a major problem at the mauka connection, where a new road intersects
near the proposed juncture. Fourth, information regarding high school and residential
6 construction in the area should be included in order to provide for a more comprehensive
analysis of secondary and cumulative impacts.

7 Our reviewers also question the need for a 28 foot median between the two
directions of traffic. Such an extensive median will increase the cost of the project and the
extent of its environmental impact. The rationale for a median of this size is missing from
the draft EIS and needs to be stated explicitly. Similarly, the document notes that the State
8 Bikeway Plan does not mention a bikeway for this road, yet it seems reasonable to assume
that bikeway planners did not know of this roadway and therefore could not have addressed
the possibility of a bikeway for it. Nevertheless, the project itself could be improved if
current planners at least considered the future possibility of a bikeway for the highway.
9 Furthermore, enroute access to the roadway should be brought out more clearly in the final
EIS as a future possibility. We recognize that this omission primarily is due to the absence
of planning for the Kailua-Kona area and not the fault of the document writers. Still, it is
an issue that should be addressed.

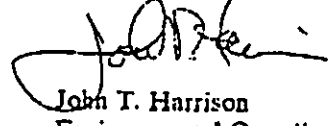
10 Finally, it appears from Figure 4-5 (page 4-42) that both of the preferred alternatives
will directly affect endangered Loulu Palms (*Pritchardia affinis*). Our reviewers take strong
exception to the preparer's choice of an ambiguous phrase "... could affect ..." on page
4-41, in reference to this concern. Given that a mitigation plan will have to be developed,
regardless of which alternative is chosen, we note that such a plan should have been
included in the draft EIS for effective public review. In the event that the mitigation plan
is not acceptable, will the proposed route be altered to insure the survival of the palms?

11

Regarding other mitigation requirements for endangered plant species, we note that botanical surveys upon which the draft EIS was based were found "inadequate" by the U.S. Fish and Wildlife Service in their letter of March 4, 1994 due to the insufficient consideration of cumulative effects. How have these inadequacies been addressed?

Thank you for this opportunity to comment.

Sincerely,



John T. Harrison
Environmental Coordinator

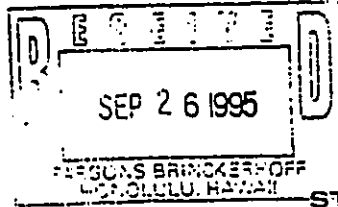
cc: OEQC
DOT, Highways Division
Parsons Brinckerhoff Quade and Douglas, Inc.
Roger Fujioka
George Curtis
Peter Flachsbart
Karl Kim
Tom Hawley

DOCUMENT CAPTURED AS RECEIVED

Response to University of Hawaii at Manoa, Environmental Center

1. The traffic impact report for the project was prepared in November 1993 and is referenced in the bibliography of this final FIS. The traffic impact report is one of several supporting technical documents which were prepared, all of which are referenced in the bibliography. None of the technical reports are included as attachments to the FIS because of the size of the FIS. All of the supporting technical reports are available for public inspection at SDOT.
2. New projections, officially released in December 1996, are reflected in Section 3.2.4.2 and Table 3-6.
3. The road accessing Kona Palisades Estates has been named Kaiminani Drive and appears throughout the final FIS.
4. Throughout the final FIS, Kealakehe Parkway is described as either "proposed" indicating the portion of the roadway under analysis, or as "completed" or "constructed," indicating the portion of roadway already constructed by the Housing Finance and Development Corporation (HFDC).
5. Discussion of the proposed improvements to the Old Mamalahoa Highway and Palani Road intersections may be found in Section 2.3.2.4.
6. Information on proposed development in the area is provided in Section 3.1.1.
7. The reason for the median width is provided in the second paragraph of Section 2.3.2.4.
8. Bikers may use the 2.4 meter (8.0 feet) roadway shoulders, as described in Section 4.3.1.3.
9. Future access to the roadway, if any, is addressed in Section S.5.4.
10. Issues relating to endangered species, including mitigation, have been negotiated directly with the U.S. FWS within the context of a formal Section 7 consultation. Accepted mitigation is included in Section 4.11.3, as contained in the FWS' non-jeopardy biological opinion.
11. See response to #10.

BENJAMIN J. CAYETANO
GOVERNOR



GARY GILL
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
220 SOUTH KING STREET
FOURTH FLOOR
HONOLULU, HAWAII 96813
TELEPHONE FROM 808-4196
FACSIMILE FROM 808-2452

September 22, 1995

Mr. Kazu Hayashida, Director
State Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Hayashida,

Subject: Draft EIS for the Kealakehe Parkway, North Kona, Hawaii

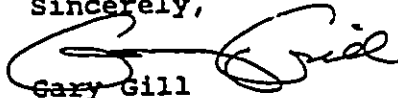
Thank you for the opportunity to review the subject document. We have the following comments.

1. Kealakehe Parkway would speed up or promote urban development in the vicinity of the project area. Please analyze the extent of urban development with and without this new roadway. Please also determine the significance of these impacts in relationship to the existing county general plan.
2. In the future, developers of projects adjacent to Kealakehe Parkway may request approval to construct an access from Kealakehe Parkway to their project. Please provide a list of all potential developers who may request access from Kealakehe Parkway.
3. We disagree with HFDC's conclusion (item 5, letter of September 1, 1995) that cumulative impacts do not need to be addressed in this EIS. Section 11-200-17(i), EIS rules clearly indicates that cumulative impacts of highway projects must be discussed in the EIS.
4. Preliminary estimates indicate that approximately 1.7 million cubic yards of earth moving activity would be required for this project. Please specify in more detail measures that will be considered for implementation to minimize erosion and runoff.

Mr. Kazu Hayashida
September 22, 1995
Page 2

If you have any questions, please call Jeyan Thirugnanam at
586-4185. Thank you.

Sincerely,


Gary Gill
Director

c: Mr. Abraham Wong, FHA
Mr. Roy Oshiro, HFDC
Mr. Keith Nakano, PBQ&D

Response to State of Hawaii, Office of Environmental Quality Control

1. Urban development is expected to occur in the project area whether or not the proposed Parkway is completed. Section 4.1 of the final EIS analyzes the extent to which urbanization will occur with the No Build and Preferred Alternative scenario. Section 4.1.2.2 describes the effect urban expansion will have in relation to the Hawaii County General Plan. Large population increases are planned for this part of North Kona. Government is making many infrastructure investments to support these future populations levels (e.g. roads, sewage, water supply, housing, schools) and land use plans and zoning designations have been updated to reflect the planned growth. Under these conditions, the impact of Kealakehe Parkway for inducing growth is minimal. Rather, a combination of infrastructure investments and land use plans and approvals is facilitating resident population increases in the area.

2. Section S.5.4 includes landowners immediately adjacent to the proposed Kealakehe Parkway.

3. Comment noted. Cumulative impacts are addressed in this final EIS.

4. More specific generally accepted erosion control measures have been added to Section 4.18. The detailed erosion control plan for this project will be reviewed and approved by the State Department of Health as part of the permit process for this project (NPDES permit).

September 22, 1995
Mahealani Pai, Pai 'Ohana Association
'Ai'opio Honokohauiki, N. Kona District
P.O. Box 3507 Kailua Kona, HI
96745-3507

Certified Mail No. Z 423 808 664

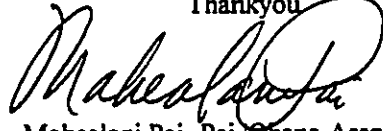
Mr. Abraham Wong
Federal Highway Administration
P.O. Box 50206, 300 Ala Moana Blvd.

Subject: Draft EIS for the Proposed Kealakehe Parkway Project

Mr. Wong:

By this missive, I wish to notify the Dept. of Transportation (DOT), Highways Division, and Federal Highway Administration (FHWA) and all relevant agencies of my **families lineal affiliation** to the ancestral Hawaiian remains interred in and around our ancestral homelands of Honokohauiki-Honokohauiki-Kealakehe ahupua'a. The site of the proposed undertaking will displace our traditional, customary and religious practices.

Thankyou



Mahealani Pai, Pai 'Ohana Association

cc: Governor, State of Hawai'i c/o Office of Environmental Quality Control
State Historic Preservation
Hawai'i Island Burial Council
Hui Malama I Na Kupuna O Hawai'i Nei

Response to Mahealani Pai, Pai 'Ohana Association

Comment noted. The Pai 'Ohana Association has been added to the project mailing list. It has received copies of An Archaeological Inventory Survey and Limited Subsurface Testing of the Proposed Kealakehe Parkway Extension, Alternative 10 and 11 and the Addendum Report to Kealakehe Parkway Extension (June 1994) for review, and has been asked to identify any sites not included in the reports, or that have improperly described functions.

BENJAMIN J. CAYETANO
GOVERNOR



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

SAM CALLEJO
COMPTROLLER

RECEIVED

MARY PATRICIA WATERHOUSE
DEPUTY COMPTROLLER

95 SEP 26 P5:09

LETTER NO (P) 1643.5

(OFC. OF ENVIRONMENTAL
QUALITY CONTROL)

SEP 25 1995

Governor
State of Hawaii
c/o Office of Environmental
Quality Control
220 South King Street, 4th Floor
Honolulu, Hawaii 96813

Gentlemen:

Subject: Kealakehe Parkway
North Kona, Hawaii
Draft EIS

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. Ralph Yukumoto of the Planning Branch at 586-0488.

Sincerely,


SAM CALLEJO
State Comptroller

BENJAMIN J. CAYETANO
GOVERNOR

MAJOR GENERAL EDWARD V. RICHARDSON
DIRECTOR OF CIVIL DEFENSE

ROY C. PRICE
VICE DIRECTOR OF CIVIL DEFENSE



OCT 16 1995



P-CNE (808) 734-2121
FAX (808) 734-1155

STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE DIRECTOR OF CIVIL DEFENSE
3949 DIAMOND HEAD ROAD
HONOLULU, HAWAII 96818-4495

October 24, 1995

TO: Mr. Abraham Wong, Division Administrator
Federal Highway Administration
P. O. Box 50206
300 Ala Moana Boulevard
Honolulu, Hawaii 96850

FROM: Roy C. Price, Sr.
Vice Director of Civil Defense

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)/SECTION 4 (f)
STATEMENT; KEALAKEHE PARKWAY

State Civil Defense (SCD) appreciates this opportunity to comment on the DEIS/Section 4 (f) Statement submitted by the U.S. Department of Transportation, Federal Highway Administration, Hawaii Division, on Kealakehe Parkway, Mamalahoa Highway to Queen Kaahumanu Highway, North Kona, Hawaii, Hawaii.

While we do not have negative comments specifically directed at this DEIS, we do have a proposal that the State and County should consider in this application. This proposal entails that the transportation engineers design and construct this parkway for use as a potential emergency evacuation route. Additionally, consideration should be given to installing a four-inch conduit, with an adequate number of pull boxes, alongside any planned drainage or utility infrastructure. This conduit would be served for future State Telecommunications use. Just as parks, schools, fire hydrants, underground/overhead utilities and sidewalks are planned as integral parts of subdivisions and industrial areas, so must mitigation measures, early warning and emergency warning systems be planned for the safety of communities. No outdoor warning sirens will be required as part of this application. The purchase and installation of these devices and support infrastructure will be the responsibility of the developers of adjacent properties.

Mr. Abraham Wong
October 24, 1995
Page 2

Our SCD planners and technicians are available to discuss this further if there is a requirement. Please have your staff call Mr. Mel Nishihara of my staff at 733-4300.

bc: Parsons BrinckerhoffQuade & Douglas, Inc.
Pacific Tower, Suite 3000
1001 Bishop Street
Honolulu, Hawaii 96813

Attn: Keith Nakano

Response to State of Hawaii, Department of Defense

Kealakehe Parkway, when completed, can supplement the existing roadway network as an emergency evacuation route. Facilities for future early warning and emergency warning systems can be accommodated within the roadway right-of-way. Details of such facilities will be determined and coordinated during the design phase.



United States Department of the Interior

STATE DEPARTMENT
OF TRANSPORTATION
OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

Nov 7 11 15 AM '95

HIGHWAYS DIVISION
PLANNING BRANCH

ER-95/605

OCT 26 1995



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OFFICE OF TRANSPORTATION
HIGHWAYS DIVISION

Mr. Abraham Y. Wong
Division Administrator
Federal Highway Administration
Kalaniana'ole Federal Building
300 Ala Moana Boulevard, Room 3202
Box 50206
Honolulu, Hawaii 96850

Dear Mr. Wong:

This is in response to the request for the Department of the Interior's comments on the Draft Environmental/Section 4(f) Evaluation for the construction of Kealahou Parkway, Mamalahou Highway to Queen Kaahumanu Highway, North Kona District, Hawaii County, Hawaii.

SECTION 4(f) EVALUATION COMMENTS

1 We concur that there is no prudent and feasible alternative to the proposed project. We also concur with the proposed measures to minimize harm to historic and archeological resources. We recommend continued cooperation and coordination with the State Historic Preservation Officer in order to complete a Memorandum of Agreement (MOA) which should include measures to avoid or minimize harm to all historic and archeological resources which may be impacted by the proposed project, including the Kaloko-Honokohau National Historic Park and various trails which reflect major trends in the history of Hawaii. A signed copy of the MOA should be included in the Final Section 4(f) Evaluation.

ENVIRONMENTAL STATEMENT COMMENTS

General Comments

2 The Draft Environmental Statement (DEIS) does not adequately address impacts to candidate species and species listed as endangered or threatened under the Endangered Species Act of 1973, as amended (ESA). These species include the endangered loulu palm (*Pritchardia affinis*), the endangered uhiuhi tree (*Caesalpinia kavaiensis*), the candidate ko'oko'alau (*Bidens micrantha* ssp. *ctenophylla*), the endangered Hawaiian petrel (*Pterodroma phaeopygia sandwichensis*), the threatened Newell's shearwater (*Puffinus auricularis*), or the candidate band-rumped storm petrel (*Oceanodroma castro cryptoleucura*). The Federal Highway

2

Administration has initiated formal Section 7 consultation with the U.S. Fish and Wildlife Service (FWS) in accordance with the ESA to address impacts of the road construction project on these species. However, the DEIS lacks the specific information necessary to comprehensively evaluate impacts to federally-listed and candidate species, including detailed conservation measures to minimize impacts.

3 We disagree with the statement in the DEIS that "Further progress on these issues (endangered and threatened species) will be made after selection of the Preferred Alternative, and will be incorporated into the Final EIS. Section 7 consultations could continue after the acceptance of the Final EIS." Section 7(d) of the Endangered Species Act prohibits Federal agencies from making any "irreversible or irretrievable commitment of resources that would preclude the formulation or implementation of reasonable and prudent alternatives" that may be identified in the Biological Opinion. Therefore, selection of a Preferred Alternative should be withheld until the FWS's Biological Opinion is rendered.

The FWS's Pacific Islands Field Office has enjoyed the working relationship established with the Federal Highway Administration. We anticipate resolving the issues identified in this response through the FWS's consultation process. For technical assistance on matters pertaining to the Endangered Species Act, please contact the Field Supervisor, U.S. Fish and Wildlife Service, Post Office Box 50088, Honolulu, Hawaii 96850.

Specific Comments

4 Page 3-47, Chapter 3.0 Affected Environment, 3.11 Endangered and Threatened Species 4.11.1 Potential Impacts and Agency Coordination. This section of the DEIS does not adequately describe or address impacts to endangered and threatened and candidate species. The DEIS fails to include a discussion on the potential for the roadway lighting to adversely affect native seabirds that may transit through the project area. Seabirds, particularly fledglings, are often attracted to bright lights during flights from their terrestrial nesting sites to the sea. The installation of bright lights along the highway may pose a significant threat to seabirds by causing them to become disoriented and to collide with street lighting, power lines, buildings, or other structures in the area.

5 The DEIS acknowledges that endangered and candidate plants may be affected by the project. However, a thorough discussion of the direct, indirect, and cumulative impacts of the project on rare plants within the area is lacking. An analysis of the direct effects of the project construction, the indirect effects of project operations, and the cumulative impacts associated with urbanization and increased fire potential during road construction and operation should be addressed in the Final Environmental Impact Statement (FEIS).

6

Page 4-41, Chapter 4.0 Environmental Consequences, 4.11, Endangered and Threatened Species, 4.11.2 Mitigation Measures. The DEIS does not identify mitigation measures to reduce impacts to endangered and threatened and candidate species. The proposed project should provide measures to minimize impacts to seabirds, such as requiring shielded lights along the highway to be incorporated into the project. More information on measures to minimize the effects of urban lights on seabirds can be found in the Department of Land and Natural Resources' publication entitled "The Newell's Shearwater Light Attraction Problem, A Guide for Architects, Planners, and Resort Manager." We recommend that the guidelines in this publication be followed in designing the proposed highway lighting.

7

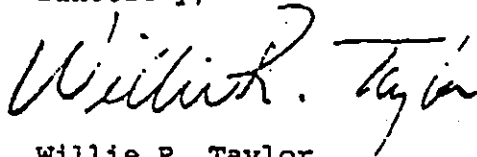
In addition, specific measures to minimize impacts to endangered and candidate plants in the project area should be identified in the FEIS. A mitigation plan should be included which allows for the evaluation of the net effects of the project on native plants. This mitigation plan should address the endangered and candidate species identified in the FEIS with respect to native plants in roadway landscaping, and xeriscaping is not adequate mitigation unless it results in self-sustaining viable populations of native plants.

SUMMARY COMMENTS

The Department of the Interior has no objection to Section 4(f) approval of this project by the Department of Transportation, providing that the mitigation measures to historic and archeological resources are adequately documented in the Final Section 4(f) Evaluation.

We appreciate the opportunity to provide these comments.

Sincerely,



Willie R. Taylor
Director, Office of Environmental
Policy and Compliance

cc: Mr. Kazu Hayashida, Director
State Department of Transportation
Highways Division
869 Punchbowl Street
Honolulu, Hawaii 96813

Response to U.S. Department of the Interior, Office of the Secretary

1. Comment noted. The signed MOA is being included in this document along with the final Section 4(f) Evaluation.
2. FHWA and SDOT have conducted formal Section 7 consultations with the U.S. Fish and Wildlife Service (FWS) to address concerns about threatened and endangered species. The final FIS adequately addresses these federally-listed and candidate species.
3. Comment noted. The U.S. FWS's biological opinion of non-jeopardy was received on February 16, 1996.
4. Initially, light standards will be erected only at proposed intersections. Over time as the area becomes urbanized, lights will be added. Section 4.11.3.3 describes the design of the light standards, while Section 4.11.2 describes the expected impact to seabirds flying through the project area.
5. Sections S.5 and 4.11 addresses the direct effects of project construction, the indirect effects of project operations, and the cumulative impacts associated with urbanization following roadway construction and operation.
6. Section 4.11.3.3 describes the lighting design that will be used to mitigate disturbance to migrating seabirds.
7. Sections 4.11.3.1 and 4.11.3.2 describe the translocation plan and fire plan intended to protect endangered and candidate species.

5.5 LIST OF COMMENTERS

The following agencies, organizations and individuals provided written comments on the draft EIS.

FEDERAL AGENCIES

Department of the Army, U.S. Army Engineer District, Honolulu
United States Department of Agriculture, Natural Resources Conservation Service
United States Department of the Interior, Fish and Wildlife Service, Pacific Islands Ecoregion
United States Department of the Interior, Geological Survey Water Resources Division
United States Department of the Interior, Office of the Secretary
United States Environmental Protection Agency, Region IX

STATE AGENCIES

Department of Accounting and General Services
Department of Budget and Finance, Housing Finance and Development Corporation
(now Housing and Community Development Corporation of Hawaii under the Department of Economic Development & Tourism)
Department of Business, Economic Development & Tourism, Land Use Commission
Department of Defense
Department of Education
Department of Hawaiian Home Lands
Department of Health
Department of Human Services
Office of Environmental Quality Control
Office of Hawaiian Affairs
University of Hawaii at Manoa, Environmental Center
University of Hawaii at Manoa, Water Resources Research Center

COUNTY AGENCIES

Department of Water of Supply
Police Department

BUSINESSES

Lanikai Partners
Keauhou Kona Resort Company
Kona-Kohala Chamber of Commerce
Kona Transportation Company, Inc.
West Hawaii Concrete

CITIZENS/ORGANIZATIONS

George Bennett, Kona Heavens Association
Tracy Boynton
Janet Butler
Victor and Pat Crosetti
R. Kelly Greenwell
Mahealani Pai, Pai 'Ohana Association
Alfred Palmeira
Derek and Margie Park
Dawn Perry, Kona Heavens Association
Michael Traub, N.D.

CHAPTER 6.0
LIST OF PREPARERS

CHAPTER 6.0 LIST OF PREPARERS

Below is a listing of persons who were primarily responsible for preparing the Final Environmental Impact Statement (EIS), their titles, and educational backgrounds.

DOCUMENT PREPARATION

State of Hawaii Department of Transportation

Ron Tsuzuki, Highways Division Head Planning Engineer

Parsons Brinckerhoff Quade & Douglas, Inc. (Environmental Consultant)

David Atkin, Environmental Task Leader

Ph.D., Biology (Ecology), Princeton University

B.S., Biology (Marine), Stanford University

Deneitra M. G. Hutchinson, AICP, Deputy Environmental Task Leader

M.S., Community and Regional Planning, University of Texas at Austin

B.F.A., University of Texas at Austin

Jason Yazawa, AICP, Planner

M.U.R.P., Urban and Regional Planning, University of Hawaii

B.A., Economics, University of Hawaii

TECHNICAL STUDIES

Char & Associates (Botanical/Environmental Consultants)

Winona Char, Botanist

M.S., Botanical Sciences, University of Hawaii

B.S., Botanical Sciences, University of Hawaii

Cultural Surveys Hawaii (Archaeological Studies)

Hallett H. Hammatt, Principal Investigator

Ph.D., Archaeology, Washington State University

M.A., Prehistoric Archaeology, University of Edinburgh

B.A., History, University of Pennsylvania

R.M. Towill Corporation (Surveyors)

Robert Lee, Registered Land Surveyor

B.S., Civil Engineering, University of Hawaii

REVIEWER

U.S. Department of Transportation Federal Highway Administration, Honolulu
Pat Phung, Transportation Engineer
B.S., Civil Engineering, University of Washington

**CHAPTER 7.0
FEIS RECIPIENTS**

CHAPTER 7.0

FEIS RECIPIENTS

FEDERAL AGENCIES

Advisory Council on Historic Preservation

U.S. Department of Agriculture
Natural Resources Conservation Service

U.S. Department of the Army
U.S. Army Engineer District

U.S. Department of Interior
Office of Environmental Project Review
Fish and Wildlife Service, Pacific Islands Ecoregion

Environmental Protection Agency
Office of Federal Activities
Region IX Regional Administrator

U.S. LEGISLATORS

The Honorable Daniel K. Inouye

The Honorable Daniel K. Akaka

The Honorable Patsy T. Mink

STATE AGENCIES

Department of Business, Economic Development and Tourism
Housing and Community Development Corporation of Hawaii (previously
Housing Finance and Development Corporation in the Department of
Budget and Finance)

Land Use Commission
Office of Planning

Department of Defense
Office of the Director of Civil Defense

Department of Hawaiian Home Lands

Department of Land and Natural Resources
Hawaii Island Burial Council
State Historic Preservation Division

Office of Environmental Quality Control

Office of Hawaiian Affairs

University of Hawaii at Manoa
Environmental Center

STATE SENATORS

The Honorable Andrew Levin

The Honorable Malama Solomon

STATE REPRESENTATIVES

The Honorable Paul Whalen

The Honorable David A. Tarnas

COUNTY OF HAWAII

The Honorable Steve Yamashiro, Mayor, Hilo

County Council, County of Hawaii

Planning Department

LIBRARIES

Hawaii State Library

Hilo Regional Library

Kahului Regional Library

Kaimuki Regional Library

Kaneohe Regional Library

Kauai Regional Library

Pearl City Regional Library

Kailua-Kona Public Library

Legislative Reference Bureau

University of Hawaii, Hamilton Libraries

OTHER INDIVIDUALS/ORGANIZATIONS

Lanikai Partners

Pai 'Ohana Association

Tracy Boynton

Alfred Palmeira

Michael Truab, N.D.

CHAPTER 8.0
BIBLIOGRAPHY

CHAPTER 8.0 BIBLIOGRAPHY

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- Addendum Report to Kealakehe Parkway Extension, Archaeological Inventory Survey for the Proposed Kealakehe Parkway Extension Detour Road Alternatives 1 and 2, Honokohau 1, North Kona, Hawaii June 1994
- Archaeological Planning Reconnaissance for the Proposed Kealakehe Parkway Extension February 1993
- Botanical Survey Kealakehe Parkway Extension Alternatives 6A and 8, Kailua-Kona, North Kona District, Island of Hawaii January 1993
- Botanical Survey Kealakehe Parkway Extension, Alternatives 10 and 11, Kailua-Kona, North Kona District, Island of Hawaii October 1993
- Kealakehe Parkway Air Quality Report November 1993
- Kealakehe Parkway Feasibility Study and Environmental Impact Statement: Traffic Impact Report November 1993
- Kealakehe Parkway Technical Memorandum October 1992
- Noise Analysis Report October 1993
- Report on the Endangered Loulu Palms (*Pritchardia affinis*) Found within the Palani Road Corridor April 1995

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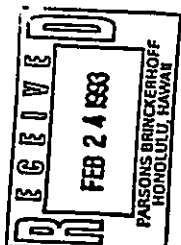
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APPENDICES

APPENDIX A
Hazardous Waste

CUST 3-3-1
H-H/6



February 5, 1993

Ms. Crystal Johnson
Parsons, Brinckerhoff, Quade & Douglas, Inc.
Two Waterfront Plaza, Suite 220
500 Ala Moana Blvd.
Honolulu, HI 96813

Dear Ms. Johnson,

This is in reference to your letter dated January 29, 1993.

The Hawaii County Fire Department has no information documented regarding fires and its potential release of hazardous materials in the Kealahoe Parkway vicinity.

Should you have any further questions, please call me at 961-8336.

Sincerely,

Ralph
Ralph Yoshizumi
Battalion Chief

February 23, 1993

Parsons, Brinckerhoff, Quade & Douglas, Inc.
Three Waterfront Plaza, Suite 545
500 Ala Moana Boulevard
Honolulu, HI 96813

Attention: Ms. Crystal Johnson

This is to confirm our recent telephone conversation concerning your letter of January 29, 1993.

Please be informed that our records indicate that we have had no transformer oil leakage in the Kealahoe Parkway vicinity as noted on your maps.

Should you have any questions, please write or call me at 935-1171.

Sincerely,

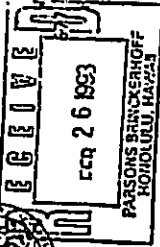
Dave Murakami

Dave Murakami
Customer Engineering Supervisor
Customer Engineering Division

DH:pd



United States Department of the Interior



GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
Ala Moana Blvd., Suite 415
Honolulu, Hawaii 96813

February 25, 1993

Ms. Crystal Johnson
Assistant Environmental Planner
Parsons Brinckerhoff Quade & Douglas, Inc.
Two Waterfront Plaza, Suite 220
500 Ala Moana Blvd.
Honolulu, Hawaii 96813

Dear Ms. Johnson:

In response to your letter of January 29, 1993 to Mr. William Meyer, requesting records of reported activities related to releases or spills of hazardous materials in the area of the proposed Kaalakehe Parkway, please be advised that the U.S. Geological Survey (USGS) has no knowledge or records of such activities.

The USGS, in cooperation with the Hawaii County Board of Water Supply, drilled three exploratory wells in the Kona area in 1991. None of the wells are located within the proposed project boundary. However there may be county, state or private wells in the study area.

Should you need additional information, please contact me at 561-2653.

Sincerely

Charles Ewart
Charles Ewart
Assistant District Chief



JOHN WILKIE
Director of Health

JOHN C. LEWIS, M.D.
Director of Health

STATE OF HAWAII
DEPARTMENT OF HEALTH
ENVIRONMENTAL MANAGEMENT DIVISION
FIVE WATERFRONT PLAZA, SUITE 220
500 ALA MOANA BOULEVARD
HONOLULU, HAWAII 96813

February 1, 1993

H0203GM

Ms. Crystal A. Johnson
PB
Three Waterfront Plaza, Suite 545
500 Ala Moana Boulevard
Honolulu, Hawaii 96813

Dear Ms. Johnson:

Reference is made to your request for public information dated January 27, 1993 requesting the Solid and Hazardous Waste Branch to review records of any RCRA treatment, storage, or disposal of hazardous waste between Mamalahoa Highway and Queen Kaahamanu Highway in North Kona, Hawaii.

A review of our files, does not show any records of RCRA related activities for the site you requested. Please be advised that our files reflect facilities that have been reported to and investigated by the Department regarding solid and hazardous waste activities.

In addition, please be advised that the absence of information on reports of spills or releases does not absolve the owner from future clean up liabilities under the Resource Conservation and Recovery Act (RCRA) or the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the Hawaii Environmental Response Law, or any other applicable state or federal regulations.

Should you have any questions or comments regarding the foregoing, please contact Mr. Gregory McCartney of the Hazardous Waste Section at (808) 586-4226.

Very truly yours,

Gracelda Simmons
GRACELDA SIMMONS, Supervisor
Hazardous Waste Section



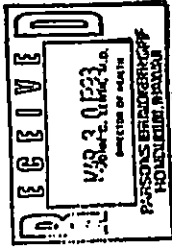
JOHN WALKER
DIRECTOR OF HEALTH



STATE OF HAWAII
DEPARTMENT OF HEALTH

P. O. BOX 3218
HONOLULU, HAWAII 96811

March 24, 1993



IN REPLY, PLEASE REFER TO:
93-030/epo

Ms. Crystal Johnson
March 24, 1993
Page 2

Solid Waste

The old municipal Kailua Solid Waste Landfill is approximately half-a-mile west of the Kealahou Community (see attached maps). It is currently in the closure process and the County is actively engaged in plans to control the fire at the site and the methane gas migration.

If you have any questions on this matter, please contact Mr. John Harder of the Office of Solid Waste Management at 586-4227.

Wastewater

It is difficult to accurately ascertain the locations of possible cesspools/septic systems that are in the area in question without proper identification in the form of a Tax Map Key (TMK) number. However, our records do show the locations of septic tank system applications. They are listed on the enclosed lists (some are highlighted in yellow). However, not all of Kealahou Parkway vicinity has been highlighted. You will have to look through the lists and determine if a TMK falls within the area of your review. The septic tank systems range from just submitted, to pending approval, or approved systems awaiting construction.

In addition, the subject area is located in the critical wastewater disposal area as determined by the Hawaii County Wastewater Advisory Committee. No new cesspools will be allowed in the subject area.

If you should have any questions on this matter, please contact Ms. Lori Kajiwara of the Wastewater Branch at 586-4290.

Please be advised that the absence of information of reports of spills, releases, or the existence of underground storage tanks does not absolve the owner from future clean up liabilities under the Resource Conservation and Recovery Act (RCRA) or the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, or the Hawaii Environmental Response Law, as amended, or any other applicable state or federal regulations.

A copy of the most recent CERCLIS List, dated March 1, 1993, which lists potential hazardous waste sites that are undergoing evaluation or have been evaluated by the U.S. Environmental Protection Agency, and the site-specific files on the CERCLIS List may be obtained by contacting Ms. Liz Galvez of the HEER Office at 586-4249.

Very truly yours,

Thomas E. Arizumi
THOMAS E. ARIZUMI, P.E.
Chief, Environmental Management Division

cc: Safe Drinking Water Branch
Office of Solid Waste Management
Wastewater Branch

Ms. Crystal Johnson
Assistant Environmental Planner
Parsons Brinckerhoff Quade & Douglas, Inc.
Two Waterfront Plaza, Suite 220
500 Ala Moana Boulevard
Honolulu, Hawaii 96813

Dear Ms. Johnson:

Subject: Request for Public Records
Preliminary Site Assessment, Phase I
Kealahou Parkway
Between Mamoehoa Parkway and Queen Kaahumanu Highway
North Kona, Hawaii

This correspondence is in response to your letter, dated January 29, 1993, requesting information regarding the subject site from the Department of Health, Environmental Management Division.

We have reviewed our files in the Clean Air, Clean Water, Safe Drinking Water, Solid and Hazardous Waste, and Wastewater Branches, and the Hazard Evaluation and Emergency Response (HEER) Office. We have the following comments to offer:

Drinking Water/Underground Injection Control (UIC)

We have reviewed the study area and have the following comments:

1. Within the study area, the UIC line is generally aligned between the 400 foot and 600 foot elevation.
2. There are no known drinking water sources located within the study area.
3. There are fifteen (15) issued UIC permits and seven (7) pending UIC applications associated within the study area.
4. There have been no enforcement actions associated with the UIC permitted facilities.

If you have any questions on this matter, please contact Mr. Morris Uehara of the Safe Drinking Water Branch/Underground Injection Control Section at 586-4259.

APPENDIX B

Endangered and Threatened Species

- Appendix B.1 - Correspondence and Coordination
- Appendix B.2 - Proposed Endangered and Threatened Species

Appendix B.1 - Correspondence and Coordination



Parsons
Brinckerhoff
Two Waterfront Plaza
Suite 220
500 Ala Moana Boulevard
Honolulu, HI 96813-4990
808-531-7054
FAX: 808-528-2368

September 24, 1993

Karen Evans
U.S. Fish and Wildlife Service
500 Ala Moana Boulevard
Three Waterfront Plaza, Ste. 580
Honolulu, Hawaii 96813

RE: KEALAKEHE PARKWAY EIS
THREATENED AND ENDANGERED SPECIES

Dear Ms. Evans:

Per our telephone conversation this morning, I am enclosing a copy of the Botanical Survey (for) Kealahou Parkway Extension Alternatives 10 and 11, Kailua-Kona, North Kona District, Island of Hawaii (August 1993) as prepared by Char & Associates. The survey includes a project map showing the two preferred alternatives that will be discussed in the draft EIS.

Please review the enclosed material and phone me at 524-5177 with the steps to proceed. We look forward to consulting with your agency to determine the presence or absence of listed and proposed threatened and/or endangered species and designated and proposed critical habitat in the Kealahou project area (50 CFR 402.12(c)).

Sincerely yours,
PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC.

Denelira M. Green
Denelira M. Green
Environmental Planner

cc: Robert Miyaskal - PBOD
David Aikin - PBOD
Doug Orlimoto - SDOT

Enclosure: Botanical Survey (for) Kealahou Parkway Extension Alternatives 10 and 11, Kailua-Kona, North Kona District, Island of Hawaii

Over a Century of
Engineering Excellence



Parsons
Brinckerhoff
Two Waterfront Plaza
Suite 220
500 Ala Moana Boulevard
Honolulu, HI 96813-4990
808-531-7054
FAX: 808-528-2368

September 24, 1993

Howard Horiuchi
Forestry Manager
Department of Land and Natural Resources
Division of Forestry & Wildlife
Hawaii Forests Wildlife Resource Management
P.O. Box 4849
Hilo, Hawaii 96720

RE: KEALAKEHE PARKWAY EIS
THREATENED AND ENDANGERED SPECIES

Dear Mr. Horiuchi:

Per my attempt to contact you by telephone on September 23rd and 24th, I am enclosing a copy of the Botanical Survey (for) Kealahou Parkway Extension Alternatives 10 and 11, Kailua-Kona, North Kona District, Island of Hawaii (August 1993) as prepared by Char & Associates. The survey includes a project map showing the two preferred alternatives that will be discussed in the draft Kealahou Parkway Environmental Impact Statement.

Please review the enclosed material and phone me at 524-5177 with the steps to proceed. We look forward to consulting with your agency to determine the presence or absence of listed and proposed threatened and/or endangered species and designated and proposed critical habitat in the Kealahou project area (50 CFR 402.12(c)).

Sincerely yours,
PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC.

Denelira M. Green
Denelira M. Green
Environmental Planner

cc: Robert Miyaskal - PBOD
David Aikin - PBOD
Doug Orlimoto - SDOT

Enclosure: Botanical Survey (for) Kealahou Parkway Extension Alternatives 10 and 11, Kailua-Kona, North Kona District, Island of Hawaii

Over a Century of
Engineering Excellence



September 30, 1993

Two Waterfront Plaza
Suite 220
500 Ala Moana Boulevard
Honolulu, HI 96813-4990
808-531-7094
Fax: 808-528-2369

Persons
Brinckerhoff

Ronald E. Bachman
Wildlife Manager
Department of Land and Natural Resources
Division of Forestry & Wildlife
Hawaii Forests Wildlife Resource Management
P.O. Box 4849
Hilo, Hawaii 96720

RE: KEALAKEHE PARKWAY EIS
THREATENED AND ENDANGERED SPECIES

Dear Mr. Bachman:

Per my telephone conversation this morning with Carol Terry, DLNR Wildlife Biologist, I am contacting you to request a letter from your office addressing the presence or absence of listed and proposed threatened and/or endangered "animal" species and designated and proposed critical habitat in the Kealahoe Parkway project area (50 CFR 402.12(c)).

I am enclosing a copy of the project map showing the two alternatives that will be discussed in the draft Kealahoe Parkway Environmental Impact Statement for your use. I have also sent a copy of the botanical survey report (Char & Associates, August 1993) to Carolyn Corn, DLNR Botanist, to assess the botanist's findings regarding threatened and/or endangered "plant" species. A copy of this report was sent to Howard Hoiuchi, Forestry Manager, in your office on September 24th.

Please review the enclosed material and phone me at 524-5177 with the steps to proceed. We look forward to consulting with your agency.

Sincerely yours,
PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC.

Deneltra M. Green
Deneltra M. Green
Environmental Planner

cc: Robert Miyaskal - PBQD
David Aikin - PBQD
Doug Oritomo - SDOT

Enclosure: Project Alignment Map - Alternatives 10 and 11

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September 30, 1993

Two Waterfront Plaza
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500 Ala Moana Boulevard
Honolulu, HI 96813-4990
808-531-7094
Fax: 808-528-2368

Persons
Brinckerhoff

Carolyn A. Corn
Botanist
Department of Land and Natural Resources
Division of Forestry & Wildlife
Forest Resource Protection
Kalaninokou
1151 Punchbowl Street, Rm. 325
Honolulu, Hawaii 96813

RE: KEALAKEHE PARKWAY EIS
THREATENED AND ENDANGERED SPECIES

Dear Ms. Corn:

Per my telephone conversation this morning with Carol Terry, DLNR Wildlife Biologist, I am contacting you to request a letter from your office addressing the presence or absence of listed and proposed threatened and/or endangered "plant" species in the Kealahoe Parkway project area (50 CFR 402.12(c)).

I am enclosing a copy of the Botanical Survey (for) Kealahoe Parkway Extension Alternatives 10 and 11, Kailua-Kona, North Kona District, Island of Hawaii (August 1993), as prepared by Char & Associates. The survey includes a project map showing the two alternatives that will be discussed in the draft Kealahoe Parkway Environmental Impact Statement.

Please review the enclosed material and phone me at 524-5177 with the steps to proceed. A copy of this report has been sent to Howard Hoiuchi, Forestry Manager, on the Big Island. We look forward to consulting with your agency.

Sincerely yours,
PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC.

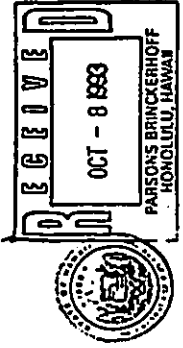
Deneltra M. Green
Deneltra M. Green
Environmental Planner

cc: Robert Miyaskal - PBQD
David Aikin - PBQD
Doug Oritomo - SDOT

Enclosure: Botanical Survey (for) Kealahoe Parkway Extension Alternatives 10 and 11,
Kailua-Kona, North Kona District, Island of Hawaii

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JOHN WILKIE
State Dept of Land



FRYAN W. JAMES, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

JOHN WILKIE
DONALD HANAUER

AGRICULTURE DEVELOPMENT PROGRAM
ADULTIC RESOURCES
BOARDS AND COMMISSIONS
CONSERVATION AND DEVELOPMENT
ENVIRONMENTAL AFFAIRS
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION PROGRAM
LAND MANAGEMENT
PLANNING AND DEVELOPMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1111 KALANIOA STREET
HONOLULU, HAWAII 96813

October 7, 1993

Ms. Deneitra M. Green
Parsons Brinckerhoff
Two Waterfront Plaza, Suite 220
500 Ala Moana Blvd.
Honolulu, Hawaii 96813-4990

Dear Ms. Green:

This is in response to your letter and Botanical Survey of Kealahke Parkway Extension, Alternatives 10 & 11, Kailua-Kona, North Kona District, island of Hawai'i, by Winona Char. I have the following comments.

1. As per your earlier phone call to me, a copy of this botanical survey should be sent to Paul Woissick and Assoc. Inc., P.O. Box 4758, Kaneohe, HI 96744, to review. He is the consultant for the Kealahke project who is familiar with rare plants, their locations, fire and plant mitigation plans, and coordinating projects.

Items that need to be addressed is the EIS are:

2. The botanical survey does not address *Capparis sandwichiensis* a U.S. Fish & Wildlife Service Candidate 2 species in the section, Alternative 10 & 11 corridors (pages 10-11). This species and *Bidens micrantha* ssp. *stenophylla*, are both candidate 2 taxa.
3. *Reynoldsia sandwicensis*, a USFWS Candidate 3C species, is mentioned in the botanical survey but the number and size of plants that would be affected by this project is not given. The largest trees of this endemic species are found in the North Kona area. All plants which existed within areas burned by fires at Puuwaava died. This species is at risk in fire prone areas.
4. A section 7 consultation with U.S. Fish & Wildlife Service for uhiuhi (*Casalpinia kavalensis*) was made for the Kealahke project. A plan to protect this endangered plant species in situ was developed as an outcome of these consultation. The uhiuhi is protected

Ms. Deneitra M. Green
Page 2
October 6, 1993

by both federal and state law. Any federal funds in this parkway extension will require conformance to federal law. Fencing, buffer zones, weeding, and fire protection are a part of this section 7 consultation.

5. Fire is a major concern for this area. In both adjacent areas (Kealahke and Kaloko) there are rare and endangered species, some not known to exist elsewhere. These occur within hundreds of yards from the alternative 10 and 11 proposed Kealahke Parkway Extensions. An EIS needs to demonstrate the project during construction and after construction will not adversely affect these species. (Many fires start along roadways in this state.)
6. Alternative 11 roadway according to the botanical survey will have less direct construction involvement with rare and endangered plant species than alternative 10 roadway, which would affect 3 to 4 species. The EIS would need to address alternative routes.

Sincerely yours,

Carolyn A. Corn
CAROLYN A. CORN
Botanist

cc: Howard Horiuchi



Parsons
Brinckerhoff
Two Waterview Plaza
Suite 220
500 Ala Moana Boulevard
Honolulu, HI 96813-4990
808-531-7094
Fax: 808-528-2368

October 11, 1993

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Paul Weissick and Associates, Inc.
P.O. Box 4758
Kaneohe, Hawaii 96744

RE: KEALAKEHE PARKWAY EIS
THREATENED AND ENDANGERED SPECIES

Dear Mr. Weissick:

Per my telephone conversation with Carolyn Corn, Botanist - Department of Land and Natural Resources, I am enclosing a copy of the Botanical Survey (for) Kealahou Parkway Extension Alternatives 10 and 11, Kailua-Kona, North Kona District, Island of Hawaii (August 1993) as prepared by Char & Associates. The survey includes a project map showing the two preferred alternatives that will be discussed in the draft Kealahou Parkway Environmental Impact Statement. In addition, I am also enclosing the October 7th letter from Ms. Corn, that details EIS requirements not addressed in the botanical report.

Please review the enclosed material and phone me at 524-5177 with the steps to proceed. We look forward to consulting with you to determine the presence or absence of listed and proposed threatened and/or endangered species and designated and proposed critical habitat in the Kealahou project area (50 CFR 402.12(c)).

Sincerely yours,
PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC.


Denise M. Green
Environmental Planner

cc: Robert Miyasaki - PBQD
David Atkin - PBQD
Doug Oimoto - SDOT

Enclosure: Botanical Survey (for) Kealahou Parkway Extension Alternatives 10 and 11,
Kailua-Kona, North Kona District, Island of Hawaii;
Department of Land and Natural Resources Response Letter

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December 16, 1993

Parsons
Brinckerhoff
100
ROAD

Parsons
Brinckerhoff
Quade &
Douglas, Inc.
Engineers
Planners
Two Waterfront Plaza
Suite 220
500 Ala Moana Boulevard
Honolulu, HI 96813
808-531-7054
Facsimile: 538-2358

Letter to USFWS
dated December 16, 1993
Page 2

Mr. Loyal Mehrhoff
U.S. Fish and Wildlife Service
500 Ala Moana Boulevard
Three Waterfront Plaza, Ste. 580
Honolulu, Hawaii 96813

RE: Kealahoe Parkway EIS
Threatened and Endangered Species
Informal Section 7 'Threatened and
Endangered Species Act' Consultation

Dear Loyal:

Per our October 22nd meeting with Margo Stahi, enclosed please find the additional information to help you determine whether formal Section 7 consultations are necessary. Please see the enclosed data which you have requested:

1. Statement of the role of federal funding (i.e., construction vs. planning);
2. Excerpt from USGS quad sheet showing project vicinity;
3. Project background, including purpose and need, project description, project setting, and summary of alternatives considered and presently preferred alternatives;
4. Preliminary engineering sketches of construction limits of Alternatives #10 and #11 (subject to change);
5. Copy of the Char & Associates Alternatives #6A and #8 botanical report and map (January 1993);
6. Copy of the revised Char & Associates Alternatives #10 and #11 botanical report (October 1993). Refer to map from draft report (August 1993) which is presently in your possession;
7. Laili'Opua Botanical Mitigation Plan - HFDC; and
8. Correspondence related to botanical issues.

Please provide to us:

- A list of threatened or endangered species which could potentially be affected by the project, and species which may be listed as threatened or endangered before construction is completed;
- Locations of threatened or endangered species in the project vicinity (an excerpt from the appropriate USGS quad sheet is provided for your use (see shaded area); and
- An indication whether formal Section 7 consultations are required, and if so, what the appropriate next steps would be.

Please note that the preliminary sketches showing the construction limits are conservative in nature, based on conceptual engineering and that the final limits of construction should be less than as shown in the sketches.

Should you desire a site visit by the DLNR/Division of Forestry and Wildlife Big Island Biologist, the U.S. FWS, Winona Char, and our office could be arranged. Please contact me at 524-5177 or by fax 545-2753 should you have any question or should you desire a site visit.

Sincerely yours,
PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC.

Deneitra M. Greer
Environmental Planner

cc: Roger Ryder - FHWA
Doug Orimoto - SDOOT
David Aikin - PBQD
Robert Miyasaki - PBQD
Keith Nakano - PBQD

Enclosures

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Office
P.O. Box 50167
Honolulu, Hawaii 96850

In reply refer to: LAM/MSS

MAR 03 1994

Ms. Deneira M. Green
Environmental Planner
Parsons, Brinckerhoff, Quade, and Douglas, Inc.
Two Waterfront Plaza
500 Ala Moana Boulevard
Honolulu, Hawaii 96813

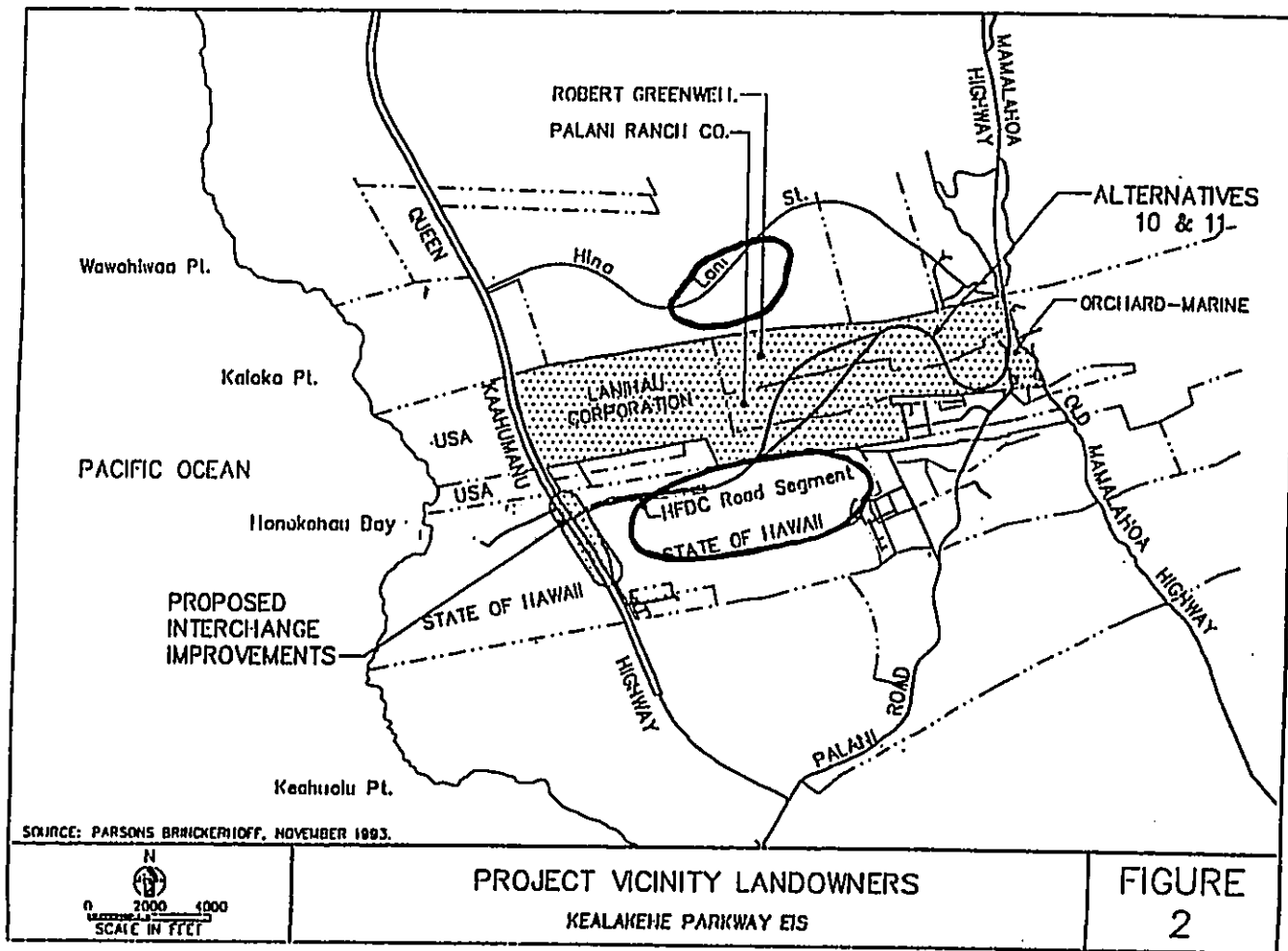
Dear Ms. Green:

1. Thank you for providing the additional information about the proposed Kealahou Parkway Extension in your letter of December 16, 1993. This information allows us to provide the following comments about the need for consultation under section 7 of the U.S. Endangered Species Act.
2. It appears that this project may affect at least one listed endangered plant species, uhiuhi (*Caesalpinia kavaensis*), and may affect other protected or candidate species. Because this project may affect an endangered species, the U.S. Federal Highway Administration should initiate formal consultation with our office to ensure that such species are adequately protected. We will contact the Federal Highway Administration to convey our concerns.
3. While the botanical surveys which accompanied your letter are adequate to address the direct effects of the proposed project, they are inadequate to address the affects of the project as a whole, which include cumulative effects. 50 CFR Part 402 (attached) defines cumulative effects as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal Action subject to consultation." Several factors point to the conclusion that the majority of the area surrounding the Parkway will be developed in the foreseeable future:
 - a. The Project Setting states that "residential development of the surrounding area is anticipated".

- b. The project is being developed to comply "with standards appropriate for urban conditions".
- c. Landowners have requested that the design of the Parkway allow for future intersections at specified locations.
- d. The project is being developed in phases with Phase I resulting in a "rural highway" without sidewalks and Phase II adding sidewalks and curbs in order to make it more appropriate for an urban setting.
- e. This project is clearly part of a larger, regional plan for the future development of large portions of the area from Kona to Keahole.

4. The effects of this project will extend significantly beyond the footprint of the proposed Parkway, consequently, botanical surveys should encompass those areas surrounding the Parkway. Specifically, this refers to those areas which the Parkway or access to the Parkway will likely promote future development. This is particularly important for this project, since it is sandwiched between two areas which have already been identified as having important concentrations of endangered plants (see attached map). In the absence of information on this particular project, we would use information from adjacent areas to predict the occurrence of protected species within the project area. Rare and endangered plants which occur adjacent to this property and which should be specifically addressed are shown below. Those species which have a formal status of "endangered" are legally subject to consultation, proposed species are subject to conferencing with the Service, and while candidate species do not legally need to be included in this consultation, there is a strong likelihood that at least two of these candidate species may be listed in the foreseeable future (*Neraudia ovata* and *Pleomele hawaiiensis*). A third candidate, *Bidens micrantha* var. *stenophylla*, is also actively being reviewed for potential listing. In our opinion, it would be in your best interest to consider these species during the planning phase, rather than to wait and reinitiate consultation if they are listed as endangered at a later date.

Species	Common Name	Status
<i>Caesalpinia kavaensis</i>	uhiuhi	Endangered
<i>Nothocestrum breviflorum</i>	aiea	Proposed Endangered
<i>Mariscus fauerei</i>	none	Proposed Endangered
<i>Isodendron pyriform</i>	aupaka	Proposed Endangered
<i>Pleomele hawaiiensis</i>	hala pepe	Candidate
<i>Neraudia ovata</i>	none	Candidate
<i>Bidens micrantha</i> var. <i>stenophylla</i>	akoko	Candidate
<i>Capparis sandwicheana</i>	pilo	Candidate



5. Thank you for your interest in protecting endangered species and we look forward to working with you as you continue your planning efforts. If you would like, biologists from my office are available to assist you and your consultants in defining those areas which are particularly important for botanical surveys. Please contact either Mr. Loyal Mehrhoff, Listing Branch Chief, at 808/541-3441 or Ms. Margo Stahl, Branch Chief for Interagency Cooperation, at 808/541-2749 should you have any questions.

Sincerely,

Robert P. Smith

Robert P. Smith
Field Supervisor
Pacific Islands Office

cc: Mr. Michael Buck,
Division of Forestry and Wildlife
Mr. Doug Orimoto,
Hawaii Department of Transportation

Enclosures

FIGURE
2



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Office
P.O. Box 50167
Honolulu, Hawaii 96850

In Reply Refer To: MSS

Mr. Michael A. Cook
Division Administrator
U.S. Department of Transportation
Federal Highways Administration
P.O. Box 50206
Honolulu, Hawaii 96850

MAR 03 1984

Dear Mr. Cook:

This letter serves to introduce the U.S. Fish and Wildlife Service (Service) to you with respect to the Kealahou Parkway Extension Project which we believe requires formal consultation under section 7 of the Endangered Species Act (16 U.S.C. 1531 et seq.; 87 Stat. 884), as amended. Members of my staff have been meeting informally with the consultants on the project, Parsons, Brinckerhoff, Quade, and Douglas, Inc., as well as with the State Highway Planning Office.

It appears that this project may affect at least one listed endangered plant species, whiuhu (*Caesalpinia kavalensis*), and possibly other protected or candidate species.

According to 50 CFR Part 402.08 (copy attached), the federal agency conducting the section 7 consultation may designate a non-federal representative to represent it for the informal consultation and biological assessment procedures. Your agency must still review the work products of your designated representative and independently reach your own conclusions. Your agency cannot delegate its duty to review, analyze, and formally consult with the Service. We request that you notify us in writing as to the designation of a non-federal representative, should you choose to designate one.

We suggest that you initiate formal consultation when you so desire by providing the Service with a written request which should include, but not necessarily be limited to, the following:

1. A description of the action to be considered;
2. A description of the specific area that may be affected by the action;
3. A description of any listed species or critical habitat that may be affected by the action;

4. A description of the manner in which the action may affect any listed species or critical habitat and an analysis of any cumulative effects;
5. Relevant reports, including any environmental impact statements, environmental assessment, or biological assessment prepared; and
6. Any other relevant available information on the action, the affected listed species, or critical habitat.

Formal consultation will conclude within 90 days after its initiation, unless extended. Within 45 days after concluding formal consultation, the Service shall deliver a biological opinion to your agency.

Thank you for the opportunity to work with you on the planning of the Kealahou Parkway Extension Project. For further information please contact either Ms. Margo Stahl, Branch Chief for Interagency Cooperation, at 808\541-2749 or Mr. Loyal Mehrhoff, Listing Branch Chief at 808\541-3441.

Sincerely,

Brook Hayes

for Robert P. Smith
Field Supervisor
Pacific Islands Office

attachment

cc: Mr. Doug Orimoto
State Highway Planning Office
600 Kapiolani Blvd. Rm. 301
Honolulu, Hawaii 96813

Ms. Deneitra Green
Parsons, Brinckerhoff, Quade,
and Douglas, Inc.
Two Waterfront Plaza
500 Ala Moana Blvd.
Honolulu, Hawaii 96813

Mr. Mike Buck
Division of Forestry and Wildlife
Department of Land and Natural Resources
1151 Punchbowl Street
Honolulu, Hawaii



United States Department of the Interior

WILDLIFE SERVICE

Pacific Islands Ecological
300 Ala Moana Blvd, Room 6307
P.O. Box 50167
Honolulu, Hawaii 96850

7) Will future Federal, State, or County roads be into the road extension?
We appreciate your concern for endangered species and we look forward to receiving your response to the inquiries listed above as well as a copy of the Draft Environmental Impact Statement upon its completion. If you have any questions, please contact our Branch Chief for Interagency Cooperation, Ms. Margo Stahl, at 808/541-2749 or Botanist Loyal Mehlhoff at 808/541-3443.

Sincerely,

Brooks Harper
Brooks Harper
Field Supervisor
Ecological Services

Project #	Transmittal memo 7891	Page #	2
To	Mr. Kenneth A. Cook	From	Pat P. King
By	HWY-P	Date	1/10/84
File #	(80)587-1787	File #	(FOI) 51-2700
		File #	(FOI) 51-2704

In Reply Refer To: 1-2-85-F-06; OLB

Mr. Michael A. Cook
Division Administrator
U.S. Department of Transportation
Federal Highway Administration
Region Nine
Hawaii Division
Box 60206
Honolulu, Hawaii 96850

Dear Mr. Cook:

This acknowledges the U.S. Fish and Wildlife Service's (Service) January 12, 1984, receipt of your January 10, 1984, request for initiation of formal consultation as directed by section 7 of the Endangered Species Act (Interagency Cooperation). The specific action under review in this consultation is the proposed Kealahou Parkway Extension Project in the North Kona District on the island of Hawaii. The Service would like to offer the following comments:

The area to be impacted by the proposed construction activities extends eastward from Maneleha Highway/Palms Road to the intersection with the lower portion of Kealahou Parkway. The Uluhi (*Cassidix levidensis*), which is federally listed as endangered and the Alo'alo'alo (*Bidens micrantha* ssp. *clanophylla*), which is a category 1 candidate species, both occur within the project area.

We have assigned log number 1-2-85-F-05 to this consultation. However, the September 1984 Biological Assessment is deficient in a number of areas and we require additional information before we can initiate the formal consultation process. Once the necessary information has been received and formal section 7 consultation has been initiated, the Service will complete consultation within 90 days and issue its biological opinion within 45 days thereafter. The following information is required and needs to be included in the biological assessment submitted:

- 1) A complete description of the project.
- 2) The project description must state (and commit to) specific compensations, avoidance, or land use restrictions for each alternative that may affect endangered species.
- 3) A statement of the projected use of the road extension.
- 4) Have the adjacent homeowners asked to be tied-in to the road extension?
- 5) Will the project allow for a proper tie-in?
- 6) How will the road fit into the overall traffic pattern?



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Pacific Islands Ecoregion
300 Ala Moana Blvd., Room 3108
P.O. Box 50088
Honolulu, HI 96850

In Reply Refer To: 1-2-95-F-06; MSS/MMB

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

FEB 18 1996

Dear Mr. Wong:

The U.S. Fish and Wildlife Service (Service) has reviewed the project plans to complete construction of the Kealahoe Parkway to become a 4.0 kilometer (2.5 mile) four-lane divided urban arterial that would connect Mamalahoa Highway and Queen Kaahumanu Highway on the island of Hawaii. This document represents the Service's biological opinion on the effects of that action in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). This Biological Opinion was prepared using the following information: 1) Kealahoe Parkway, Mamalahoa Highway to Queen Kaahumanu Highway, North Kona, Hawaii Draft Environmental Impact Statement dated July, 1995; 2) Project modifications as described in letter to the Service dated November 27, 1995; 3) Technical / Agency Draft Big Island Plant Cluster Recovery Plan, U.S. Fish and Wildlife Service, October, 1995; 4) Recovery Plan for *Caesalpinia kavaiensis* and *Kokia drynarioides*, June 1994; 5) Biological Assessment, Kealahoe Parkway Extension, by Winona Char, September, 1994; 6) the biological literature (see Literature Cited section at the end of document); and 7) from individuals knowledgeable about the species and the project. Our log number for this consultation is 1-2-95-F-06. Copies of pertinent materials and documentation are maintained in an administrative record in the Service's office in Honolulu, Hawaii.

The Kealahoe parkway extension project would address system linkage needs; existing transportation demand and capacity needs; safety needs; and economic development needs. It would have impacts on land use, socioeconomic conditions, noise levels, traffic conditions, rare and endangered species, and archaeological resources. The species of concern are the federally endangered palm *Pritchardia affinis* (Ioulu), the federally endangered tree *Caesalpinia kavaiensis* (Iuhiuhi), and the candidate species of *Bidens micrantha* ssp. *ctenophylla* (ko'oko'ala), which occur within the project area. *Bidens micrantha* ssp. *ctenophylla*, although not officially listed, is a candidate for listing and is included in this consultation at the request of your agency. The Service is concerned with the potential impacts of the project from direct loss as well as from habitat destruction in the form of fragmentation, fire potential, and increased human presence.

Other species of rare plants, including the proposed endangered *Pleomele hawaiiensis* (Ihala pepe), the endangered *Nerardium ovata* and *Nothocestrum breviflorum* ("aiea), and the species of concern *Cephaelis sandowichiana* (Iuapilo), are found on surrounding lands but are not likely to be adversely affected by the road extension project. These species are not subject to this consultation.

Consultation History

Your initial request for formal consultation was received by the Service on January 12, 1995. In our letter dated January 26, 1995, we indicated that the Service found the September, 1994, Biological Assessment to be deficient in a number of areas and we requested additional information before initiating the formal consultation. The Service received your revised biological assessment contained in the draft Environmental Impact Statement dated July 20, 1995. In a letter to you dated October 24, 1995, we requested an extension of formal consultation and scheduled another meeting to discuss outstanding issues associated with the project. A meeting was held on November 1, 1995, to discuss Service comments on the draft EIS and listed species issues. The Service indicated that it needed additional information to complete the consultation process. In a letter to the Service dated November 27, 1995, you provided us with the necessary information to complete our biological opinion. Unfortunately, a government furlough followed the receipt of your letter and we were unable to complete the biological opinion until February, 1996.

Biological Opinion

It is the opinion of the Service that the proposed project is not likely to jeopardize the continued existence of *Pritchardia affinis*, *Caesalpinia kavaiensis*, and *Bidens micrantha* ssp. *ctenophylla*.

Description of the Proposed Action

The Federal Highway Administration proposes a project consisting of four elements:

- * a four-lane arterial that would extend between Mamalahoa Highway and the portion of Kealahoe Parkway presently under construction within the Village of La'i Opua;
- * a construction detour road at the eastern (mauka) terminus of Kealahoe Parkway;
- * improvements to the existing and future intersections of Palani Road, Old Mamalahoa Highway, Mamalahoa Highway and Kealahoe Parkway; and
- * at-grade improvements to the intersection of Queen Kaahumanu Highway and Kealahoe Parkway.

The detour road would maintain traffic flow during the construction of the eastern terminus of the project. After completion of the project, through traffic will travel on Kealahoe Parkway and residential access to a small number of houses at the Parkway's eastern (mauka) terminus will be permanently rerouted to the detour road.

The Federal Highway Administration shall implement the following specific measures to minimize adverse impacts to the above-mentioned species:

1. A translocation and seed collection plan will be developed and implemented to mitigate impacts to the endangered Ioulu and Iuhihi trees as outlined in the November 27, 1995 project modification description.
2. A fire plan will be developed and implemented to reduce the potential loss of species and habitat in the event of a fire. The plan will indicate:
 - * responsible agency
 - * point of contact in case of fire

- * appropriate chain of command
- * identification of those responsible for extinguishing fires
- * location of those listed and candidate species requiring protection
- * duration of the plan.

The fire plan will be distributed to various fire stations throughout the area. In addition, roadway signage will be posted to alert drivers of potential fire hazards. The plan will be implemented during construction and will transition into the post-construction phase.

3. To minimize impacts to seabirds transiting through the project area at night, street light luminaires will be designed to reduce glare and to shield light from the migrating birds. If possible, the FHWA will use The Newell's Sheatwater Light Attraction Problem, A Guide for Architects, Planners, and Resort Managers in designing the luminaires.

Biology and Population Status of the Species

Historically, *Pritchardia affinis* (loulou) was found only on the island of Hawaii in the Kohala Mountains and along the western and southeastern coasts. Today, scattered individuals of the species can be found throughout much of the historically known coastal range at Kiholo, at Kukio, near Palani Road, on Alii Drive in Kailua, in Captain Cook, at Hookena, at Miloli, and at Punahoa. Most plants grow within areas of human habitation or development, and the palms may have been cultivated by Hawaiians or others rather than having occurred in these areas naturally. There are an estimated 50 to 65 known individuals at 8 or more localities along the coast on privately and State-owned land (Hawaii Heritage Program (HHP) 1991:1 to 1991:6; Norman Bezona, Hawaii Cooperative Extension Service, Bien Meilleur, Amy Greenwell Ethnobotanical Garden, and P. Weisich, pers. comm., 1992). *Pritchardia affinis* was listed as endangered on March 4, 1994 (59 FR 10305). Critical habitat was determined to be not prudent at that time, because the publication of precise maps and descriptions of critical habitat in the *Federal Register* would increase the degree of threat to these plants from take and vandalism (59 FR 10305).

Historically *Caesalpinia kavaensis* (uhihi) was known to have occurred on the islands of Hawaii, Oahu, Maui, and Kauai. It has declined to four populations totaling 50 individuals on Hawaii, 11 individuals in 3 populations on Oahu, possibly 2 individuals on Kauai, and a recently discovered individual on Lanai (U.S. Fish and Wildlife Service (Service) 1994). *Caesalpinia kavaensis* was listed as endangered on July 8, 1986 (51 FR 24672). Critical habitat was determined to be not prudent at that time, because the publication of precise maps and descriptions of critical habitat in the *Federal Register* would increase the degree of threat to these plants from take and vandalism, especially since overcollection is a threat to this species (51 FR 24672).

Bidens micrantha ssp. *ctenophylla* (ko'oko'o) was historically known from at least five locations on the north and west slopes of Hualalai, on the island of Hawaii (Degener 1932; HHP 1992a to 1992d). Currently this subspecies is known from four populations totaling approximately 5,000 individuals: Pou Anahulu, Kaupulehu, Kaioko, and Kealeke (Char 1989; HHP 1992a to 1992d, Hawaii Plant Conservation Center (HPPCC) 1991). *Bidens micrantha* ssp. *ctenophylla* is considered a candidate species. A candidate species is one for which the Service has sufficient data available to proceed with a proposal to list as endangered or threatened. Currently, the Service is under a moratorium from Congress on any further listing. However, Service will continue to track the status and work with other agencies, organizations, and private landowners for the protection of this species, and will proceed with the listing process once the moratorium is lifted.

Environmental Baseline

The environmental baseline is an analysis of the effects of past and ongoing human and natural factors leading to the current status of the species or its habitat and ecosystem.

Pritchardia affinis typically grows in coastal mesic forests at coastal sites or in guiches further inland at elevations between sea level and 2,000 ft (0 and 610 m), possibly associated with brackish water (HHP 1991:2; Read and Hodel 1990; C. Corn, pers. comm., 1992). Native associated species of this loulou are unknown, since all trees are found in cultivated zones, which have long been cleared of their native cover (B. Meilleur, pers. comm., 1992). The major threats to *Pritchardia affinis* are predation on seeds by feral rats (*Rattus rattus*), development of land where individuals grow, and stochastic extinction and/or reduced reproductive vigor due to the small number of existing individuals. In the past, the species' natural habitat was cleared for agriculture and housing, and feral pigs (*Sus scrofa*) destroyed seedlings of the species, preventing regeneration (Beccati and Rock 1921; Hult 1980; C. Corn, pers. comm., 1992).

Sites occupied by *Caesalpinia kavaensis* are dry open forests on rough weathered (unweathered on Hawaii) lava on steep slopes, ranging in elevation from 250 ft (76 m) to 3,000 ft (910 m). Annual rainfall varies from 30 in. (75 cm) to 65 in. (152 cm) and is evenly distributed throughout the year. Associated species include *Erythrina sandwicensis* (wilwili), *Chenopodium oahuense* ('aweoweo), *Diospyros sandwicensis* (lamai), the endangered *Colubina oppositifolia* (kaulua), and the endangered *Kokia drynarioides* (koki'oi) (51 FR 24672, Service 1994). Some isolated trees produce viable seed, indicating that *Caesalpinia kavaensis* has the capability to self-pollinate, and some wild and cultivated individuals produce copious amounts of viable seeds. The dense wood indicates this is probably a very slow growing species (Service 1994).

The most probable cause of the decline of *Caesalpinia kavaensis* is grazing by cattle, goats, and other herbivores. Other current threats to the species include competition from introduced plants species, especially *Pennisetum setaceum* (fountain grass) (Lamouroux 1982). Fountain grass is particularly detrimental to Hawaii's dry forests because it is able to invade areas not usually prone to fires, and increases the likelihood of fires (Cuddihy and Stone 1990; O'Connor 1990; Smith 1985). Because this species occurs in very dry habitats, fire is an additional threat. The alien insect black twig borer (*Xylosandrus compactus*) attacks and may kill *Caesalpinia kavaensis* seedlings. Seed predation by rats is an additional threat to the species, as the seeds have been found in rat burrows (Lamouroux 1982). The dark, dense wood was used by ancient Hawaiians for spears and tools and is still valued and used today (P. Simmons, pers. comm. 1995). Since the numbers of individuals within populations is so low, this species is at risk of extinction due to random natural events and possibly low reproductive vigor.

Typical habitat for *Bidens micrantha* ssp. *ctenophylla* is highly degraded dry forest between 492 ft and 3280 ft (150 m and 1000 m). Associated native species include *Metrosideros polymorpha* ('ohi'ahi), *Canthium odoratum* (laha'e'eh), *Diospyros sandwicensis* (lamai), *Capparis sandwicensis* (puapilo), and *Reynoldsia sandwicensis* ('o'aha). Threats to *Bidens micrantha* ssp. *ctenophylla* include introduced plant species such as *Schinus terebinthifolius* (Christmas berry), *Grevillea robusta* (silk oak), and *Pennisetum setaceum* (fountain grass); fire; and clearing (Char 1994, HPPCC 1991).

Effects of the Action on Listed Species

This section includes an analysis describing direct and indirect effects on the species from the proposed action and its interrelated and interdependent activities.

The two *Pritchardia affinis* individuals are found within the Palani Road corridor of the action area, which is included in both Alternative 10 and Alternative 11 (U.S. Department of Transportation, Federal Highways Administration (FHWA) 1995). The larger palm (about 50 ft (15 m)) is located on the grounds of the Orchard Marine Plant Nursery, near the building. The smaller palm (about 30 ft (9 m)) is located immediately down slope (west) of the existing Palani Road. These two individuals were probably planted (59 FR 10305). The larger palm in the Orchard Marine Plant Nursery will probably not be directly affected by the parkway extension. The indirect effects will be increased likelihood of fire and increased access by the public. The smaller palm west of the existing Palani Road will be directly affected during the construction process. The effect of the construction and maintenance of the parkway extension will be mitigated through the proposed translocation plan and fire plan (Wong, *in litt.*, November 28, 1995).

Two of the approximately 50 individuals of *Caesalpinia kavaiensis* on the island of Hawaii are found within the project area. They are located within 100 feet of Alternative 10, near the point where Alternative 10 and Alternative 11 separate (FHWA 1995). The two individuals of *Caesalpinia kavaiensis* will be indirectly affected by the construction and existence of the parkway extension under either alternative. The parkway extension will increase the risk of fire to the area, with the increase in public access. Because these two individuals occur so close to both alternatives, they are at risk from any fire in the area.

The largest portion of the Kealahoe population of *Bidens micrantha* ssp. *ctenophylla* is within the corridor of Alternative 10 (Char 1994). If Alternative 10 is chosen, almost all of this subpopulation will be destroyed. Alternative 11 will not destroy the subpopulation.

Cumulative Impacts

Cumulative effects are those impacts of future State and private actions affecting endangered or threatened species or critical habitat that are reasonably certain to occur within the area of the Federal action subject to consultation. Future Federal actions will be subject to the consultation requirements established in section 7 of the Act, and therefore, are not considered cumulative to the proposed action. However, the Service believes that the completion of the roadway alignment will ultimately lead to increased development in the area which will likely have significant impacts to listed species. Future tie-ins to the Kealahoe Parkway are anticipated to have adverse effects by increasing the cumulative impacts.

Conclusion

Nevertheless, based upon the information available, the Service believes that implementation of either alternative 10 or 11 of the proposed project described above will not jeopardize the continued existence of *Pritchardia affinis*, *Caesalpinia kavaiensis*, and *Bidens micrantha* ssp. *ctenophylla*. We present this conclusion for the following reasons:

1. A fire plan will be in place before construction is started, which will include the points outlined in the modifications to the project.
2. The construction operation will be undertaken in discrete phases. Human disturbance can be kept to a minimum.

3. Selection of Alternative 11 will help to minimize habitat destruction.

4. Germplasm of affected endangered plants will be preserved, following the guidelines provided by a knowledgeable botanist and reviewed by the Service prior to implementation.

5. Transplantation of affected endangered plants will be attempted and is likely to be successful. The Service will review the transplantation plan prior to implementation.

6. Increased knowledge gained from (4) and (5) above may help minimize long-term cumulative impacts.

Section 7(b)(4) and 7(b)(2) of the ESA do not apply to the incidental take of listed plant species. However, protection of listed plants is provided to the extent that the ESA requires a Federal permit for removal or reduction to possession of endangered plants from areas under Federal jurisdiction, or for any action that would remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any State law.

Conservation Recommendations

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. The term "conservation recommendations" has been defined as Service suggestions regarding discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information. The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of the agency's section 7(a)(1) responsibility for these species.

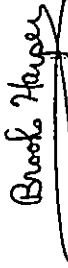
1. The Service recommends that the FHWA facilitate regeneration of habitat along State right-of-way where vegetation was removed by replanting with native plant species such as *Dodonaea viscosa* ('a'ali'i), *Canthium odoratum* (alaha'e), *Myoporum sandwicense* (maio), *Bidens micrantha* ssp. *ctenophylla* (ko'oko'olau), and *Capparis sandwicensis* (puapilo).
2. The Service recommends the control of introduced plant species, such as fountain grass, that are associated with the increased likelihood of fire in the area, through the use of weeding and judicious herbicide use.
3. The Service recommends that assistance be provided by the FHWA in the recovery of *Caesalpinia kavaiensis* (uhuhi). The State is planning an uhihi preserve as part of the Kealahoe Governor's low income housing development, to which the FHWA can contribute within their specified mandates.

4. The Service recommends that the FHWA expand its translocation efforts to include *Bidens micrantha* ssp. *ctenophylla*. This subspecies is a candidate for listing, and assisting the State in the protection and augmentation of the *Bidens micrantha* ssp. *ctenophylla* within the State's proposed uhihi preserve may eliminate the need for the Service to consider listing this species.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

This concludes formal consultation on the proposed Kealahou parkway extension. Pursuant to 50 CFR 402.16, reinstitution of formal consultation is required if the action is significantly modified in a manner not discussed above, if new information becomes available on listed species, or a new species is listed or critical habitat designated that may be affected by the action. Any questions or comments should be directed to the Chief of the Interagency Cooperation Branch, Margo Stahl, or Fish and Wildlife Biologist Marie Bruegmann of my staff at (808)541-3441.

Sincerely,



Brooks Harper
Field Supervisor
Ecological Services

cc: Rich Hill, RO:
Mr. Doug Orimoto: Hawaii DOT, HWY-PA
Parsons Brinkerhoff Quade & Douglas, Inc.

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SEP 26 1996



United States Department of the Interior

FISH AND WILDLIFE SERVICE

PACIFIC ISLANDS Ecoregion
300 ALA MOANA BOULEVARD, ROOM 3108
BOX 50088
HONOLULU, HAWAII 96850
PHONE: (808) 541-3441 FAX: (808) 541-3470

SEP 26 1996

In Reply Refer To: I-2-95-F-06; MSS/JMB

Mr. Jason Yazawa
Parsons Brinkerhoff Quade & Douglas, Inc.
Pacific Tower, Suite 3000
1001 Bishop Street
Honolulu, Hawaii 96813

Dear Mr. Yazawa:

The Fish and Wildlife Service (Service) has received your September 17, 1996 facsimile (fax) requesting additional information on listed species in the area of the proposed Kealahou Parkway. That fax included comments on the pre-final Environmental Impact Statement (EIS) from the Federal Highway Administration. This letter addresses comments #31, #32 and #33.

Comments #31 and #32 asked whether additional species in the project area had been Federally listed as endangered or threatened or had otherwise changed status. Following is a table showing the current status of the plants noted in our original species letter dated March 3, 1994.

Species	Common Name	Status
<i>Pritchardia affinis</i>	loulou	Endangered*
<i>Caesalpinia kavaiensis</i>	uhiuhi	Endangered
<i>Nothocestrum breviflorum</i>	'aiea	Endangered
<i>Mariscus fauriei</i>	---	Endangered
<i>Isodendron pyrifolium</i>	aupaka	Endangered
<i>Pleomele havaiensis</i>	hala pepe	Proposed Endangered
<i>Neraudia ovata</i>	---	Proposed Endangered
<i>Bidens micrantha</i> var. <i>stenophylla</i>	ko'oko'olau	Candidate
<i>Capparis sandwichtiana</i>	puapilo	Species of Concern

* *Pritchardia affinis* was not included in the original species letter, but was included in the section 7 consultation after an extension of the project area included this species.

Both *Pleomele havaiensis* and *Neraudia ovata* are in the process of being listed at this time. No additional species in the area have become candidates for listing.

In our biological opinion dated February 16, 1996, we stated in paragraph 3 that several of these species were found on lands surrounding the project but were not likely to be adversely affected by the proposed project. Not mentioned in that paragraph, but also not likely to be adversely affected, are the endangered *Mariscus fauriei* and *Isodendron pyrifolium* (aupaka), referred to in comment #33. These species were not subject to the section 7 consultation because of their lack of proximity to the proposed project.

Thank you for the opportunity to clarify these points prior to finalization of the EIS. Any questions or comments may be directed to Ms. Margo Stahl, Interagency Cooperation Program Leader, or Fish and Wildlife Biologist Marie Brueggemann at (808) 541-3441.

Sincerely,

Brooks Harper
Brooks Harper
Field Supervisor
Ecological Services

cc: Abraham Wong, FHIWA
Rich Hill, RO
Doug Orimoto, Hawaii DOT





United States Department of the Interior

FISH AND WILDLIFE SERVICE

Pacific Islands Ecoregion
300 Ala Moana Blvd, Room 3108
P.O. Box 50088
Honolulu, HI 96850

phone: 808-541-3441; fax: 808-541-3470

RECEIVED

DEC 19 1997

HAWAII OFFICE

In Reply Refer To: 1-2-95-F-06 (0-0-0)

NOV 17 1997

Mr. Pat V. Phung, P.E.
Transportation Engineer
U.S. Department of Transportation
Federal Highways Administration
Hawaii Division
300 Ala Moana Boulevard, Room 3202
Honolulu, Hawaii 96850

Dear Mr. Phung:

The Fish and Wildlife Service (Service) has received your October 24, 1997, letter requesting additional information on listed species in the area of the proposed Kealahou Parkway. That letter included a second set of comments on the pre-final Environmental Impact Statement (EIS) from your Region Nine office. This letter addresses comments #15, #16, and #17.

Comments #15 and #16 ask whether additional species have been found in the project area or if the status of any species previously known from the project area has changed. Following is a table showing the current status of the plants noted in our original species letter dated March 3, 1994, or in the follow-up letter dated September 26, 1996.

Species	Common Name	Status
<i>Prickardia affinis</i>	louhi	Endangered
<i>Casolpina kawaiensis</i>	uhuhi	Endangered
<i>Nothocestrum breviflorum</i>	'aia	Endangered
<i>Marsax saurici</i>	(no common name)	Endangered
<i>Isodendron pyrrolitum</i>	zupa'a	Endangered
<i>Pleomele hawaiiensis</i>	hala pepe	Endangered
<i>Nerandia ovata</i>	(no common name)	Endangered
<i>Bidens micrantha</i> ssp. <i>atenophylla</i>	ko'oko'olau	Candidate
<i>Capparis sandwicheana</i>	puapilo	Species of Concern

Both *Pleomele hawaiiensis* and *Nerandia ovata* were listed on October 10, 1996, as you noted in your letter. Neither of these two species occur within the project area, but *Pleomele hawaiiensis* is found in immediately adjacent areas. If the fire plan is developed as discussed in the Service's Biological Opinion, dated February 16, 1996, these adjacent populations will not be adversely impacted.

Comment #17 asks whether the project will cause any impacts to the two listed sea birds (*Pterodroma phaeopygia sandwicheana*, dark-rumped petrel, Endangered and *Puffinus curicularis*, Newell's shearwater, Threatened) and one candidate sea bird (*Oceanodroma castro cryptoleuca*, Band-rumped storm petrel). There are no known records of any of these species in the project area, so they were not included in the Service's Biological Opinion, dated February 16, 1996.

Thank you for the opportunity to clarify these points prior to the finalization of the EIS. If you have any questions or comments, please contact Ms. Margo Stahl, Interagency Cooperation Program Leader, or Fish and Wildlife Biologist Marie Brueggmann at (808) 541-3441.

Sincerely,

Margo Stahl
Margo Stahl
Field Supervisor
Ecological Services

cc: Abraham Wong, FHWA

Appendix B.2 - Proposed Endangered and Threatened Species

NEWS RELEASE

U.S. FISH AND WILDLIFE SERVICE - REGION 1
Pacific Islands Ecoregion
300 Ala Moana Blvd., Room 3106
Box 50088
Honolulu, Hawaii 96850

For Release: September 25, 1995

Contact: Barbara Masfield - 808/541-2749 or 722-2594

PIE-95-03

32 Hawaiian Native Plants Proposed for Addition to Endangered Species List

Thirty-two rare native plant species that exist only on the islands of Hawaii and Kauai are being proposed for addition to the federal threatened and endangered species list by the U.S. Fish and Wildlife Service. Two species, known in Hawaii as *hau huahwi*, have completely disappeared in the wild and exist only in private gardens and as cultivated individuals planted back into their original habitat. Many other species have five or fewer populations, and several are represented by fewer than 10 remaining individual plants. Two plants are proposed as threatened species; the remaining are proposed for endangered status.

The plants proposed for listing are scattered across the two islands at varying elevations and in differing vegetation and climate zones, but they share in common many of the same threats to their existence. According to the Fish and Wildlife Service, competition from introduced plant species; fire; hurricanes; landslides; habitat destruction by feral or domestic animals; agricultural, military, and residential development; and predation by cattle, goats, insects, and rats have all contributed to bringing these plants close to extinction.

"Of particular concern are those species with very few individuals remaining, because a single event such as a fire, a volcanic eruption, a hurricane, or rooting by feral pigs could quickly wipe out the species forever," said Robert P. Smith, Pacific Islands Ecoregion Manager for the Fish and Wildlife Service in Honolulu. "By adding them to the threatened and endangered species list, they will not only receive the legal protection afforded by the Endangered Species Act, but also benefit from activities aimed at restoring the species to safe population levels."

The small numbers of populations and individuals of most of these taxa increase the potential for extinction. The limited gene pool may affect the plants' ability to make seeds, or a single human-caused or natural environmental disturbance could destroy a significant percentage of the individuals or the only known population.

Native plants are important for their ecological, economic, and aesthetic values, and Hawaii's plant life is among the Nation's most unique. Native plants play an important role in the development of new crops that resist disease, insects, and drought. For example, the Hawaiian cotton (*Gossypium tomentosum*) has been bred with the agricultural strain of cotton to produce a strain that does not attract ants. This saves the cotton industry millions of dollars in the cleaning of cotton fibers prior to use.

-- more --

PIE-95-03, September 25, 1995

-2-

At least 25 percent of modern prescription drugs contain ingredients derived from plant compounds, including treatments for cancer, heart disease, and malaria, and medicines to assist in organ transplants. Plants also are being used to develop natural pesticides to replace chemicals more harmful to people and the environment.

Federal listing protects plants on Federal lands and requires agencies to consult with the Fish and Wildlife Service when federally licensed or permitted projects may affect listed species. Because Hawaii State law automatically includes federally listed species on the State threatened and endangered species list, and the State's endangered species law prohibits the destruction of imperiled plants on State and private lands, protection of listed plants also extends to nonfederal lands in Hawaii.

The two trees that are extinct in the wild, *Hibiscadelphus giffardianus* and *Hibiscadelphus hualaiensis*, survive only from cultivated material. *Hibiscadelphus giffardianus* is known only from the Bird Park area of Hawaii Volcanoes National Park. National Park Service employees have successfully reintroduced 11 trees to their native habitat. The State Division of Forestry and Wildlife has planted 24 *Hibiscadelphus hualaiensis* seedlings in the Puruaawaa area of the Big Island.

Another *Hibiscadelphus* species, *Hibiscadelphus woodii*, was first discovered in 1991 and is known only from its original site in Kauai's Kalalau Valley on State land. The four remaining trees grow on cliff walls and are in danger from rock slides. Other threats to this species are habitat degradation by feral goats and pigs, competition with alien plant species, and nectar robbing by the Japanese white-eye, an alien species of bird.

Only a single population of *Labordia imbiliza* var. *wahiaensis* survives today, located on private land in a drainage of the Waiahua Mountains of Kauai. More than 100 plants were originally known, but Hurricane Iniki reduced the population to between 20 and 30 individuals. The primary threats to the species are habitat degradation by pigs, trampling by humans, and competition with the alien plant strawberry guava.

Phyllostegia knudsenii, a perennial mint, was historically known only from the original sample collected in the 1800s. In 1993, one individual was rediscovered at a single location in Koaie Canyon on State-owned land. Because only a single individual is known, this species is particularly vulnerable to extinction. Other major threats to *Phyllostegia knudsenii* are habitat degradation by pigs and goats and competition with alien plants.

A single population of *Pritchardia viscosa*, a short palm with silvery-gray undersides of the leaves, remains on State land, and it contains just three individuals. This species is at severe risk of extinction from hurricanes; Hurricane Iniki destroyed half the population in 1992. Additional threats to *Pritchardia viscosa* are fruit predation by rats and competition with alien plants such as Hilo grass.

Of the more than 1,500 U.S. and foreign species that are listed as endangered or threatened, the largest category includes plants -- 529 species are protected. Recovery strategies for listed plants often include habitat restoration and establishing new populations through propagation and transplantation.

These proposed additions to the threatened and endangered species list were published in two separate rules published in the *Federal Register* on September 25, 1995. Public comments will be accepted until November 24, 1995, and should be sent to Brooks Harper, Field Supervisor, Pacific Islands Office, U.S. Fish and Wildlife Service, 300 Ala Moana Boulevard, Room 3108, Box 50088, Honolulu, Hawaii 96850.

-- more --

NEWS RELEASE

U.S. FISH AND WILDLIFE SERVICE - REGION 1
 Pacific Islands Ecoregion
 300 Ala Moana Blvd., Room 3166
 BSE 5088
 Honolulu, Hawaii 96850

For Release: October 3, 1995
 Contact: Barbara Maxwell - 808/541-2749 or 722-2594
 PIE-95-07

42 Hawaiian Plants Proposed for Listing as Threatened, Endangered Species

With only a few of their kind known to exist in the wild, forty-two additional native plant species scattered throughout the Hawaiian Islands would be added to the threatened and endangered species list under three proposals published by the U.S. Fish and Wildlife Service today. Only one of the species would be listed as threatened; the remaining 41 species are proposed for endangered status, with many known from only five or fewer populations.

The plants are found on one or more islands throughout the Hawaiian archipelago, specifically Kure, Midway, Laysan, Nihoa, Kauai, Oahu, Molokai, Lanai, Maui, and Hawaii. They face a multitude of threats including habitat degradation; predation by pigs, goats, deer, and rats; fires; landslides; and competition from alien plants such as Koster's curse, blackberry, strawberry guava, Christmas berry, and Maui pansywort.

If these plants are listed as threatened and endangered species, recovery plans identifying steps to be taken to overcome these threats will be developed and implemented. Recovery strategies for listed plants include fencing populations at risk from predation or trampling, various means of habitat restoration, and establishing new populations through propagation and transplantation.

A variety of public and private partners are aiding in recovering Hawaii's listed plants, including many of the botanical gardens found in the State. The U.S. Army is working with The Nature Conservancy of Hawaii to develop management plans for the populations of eight proposed species that occur on lands owned or leased by the Army. The U.S. Navy is developing a management plan that will include several of the proposed species.

Some of the most unusual plants included in the listing proposals are three species that until recently were considered to be extinct. *Eragrostis forbesii* is a perennial member of the grass family rediscovered in 1991 by botanist Joel Lau of The Nature Conservancy of Hawaii. It is known from only six plants in four populations on Oahu and County of Honolulu and State lands in Oahu's Waianae Mountains. Threats to this species are habitat degradation by feral pigs and goats, competition with alien plant species, and trampling by hikers.

Lobelia monostachya, a prostrate shrub in the bellflower family, was rediscovered by Lau in the Waialeale Valley area of Oahu in 1994. Only eight plants are known from one population on State land. The primary threats to this species are predation by rats and competition with several alien plant species.

—FWS—

50-1090-110 52:6 96.51 RHR 075145-508:11 7-11-1995 2 14:14 30

PIE-95-03, September 25, 1995

-3-

Plants proposed for listing (all as endangered species) in the Big Island package are:

Scientific Name	Common Name	Plant Type	Est. # of Plants
<i>Cleomonia drepanomorphia</i>	oha wa	Tree	13-20
<i>Cyanea platyphylla</i>	haha	Shrub	7
<i>Hibiscadelphus girardinianus</i>	hau kuahwi	Tree	11
<i>Hibiscadelphus huaihaiensis</i>	hau kuahwi	Tree	24
<i>Melicope zahabuackneri</i>	aban	Tree	30-35
<i>Nerudia ovata</i>	None	Shrub	2
<i>Phyllostegia racemosa</i>	kiponapona	Perennial vine	25-45
<i>Phyllostegia velutina</i>	None	Perennial vine	25-50
<i>Phyllostegia warshaueri</i>	None	Perennial vine	1
<i>Pisonia hawaiiensis</i>	hala pepe	Tree	250-300
<i>Pritchardia schottaueri</i>	loulu	Tree	12
<i>Scyros alba</i>	'anunu	Annual vine	21
<i>Zinniaefolium opeolatum</i> var. <i>lomentosum</i>	ae	Tree	24

Kauai plants proposed for listing as threatened (T) or endangered (E) species are:

Scientific Name	Common Name	Plant Type	Est. # of Plants
<i>Alsinidendron lynchoides</i> (E)	kawawae-nohu	Shrub	< 10
<i>Alsinidendron viscosum</i> (E)	None	Shrub	40-60
<i>Cyanea recta</i> (T)	haha	Shrub	500-1,500
<i>Cyanea remyi</i> (E)	haha	Shrub	460-550
<i>Giantia cyaneoides</i> (E)	mapete	Shrub	350-400
<i>Heisteria nivalis</i> (E)	oha	Shrub	15-20
<i>Hibiscadelphus woodii</i> (E)	hau kuahwi	Small tree	4
<i>Hibiscus warneae</i> ssp. <i>hammerae</i> (E)	koko ke'oke'o	Tree	75-125
<i>Kokia kauaiensis</i> (E)	koko'o	Tree	145-170
<i>Labordia linae</i> var. <i>wahawaensis</i> (E)	kamakahala	Shrub or small tree	20-30
<i>Myrsine lineariifolia</i> (T)	kolea	Shrub	1,000-1,500
<i>Phyllostegia knudsenii</i> (E)	None	Perennial herb or vine	1
<i>Phyllostegia warrana</i> (E)	None	Perennial vine	15-55
<i>Pritchardia napaliensis</i> (E)	loulu	Palm	< 90
<i>Pritchardia viscosa</i> (E)	loulu	Palm	3
<i>Schiedea helleri</i> (E)	None	Perennial vine	30-40
<i>Schiedea membranacea</i> (E)	None	Herb	200-250
<i>Schiedea stellaroides</i> (E)	Lauhala	Shrub	500-1,000
<i>Viola kauaiensis</i> var. <i>wahawaensis</i> (E)	nan waleale	Perennial herb	< 100

—FWS—

Achyranthes muhlenbergii is a shrub in the amaranth family. Once known from both the islands of Kauai and Hawaii, it was rediscovered in 1992 by biologist Thane Pratt of the National Biological Service on private land in the Kohala Mountains on the Big Island. The National Tropical Botanical Garden raised additional plants from seeds, which have been planted back in the same area through the cooperation of the private landowners.

Another of the plants included in the multi-island package is *Plantanthera holochila*, a member of the orchid family with small greenish-yellow flowers. Only 35 individual plants in five populations currently remain in the wild: one plant in Kauai's Akaka Swamp, fewer than 10 plants on Mokuai in The Nature Conservancy's Kamakou Preserve, and between 15 and 20 on Maui in the West Maui Mountains and The Nature Conservancy's Waikamoi and Kapunakea Preserves. The State's Division of Forestry and Wildlife, The Nature Conservancy of Hawaii, the National Park Service, and the Fish and Wildlife Service are cooperating in a program to fence these few remaining populations to prevent further impacts by cattle and feral pigs.

Federal listing protects plants on Federal lands and requires agencies to consult with the Fish and Wildlife Service when federally licensed or permitted projects may affect listed species. Because Hawaii State law automatically includes federally listed species on the State threatened and endangered species list, and the State's endangered species law prohibits the destruction of imperiled plants on State and private lands, protection of listed plants also extends to non-Federal lands in Hawaii.

The three proposed rules to list these 42 plants were published in the *Federal Register* on October 2, 1995. Public comments will be accepted until December 1, 1995, and should be sent to Brooks Harper, Field Supervisor, Pacific Islands Office, U.S. Fish and Wildlife Service, 300 Ala Moana Boulevard, Room 3108, Box 50088, Honolulu, Hawaii 96850.

The 14 plants proposed for listing as threatened (T) or endangered (E) species in the "multi-island" package are:

Scientific Name	Common Name	Plant Type	Est. # of Plants	Location
<i>Achyranthes muhlenbergii</i> (E)	None	Shrub	20-50	Hawaii, Kauai*
<i>Cenchrus agrimonoides</i> (E)	kamao- inano	Grass	<100	Oahu, Lanai*, Maui, Hawaii*, Kure*, Midway*, Laysan*, Kauai
<i>Cyanea gimnosoma</i> ssp. <i>gimnosoma</i> (E)	haha	Shrub	<400	Oahu, Mokuia, Lanai, Kauai
<i>Cyperus trachysanthus</i> (E)	pu'uka'a	Sedge	<350	Niihau, Kauai, Oahu, Mokoaia, Lanai*
<i>Euphorbia hawaiiensis</i> (E)	'akoko	Tree	450-825	Kauai, Oahu
<i>Isodendron laurifolium</i> (E)	aupeka	Shrub	150-210	Kauai, Oahu
<i>Isodendron laurifolium</i> (T)	aupeka	Shrub	<1,000	Kauai, Oahu
<i>Panicum hawaiiense</i> (E)	lau'ohu	Grass	23	Kauai, Niihau*
<i>Physostemum parviflorum</i> (E)	None	Herb	23	Hawaii*, Oahu, Maui*
<i>Plantanthera holochila</i> (E)	None	Herb	<35	Kauai, Oahu*, Mokuia, Maui
<i>Sanicula purpurascens</i> (E)	None	Herb	130-210	Oahu, Maui
<i>Schreberia hookeri</i> (E)	None	Herb	220-330	Oahu, Maui*
<i>Schreberia kaulensis</i> (E)	None	Shrub	15	Kauai
<i>Schreberia muhlenbergii</i> (E)	None	Shrub	<75	Kauai, Oahu

* Islands of former distribution, where species has since been extirpated.

The 25 plants proposed for listing as endangered species in the Oahu package are:

Scientific Name	Common Name	Plant Type	Est. # of Plants	Location
<i>Crataegus baccata</i>	'akoko	Small tree	<200	Waianae Mts.
<i>Crataegus rufa</i>	'akoko	Shrub or small tree	200-300	Koolau Mts.
<i>Cyanea acuminata</i>	haha	Shrub	<100	Koolau Mts.
<i>Cyanea humboldtiana</i>	haha	Shrub	100-220	Koolau Mts.
<i>Cyanea koolauensis</i>	haha	Shrub	<50	Koolau Mts.
<i>Cyanea longiflora</i>	haha	Shrub	220-300	Koolau and Waianae Mts.
<i>Cyanea strobilifera</i>	haha	Shrub	40-50	Koolau Mts.
<i>Cyrtandra denata</i>	ha hwaie	Shrub	<50	Waianae Mts.*
<i>Cyrtandra subumbellata</i>	ha hwaie	Shrub	<50	Koolau Mts.
<i>Cyrtandra vancouveria</i>	ha hwaie	Shrub	<10	Koolau Mts.
<i>Dasylepis subcordata</i>	'oha	Shrub	70-80	Waianae Mts.*
<i>Eragrostis subsericea</i>	none	Grass	6	Waianae Mts.
<i>Gardenia marianii</i>	naniu	Tree	70-100	Koolau and Waianae Mts.
<i>Labordia cyrtandrae</i>	kamakahaia	Shrub	10	Waianae Mts.*
<i>Lepidium abuscua</i>	'anaunau	Grass	<900	Waianae Mts.
<i>Loxelia grandicauda</i> ssp. <i>koolauensis</i>	none	Shrub	<250	Koolau Mts.
<i>Lobelia monostachya</i>	none	Prostrate shrub	6	Koolau Mts.
<i>Mitrasacme shiraii</i>	ahii	Slender tree	<150	Waianae Mts.*
<i>Myrsine laevis</i>	kiea	Shrub	500-3,000	Koolau Mts.
<i>Phytostegia hispidula</i>	none	Shrub or vine	150-200	Mts.
<i>Phytostegia kaulensis</i>	none	Herb	<50	Waianae Mts.
<i>Pinchardea kaala</i>	loulu	Palm	130	Waianae Mts.
<i>Schreberia kaulensis</i>	none	Shrub	300-500	Waianae Mts.
<i>Tremalobelia sinuata</i>	none	Shrub	185	Koolau Mts.
<i>Vacca cahuensis</i>	none	Shrub	180	Koolau Mts.

*Historically known from other mountain range also.

The three plants proposed for listing as endangered species in the Mokuia package are:

Scientific Name	Common Name	Plant Type	Est. # of Plants	Location
<i>Cyanea dumbaril</i>	haha	Shrub	15-20	Mokomoko Gulch
<i>Lysimachia maunaloa</i>	none	Shrub	20-40	Paleokunu Preserve
<i>Schreberia sarmentifera</i>	none	Shrub	330-1,000	Kamakou Preserve

APPENDIX C

Historic and Archaeological Resources

- Appendix C.1 - Correspondence and Coordination
- Appendix C.2 - Description of Section 4(f) Resources
- Appendix C.3 - Fully Executed Memorandum of Agreement

Appendix C.1 - Correspondence and Coordination



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

DEPT. LAND, CULTURE AND NATURAL RESOURCES

DEPUTY

JOHN P. ZEPHYRUS
DONALD L. HUNAUKE

ACQUISITION DEVELOPMENT
PROGRAMS

ASUATE RESOURCES
CONSERVATION AND

ENVIRONMENTAL AFFAIRS
CONSERVATION AND

RECREATION AND
PROTECT PROSECUTION

FORESTRY AND WILDLIFE
HISTORIC PRESERVATION

LAND
DIVISION

STATE PLANNING
DIVISION

WATER AND LAND DEVELOPMENT

LOG NO: 9546

DOC NO: 9309RC40

September 22, 1993

Ms. Demetra M. Green
Parsons, Brinckerhoff, Quade & Douglas Inc.
Two Waterfront Plaza, Suite 220
500 Ala Moana Boulevard
Honolulu, Hawaii 96813

Dear Ms. Green:

SUBJECT: Historic Preservation Review of Draft Archaeological Inventory
Report for Kealaheke Parkway Extension (Alternatives 10 and 11)
(FHWA/DOI)
Honolulu, North Kona, Hawaii

This responds to your cover transmittal letter of July 23, 1993, to Ross Condy (our Branch Chief for Archaeology) which submitted this report for our review (Blair et al 1993). Draft: An Archaeological Inventory Survey and Limited Subsurface Testing of the Proposed Kealaheke Parkway Extension, Alternatives 10 and 11. Cultural Surveys Hawaii ms.) and the additional information submitted August 5, 1993. These additional replacement pages were also submitted by FHWA in a September 1, 1993, letter to our office.

At this time, we can agree that the survey has adequately covered the project area and has found all the historic sites, totaling 83 sites. The background review of Ahupua'a settlement patterns and likely sites in the project area is acceptable. The site descriptions are also acceptable. The interpretations of site patterns are acceptable; indeed, these are excellent. Basically, the project cross-cuts two environmental zones of this area (intermediate and upland zones). In the intermediate zone, site density is low, consisting of limited agriculture and associated temporary and a few permanent habitations. In the upland zone with its high site density, the project area contains a variety of agricultural field types, and associated temporary habitations (caves and smaller surface structures), 3 lava tubes sites with burials (two with only 1 burial each), and some permanent habitation sites. Several inland-heading trails lead up from the shore to the upland zone. The dates for the use of the area show some use in the A.D. 1200s, but much of the use dating after the A.D. 1400s.

D. Green
Page 3

The significance evaluations generally seem acceptable with one exception and one clarification needed. Our office generally does not consider papamu (pecked game boards) by themselves sufficient for an assessment of traditional cultural significance, in contrast to petroglyphs which often do have some religious or ritual importance. Thus, we wonder if sites 18743, 18754, and 18284 should be considered significant for traditional cultural reasons -- as each have but one papamu. We would tend to think not, and we would ask if your consulting archaeologist would agree with us or not on this point. As for the clarification, we need a better analysis of the sites being considered excellent examples of their types. Are these excellent examples of part of the settlement pattern in this Honokohau area or are they unique types of sites? Our concern here is that we agree that this criterion is important, quite notably in attempting to identify excellent portions of prior settlement patterns. But it needs to be clear if this is the reasoning for the evaluation.

Before we can evaluate the mitigation proposals, we need several additional bits of information:

1. What will the nature of construction impacts be to these two alternate corridors? Will the entire corridor be utilized? Essentially, would all sites be destroyed? Is there the capability to avoid and preserve sites and interpret sites, as the consulting archaeologist is recommending? And if avoidance is possible, does this mean that construction will move out into nearby, unsurveyed areas? If this is the case, those areas would have to be surveyed before the historic preservation review could be concluded.

2. Page 262 states that all 83 of the sites will be addressed under mitigation, but when viewing the text only 54 are slated for data recovery and 19 for preservation, with some of the latter also covered under data recovery. Clearly, this does not add up to 83 sites. Pages 262-263 need revision to clearly cover all 83 sites. Table 1 on page 9-10, or at least portions of the table should be reintroduced here.

a. It is clear that a number of sites are considered "no longer significant" (using our State classification) because they were important solely for their information content and the consultant considers a reasonable amount of that information recorded; thus, no further work (NFW) is indicated. Justification needs to be given for this evaluation on pages 262-263. We suspect that this is not a problem, however.

b. A number of sites are also slated for preservation or selected preservation. It needs to be very clear why these sites are being so recommended and the sites need to be better identified as to what they are. If they are being recommended for interpretation, then it needs to be clear why (e.g., excellent examples of the settlement patterns in northern Kona that are not preserved and interpreted elsewhere). If they are being recommended for preservation due to cultural sensitivity (e.g., burials), it needs to be clearly stated with the sites identified and an indication of how many burials are present. Solitary papamu are not grounds for preservation in this office's view. Also, preservation of one or two petroglyphs by themselves is rarely done, because of

JOHN WAINIKE
GOVERNOR OF HAWAII



STATE HISTORIC PRESERVATION DIVISION
STATE OF LAND AND NATURAL RESOURCES
DEPUTY
DONALD L. HANAU
ADULTIC DEVELOPMENT PROGRAM
ADULTIC RESOURCE CONSERVATION AND ENVIRONMENTAL AFFAIRS
COMMITTEE TO CONDUCT RESEARCH ON CONSERVATION POLICY AND PRACTICE
HISTORIC PRESERVATION DIVISION
LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT
Log No: 9262
Doc No: 9309RC48

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

September 29, 1993
Mr. William Lake
Division Administrator
Federal Highway Administration, Region Nine
Hawaii Division
U.S. Department of Transportation
Box 50206
Honolulu, Hawaii 96850

Dear Mr. Lake:

SUBJECT: Review of Draft Archaeological Inventory Survey Report for Kealahou
Parkway Extension
Honokohau, North Kona, Hawaii

A few days ago our Historic Preservation Division staff reviewed this report, and a copy was sent to your office. They found the survey acceptable and the site descriptions complete, but they did have some questions on significance and mitigation that needed answer before we finalized our review.

Since then, we checked your letter of August 16, 1993. You are correct that some of the significance criteria need to be altered to conform with the National Register of Historic Places criteria. At the State level, we have been using a criterion E to cover traditional cultural significance (e.g., burials, religious structures, trails). This was done before the federal review was assigning a criterion to traditional cultural significance. In checking with recent National Register nominations, it does seem that criterion A is being used for traditional cultural significance. Given this information, we would suggest placing all the sites labelled criterion E in the report under criterion A, because native Hawaiian burials have religious/cultural significance. And we agree that it would be useful to include a short description of the rationale for this assignment.

Again, as soon as we receive the information on significance and mitigation, we will finalize our review, and the official review will be sent to your office.

Very truly yours,

Keith Ahue
Keith Ahue, Chairman
and State Historic Preservation Officer

cc: Deneire Green, Purson, Bruckhoff, Quade and Douglas
Hallatt Hammatt, Cultural Surveys Hawaii

RC:III

D. Green
P-5-3

practical preservation reasons and because if the rest of the site is destroyed, their context is often gone. This needs thought also. It should also be very clear what selective preservation means.

For example, site 2 -- the Mamelahox Trail -- has been committed to preservation as State policy throughout developments from the Keahole Airport through Kealahou. This is complete preservation, not "selective preservation".

c. We are curious what research questions that the consulting archaeologist considers relevant to the proposed data recovery work in the project area. It would be desirable to briefly mention these on page 262.

3. We need to see two archaeological survey reports done by Cultural Surveys Hawaii in this Honokohau area -- one for this project (Borthwick et al. 1993, Archaeological Planning Reconnaissance for the Proposed Kealahou Parkway Extension; Robins et al. 1993, An Archaeological Inventory Survey of an Approximately 803-acre Subject Parcel in the Ahupua'a of Honokohau I and II, North Kona District, Island of Hawaii). These reports are cited in this report as being important. In the case of the Borthwick et al. study, it is noted that two larger heiau or high ranking structures are quite close to these two alignments. In order to evaluate any effect determination and mitigation proposals, we need to see these reports to understand sites immediately adjacent to the proposed parkway.

Thus, at this point, the site documentation in the report is acceptable. We would suggest some revision of the significance evaluations and mitigation recommendations before the report is finalized. We need a bit more information on the significance evaluations, before we could agree with the agencies (FHWA/DOT and our office) on significance -- before establishing how many significant sites are present and their nature. We also need some additional information before commenting on mitigation proposals -- although not a great deal of information is needed. This is essentially the basis for the effect determination that FHWA would have to process. We will send a copy of this letter to FHWA, but at this point, we will not send a formal response on significance, effect determination or mitigation to them until we receive the additional information.

If you have any questions, please feel free to contact Ross Cordy (587-0012) or Kanalei Shun (587-0007) of our staff.

Sincerely yours,

Don Hibbard

DON HIBBARD, Administrator
State Historic Preservation Division



COPY
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
16 SOUTH KING STREET, 15TH FLOOR
HONOLULU, HAWAII 96813

LETTIE WALKER-CHAMBERLAIN
NO. AND OF LAND AND NATURAL RESOURCES

- DEPUTY
- CHIEF OF BUREAU
- SONIA L. HANAUZ
- AGRICULTURAL DEVELOPMENT
- PROBLEMS
- ADULTS RESOURCES
- QUALIFICATION AND
- INVESTIGATION OFFICES
- CONSERVATION AND
- RESOURCES DEVELOPMENT
- DEPARTMENT
- FORESTRY AND WILDLIFE
- RESEARCH AND
- LAND USE
- STATE PARKS
- WATER AND LAND DEVELOPMENT

LOG NO: 10422
DOC NO: 9312RC50

December 23, 1993

Ms. Denejira M. Green, Environmental Planner
Parsons Brinckerhoff Quade & Douglas Inc.
Two Waterfront Plaza, Suite 2210
500 Ala Moana Boulevard
Honolulu, Hawaii 96813

Dear Ms. Green:

SUBJECT: Revised Archaeological Inventory Survey Report - Kealahou Parkway
Honokohau, North Kona, Hawaii

Thank you for your letter of December 1, 1993, which submitted this revised report (Barr et al. 1993, a Archaeological Inventory Survey and Limited Subsurface Testing of the Proposed Kealahou Parkway Extension, Alternatives 10 and 11, Cultural Surveys Hawaii ms.). The revisions were to meet our comments in our September 22, 1993, letter to you and our September 29, 1993, letter to Mr. Laka.

Our prior review found the recording of the 83 historic sites found to be adequate. Our concerns were only about the sections on significance evaluations and mitigation recommendations. Not all of our questions have been answered in this revised report.

Before we can conclude our review of significance evaluations, sites considered significant for multiple criteria still need clarification in the text. The table on page 262 of the revised report lists 17 sites. The text on pages 263-264 adequately discuss why criterion C was assigned. However, the text is not clear as to what in each site qualified for criterion A. The text (p. 263) says some of the sites meeting A were Japanese homesteads, but the table does not clarify which sites these are, nor does the text. The same is true for petroglyphs. We recommend that the table be revised to indicate which sites are Japanese homesteads and which contain petroglyphs. Also, we recommend that the text (at the base of 262) include the site numbers in parentheses. Although redundant, it will make it clear. Also, what of site 18210? It has a "ritual" function listed. What is this, and would not this merit mentioning under traditional cultural significance? Also, we recommend that something be added stating why Japanese settlement is associated with major trends in the history of the State. This was in the original report's text (p. 261, para. 4), but it is not in this version. These points might seem minor, but the argument for the significance evaluations must be clear, and the criteria assignments must be clear. It appears as if all is acceptable. Just have these pages revised and sent to us in draft for an informal review. If all is okay, we can formally comment. (Also, the table on p. 262 has no significance criteria entered for site 18725.)

Regarding mitigation, page 265 of the new version now clearly discusses all 83 sites -- 60 proposed for data recovery, 7 for preservation, and 16 for no further work. We can agree with the proposal that 16 need

D. Green
Page 2

no further work now, given the justification on page 265 (para. 1). The sites were significant solely for their information content, and adequate amounts of this information have been recorded in the survey or in mitigation in the Kealahou project. However, we cannot yet evaluate the mitigation proposals for the remaining 67 significant historic sites in the project area. The following are still needed before we can evaluate the proposals:

1. This report still needs the following corrections or clarifications:

- a. Table 22 on pages 266-267 includes only c. 51 of the 67 significant sites needing mitigation. The table needs to be complete.
- b. The 7 sites recommended for preservation include 4 trails (Mamalaha, 2; traditional foot trail, 13194; two kerestone trails of the 1800s, 13006, 18099) and the burial features of 3 sites (18750, 18185, 18749). Several points need clarification:

v. What happened to the Japanese homestead sites, site 18185's petroglyphs, and the agricultural sites which were considered excellent examples of these site types in Honokohau on pages 263-264? One wonders why these were not recommended for preservation. Are better examples being proposed for preservation in the larger Honokohau area outside of the parkway project area?

vi. How many burials are in the features recommended for preservation? This information is in the site descriptions, but it needs to be noted again here, so the reader does not have to search for the information.

3. Is it being recommended that the trails be preserved in the road corridors or not? Preservation of segments next to other sites that will be preserved is mentioned, but no other such sites are recommended for preservation in this project. Are these segments outside of this project? If that is the case, then preservation for the trails is not being recommended for this project.

4. Where do the burial features lie in relation to the road corridor? If useful, illustrations could be provided.

2. Clearly relating to the last points is a major question that we asked in our September 22, 1993, letter. This question was "Will the entire corridor be realized? Essentially, would all sites be destroyed? Is there the capability to avoid and preserve sites and interpret sites, as the consulting archaeologist is recommending? And if avoidance is possible, does this mean that construction will move out into nearby unsurveyed areas? If this is the case, those areas would have to be surveyed before historic preservation review could be concluded." We need these questions answered before we can evaluate mitigation proposals. This can be done separate from the report.

3. We definitely will need to see the archaeological inventory survey report for the rest of Honokohau (Robins et al. 1993). An Archaeological Inventory Survey of an Approximately 403-acre Subject Parcel in the Ahupua'a of Honokohau I and II, North Kona District, Island of Hawaii. Cultural Surveys Hawaii ms.). This report is frequently cited in the parkway study and clearly provides an overall picture of which sites remain from the original settlement patterns of the area -- a point that will be vital in our evaluation of mitigation proposals. We need to be sure that the better examples of this settlement pattern are preserved -- either in the Parkway area, the greater Honokohau area, or in nearby areas. (One reason for this concern is to complement the coastal Kaloko-Honokohau national park with preservation of examples of the more inland portions of settlement in these former communities.) Without seeing the report, we cannot evaluate this concern.

D. Green
Page 3

Please have your consultant revise the significance and mitigation portions of the report as noted above and send us those pages alone for informal review. If the information is acceptable, then the report could be finalized in our opinion. At that point, we would be able to agree that the sites are appropriately documented, and we could send a letter to FHWA stating the significance of the sites is adequately assessed (a consensus agreement). We cannot comment on mitigation proposals without items 2 and 3 noted above. Once mitigation commitments seem reasonable, we can send comments to FHWA. Then upon selecting a corridor, FHWA could propose an effect determination to our office. Input should be obtained from community and native Hawaiian groups, including the Office of Hawaiian Affairs, on the finalized report and mitigation proposals prior to proposing an effect determination. Hopefully, this would ensure that a general agreement on treatment exists.

If you have any questions, please feel free to contact our office. Ross Corby, our Branch Chief for Archaeology (587-0012), or Kanakai Shum, our Hawaii Island Archaeologist (517-0007) are our contact persons.

Sincerely,



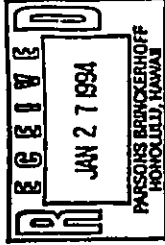
DON HIBBARD, Administrator
State Historic Preservation Division

c: Halet Hamman, Cultural Surveys Hawaii

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Mr. Don Hibbard
Page 2



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JAN 26 1994

A representative from my department and from our consultant, the Parsons, Brinckerhoff, Quada and Douglas, Inc. would attend the meeting and make the presentation. A representative from our archaeological consultant, Cultural Surveys Hawaii, would also attend the meeting and be available to answer any questions.

DO:gm

c: PBQD (Robert Miyasaki)
HWY-PA

TO: Don Hibbard
Department of Land and Natural Resources

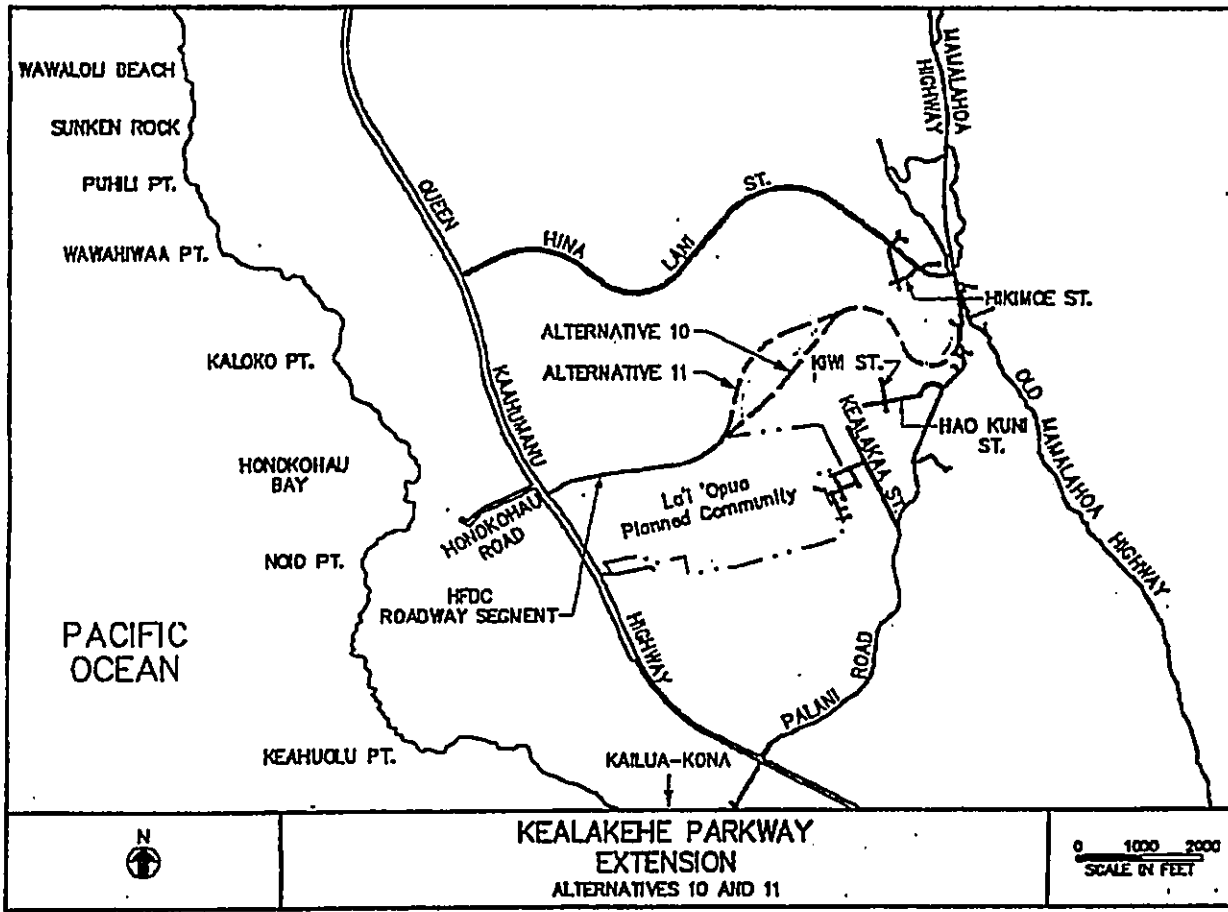
FROM: T. HARANO, Chief, Highways
Department of Transportation *T. Harano*

SUBJECT: BURIAL COUNCIL MEETING OF FEBRUARY 17, 1994
KEALAKEHE PARKWAY, KAILUA-KONA, HAWAII
INFORMATIONAL PRESENTATION

A preliminary engineering and environmental impact study for the proposed Kealahou Parkway project, located in Kona on the island of Hawaii, is currently being conducted. We anticipate completion of a Draft Environmental Impact Study in early 1994. At this time, we would like to meet with government officials and various community groups to inform them of the status of the project and to answer any questions that they may have.

Burial sites have been discovered during an archaeological survey of the project area. Burial Council action is, therefore, required before construction of the roadway facility may occur. We realize that Burial Council action is not possible at this time since specific information about potential project impacts to burial sites is not known.

At this time, however, we would like to make an initial presentation to the Burial Council primarily to advise them of the project, to describe its purpose and need, and to answer any question that they may have. We, therefore, request that we be included on the February 17, 1994, island of Hawaii Burial Council agenda to make an information presentation on the Kealahou Parkway project. We anticipate that our presentation and question and answer period will last no more than one (1) hour.



REX D. JOHNSON
DIRECTOR
DEPUTY DIRECTORS
KAMALAHUA
JOYCE T. OLMSTE
AL PALM
CALVINIA TSUDA
IN REPLY REFER TO

HWY-PA
2-9926



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
400 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5007
January 27, 1994

JOHN WALKER
COMMISSIONER

Ms. Fanny Au Hoy
Daughters of Hawaii
c/o Hulihee Palace
75-5718 Alii Drive
Kailua-Kona, Hawaii 96740

Dear Ms. Au Hoy:

Subject: Kealakehe Parkway Informational Meeting

A preliminary engineering and environmental impact study for the proposed Kealakehe Parkway project, located in Kona on the island of Hawaii, is currently being conducted. A location map is attached. We anticipate completion of a Draft Environmental Impact Study in early 1994. At this time, we would like to meet with various community groups to inform them of the project status and to answer any questions that they may have.

Perhaps a joint meeting between your organization and the Hawaiian Civic Club could be arranged. We will be in Kailua-Kona on February 16, 1994.

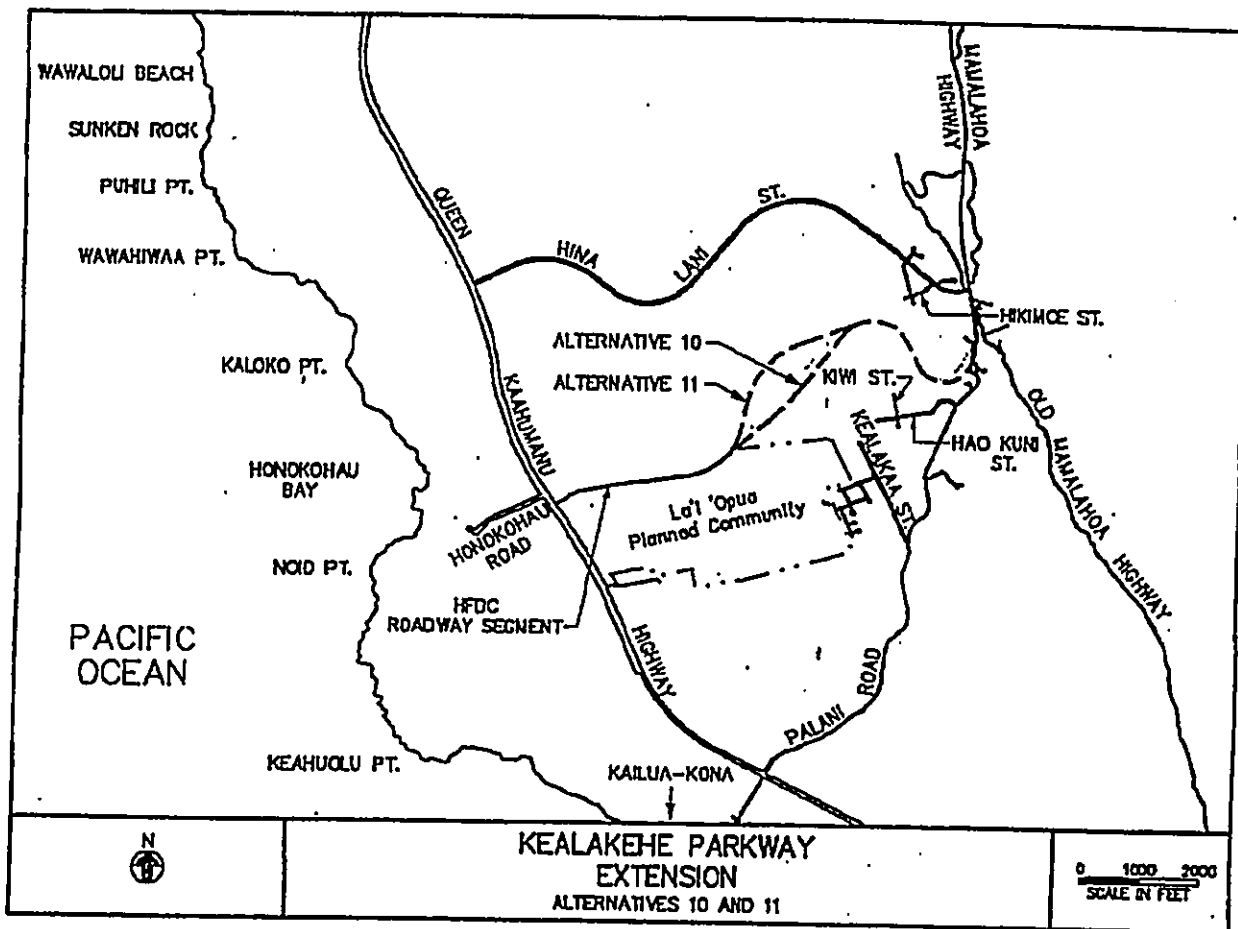
Please contact Mr. Kenneth Au of our Highway Planning Branch in Honolulu if you are interested in sponsoring or attending such a meeting. You may call him toll free at 1-800-468-4644, extension 7-1843. We anticipate that this meeting will last no more than one (1) hour.

Sincerely,

Rex D. Johnson
Rex D. Johnson
Director

Enclosure

/c: PB (R. Miyasaki)



REX D. JOHNSON
 DIRECTOR
 DEPT. DIRECTORS
 JAMES W. FOLEY
 JAMES W. FOLEY
 ALAN W. WILSON
 CALVINIA TSUDA
 IN REPLY REFER TO:



STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 800 PUNCHBOWL STREET
 HONOLULU, HAWAII 96813-5087
 January 27, 1994

HMV-PA
 2.9927

Ms. Lemana Demate
 Hawaiian Civic Club
 P.O. Box 4098
 Kailua-Kona, Hawaii 96740

Dear Ms. Demate:

Subject: Kealakehe Parkway Informational Meeting

A preliminary engineering and environmental impact study for the proposed Kealakehe Parkway project, located in Kona on the island of Hawaii, is currently being conducted. A location map is attached. We anticipate completion of a Draft Environmental Impact Study in early 1994. At this time, we would like to meet with various community groups to inform them of the project status and to answer any questions that they may have.

Perhaps a joint meeting between your organization and the Hawaiian Civic Club could be arranged. We will be in Kailua-Kona on February 16, 1994.

Please contact Mr. Kenneth Au of our Highway Planning Branch in Honolulu if you are interested in sponsoring or attending such a meeting. You may call him toll free at 1-800-468-4644, extension 7-1843. We anticipate that this meeting will last no more than one (1) hour.

Sincerely,

Rex D. Johnson
 Director

Enclosure

✓c: PB (R. Miyasaki)

JOHN WALKER
GOVERNOR

JOHN WAINANE
GOVERNOR OF HAWAII

AUG - 5 1994



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

AUG - 5 1994

REF:HP-JK

Ms. Deniseira M. Green, Environmental Planner
Parsons Brinckerhoff Quade & Douglas Inc.
Two Waterfront Plaza, Suite 220
500 Ala Moana Boulevard
Honolulu, Hawaii 96813

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HISTORIC PRESERVATION
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LAND MANAGEMENT
STATE PARKS
WATER AND LAND DEVELOPMENT

LOG NO: 12349 ✓
DOC NO: 9407RC-40

Dear Ms. Green:

SUBJECT: Revised Archaeological Inventory Survey Report & Addendum
Report
for Detour Alternatives -- Kealahou Parkway
Honokohau, North Kohu, Hawaii

On June 10, 1994, Dr. H. Hammett of Cultural Surveys Hawaii submitted the revised survey report (Barr et al. 1994). An Archaeological Inventory Survey and Limited Testing of the Proposed Kealahou Parkway Extension, Alternatives 10 and 11, Cultural Surveys Hawaii ms.) and the new survey report for the detour alternatives (Borthwick, Ballard and Hammett 1994, Addendum Report to Kealahou Parkway Extension: Archaeological Inventory Survey for the Proposed Kealahou Parkway Extension Detour Road Alternatives 1 and 2, Cultural Surveys Hawaii ms.).

Related to these surveys and their review, please do send us copies of consultations with native Hawaiian groups and individuals regarding their input on sites in the project area, significance evaluations and mitigation recommendations. We need to be sure FHWA has carried out this responsibility, and we need to have the findings on record.

We find the revisions to the original survey report to have met all of our concerns stated in our letter of December 23, 1993 -- particularly given the field trip of January 11, 1994. Assuming that consultations with native Hawaiian individuals and groups have not changed any findings of the report, we can conclude a review of this report. We agree with the significance evaluations for the 83 sites found -- 65 sites significant solely for their information content (criterion D) and 18 sites for multiple criteria (as itemized in Table 22, p. 262). If FHWA agrees, these sites can be considered by consensus to be eligible for inclusion on the National Register of Historic Places. We also agree with the proposed mitigation measures for the 83 sites (as stated on pp. 265-271). Burials will be avoided and preserved. Our field trip showed that better

Deniseira M. Green
Page 2

examples of permanent house sites will be preserved nearby in a larger area of land. Also, the field trip showed excellent examples of prehistoric field areas existed just outside the road corridors proposed and could be preserved in part under other development permit actions unrelated to the roadway.

As for the detour road survey, we agree that the project areas were adequately surveyed, with 10 historic sites present. Assuming that consultations with native Hawaiian individuals and groups do not change the findings of the report, we can conclude our review of the survey. We agree that the sites are adequately described. We agree with the significance evaluations in Table 1 (p. 7) -- 5 sites significant solely for their information content and 3 for multiple criteria. If FHWA agrees, these sites can be considered by consensus to be eligible for inclusion on the National Register of Historic Places. We agree with the proposed mitigation measures for these sites as stated on pages 39-41 -- data recovery for 8 sites and no further work at 2. [Note, Table 1 indicates that site 19628 and 19629 might be preserved, and we assume this is incorrect. Table 1 should be revised, with replacement pages sent to us.] As noted on page 40, para. 3, the best examples of the two agricultural sites (18397, 18730) that are excellent examples of their types are outside the project area, and we can attempt to preserve portions of them under development permit actions for those lands unrelated to the parkway project.

We will await notification on which roadway alignment is selected. At that point, FHWA will need to make an effect determination and, we believe, will need to propose mitigation measures under a Memorandum of Agreement, since sites meeting multiple criteria of the National Register are involved.

If you have any questions, please feel free to contact Ross Cordy or Pat McCoy of our staff.

Very truly yours,

Keith Ahue
Keith Ahue, Chairperson and
State Historic Preservation Officer

RC:jk

c: H. Hammett, Cultural Surveys Hawaii





Parsons
Brinckerhoff
Two Waterfront Plaza
Suite 220
500 Ala Moana Boulevard
Honolulu, HI 96813-4990
808-531-7094
Fax 808-528-2168

August 9, 1994

Keith Ahue
Chairperson and
State Historic Preservation Officer
State Historic Preservation Division
33 South King Street, 6th Floor
Honolulu, Hawaii 96813

ATTN: Ross Cordy

RE: Revised Archaeological Inventory Survey Report &
Addendum Report for Detour Alternatives - Kealahou Parkway
Honokohau, North Kona, Hawaii

Dear Mr. Ahue:

In late 1993 and early 1994, the State of Hawaii Department of Transportation (SDOT) held a series of small group meetings to inform selected groups and individuals about the status of the Kealahou Parkway project. On February 16, 1994, SDOT held a meeting with the Daughters of Hawaii, a Hawaiian civic club; a subsequent meeting was held on February 17th with the Hawaii County Burial Council. A representative from Cultural Surveys Hawaii attended both meetings.

Per your letter dated August 3, 1994 regarding "consultations with native Hawaiian groups and individuals regarding their input on sites in the project area, significance evaluations, and mitigation recommendations," copies of the minutes from both meetings are enclosed for your records. If further consultations are required, however, we recommend that they occur concurrently with the preparation of the Memorandum of Agreement.

If you have further questions or comments, please feel free to contact me at 524-5177, or by fax (545-2753).

Sincerely yours,
PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC.

Deneira M. Green
Deneira M. Green

Enclosure: Daughters of Hawaii, February 16, 1994 meeting minutes
Big Island Burial Council, February 17, 1994 meeting minutes

cc: SDOT

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OCT 24 1994

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

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HISTORIC PRESERVATION
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WATER AND LAND DEVELOPMENT

REF:HP-JK

OCT 21 1994

Deneira M. Green
Parsons Brinckerhoff Quadt & Douglas, Inc.
1001 Bishop St. -- Pacific Towers, Suite 3000
Honolulu, Hawaii 96813

Dear Ms. Green:

SUBJECT: Consultations with Native Hawaiian Groups &
Individuals -- Kealahou Parkway Project (FHWA)
Honokohau, North Kona, Hawaii

This responds to your letter of August 9, 1994, on this subject. In that letter you sent copies of minutes from two meetings -- one with our Hawaii Island Burial Council (February 17, 1994) and one with members of the Kona Hawaiian Civic Club and Huihine'e Palace (February 16, 1994).

These minutes seem to indicate that these people were briefed on the status of the road project, and some discussion focused on endangered plants. However, it was not clear if the people had been briefed on the archaeological survey findings and were asked if they knew about other historic properties (including traditional cultural places) or if they had information indicating additional or different uses of the historic sites (e.g., sometimes house sites were later used as burial sites). It is important that attempts be made to contact Hawaiian groups and individuals with knowledge about the history and use of this area to ask these questions, so your firm, the federal agency responsible, and our office can ensure that steps have been taken to fully identify and properly interpret all sites. It is also important that such groups have an opportunity to comment on the significance evaluations. Eventually, as mitigation approaches are committed to, it is also vital that comments on that subject be obtained. But, at this point, we need to see that attempts have been made to contact groups and individuals with knowledge about this area regarding identification and interpretation of sites.

Deneira Green
Page 2

You might have already undertaken these steps, and it might just not be clear in the minutes. We will wait a response. If you have any questions, please feel free to contact Ross Cordy (587-0012) or Pat McCoy (587-0007) of our staff.

Very truly yours,

KEITH XHBE, Chairperson and
Historic Preservation Officer

RC:jk

LOG NO: 12975 ✓
DOC NO: 9410RC06



Hwy 7877

KEALAKEHE PARKWAY EXTENSION PROJECT
ARCHAEOLOGICAL RESOURCES

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QUESTIONNAIRE has been designed to assist you in providing input on archaeological sites in the project area (see attached figure). After your review of An Archaeological Inventory Survey and the Addendum Report to Kealakehe Parkway Extension, Alternatives 10 and 11 and the Highway's Limited Subsurface Testing of the Proposed Kealakehe Parkway Extension, Alternatives 10 and 11 and the Addendum Report to Kealakehe Parkway Extension (June 1994), we would appreciate any input you may have on the following points:

1) Are you aware of any other historic/archaeological properties within the road rights-of-way (including traditional cultural places) that were not recorded in the inventory survey reports?

No. _____

2) Do you have information on additional or different uses of the site(s) to supplement the information provided in the reports, or for sites not identified in the reports?

No. _____

3) Do you have information regarding the history and cultural use of the project area to supplement the information provided in the reports?

No. _____

4) Are the historic interpretations in the reports presented correctly? The Office of Hawaiian Affairs (OHA) should be given the opportunity to review the historic interpretations.

5) Do you have any comments on the significance evaluation that has been assigned to each site? OHA should review the significance evaluations and recommended treatments for the sites.

6) Do you have any other comments? The Department of Hawaiian Home Lands has not administered any lands in the Kona districts of the Big Island; we have no special knowledge regarding archaeological or cultural resources in the area.

Name/Organization: State of Hawaii, Dept. of Hawaiian Home Lands
Address/Phone No.: P.O. Box 1879, Honolulu, HI 96805; Phone 586-3858

Please return this form by (date) to: Mr. Tetsuo Harano Date: 12/08/94
Chief, Highways Division
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

11/2/94

Hwy 7861

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

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- BOARD OF LAND AND NATURAL RESOURCES
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STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
31 SOUTH KING STREET, 8TH FLOOR
HONOLULU, HAWAII 96813

December 5, 1994

M E M O R A N D U M

LOG NO: 13360
DOC NO: 9412EAD03

TO: TETSUO HARANO, Chief
Highways Division
Department of Transportation

FROM: DON HIBBARD, Administrator
State Historic Preservation Division

SUBJECT: Comments of Hawai'i Island Burial Council Relating to Kealakehe Parkway Extension, North Kona, Hawai'i

The Hawai'i Island Burial Council (Council) discussed the inventory survey report provided for the above project at its meeting of December 1, 1994. Council members have not had an ample opportunity to review the report, especially the sections relating to identified Native Hawaiian burial sites.

The Council recommended that as soon as the final corridor is selected, that the Department of Transportation or its representative, come before the Council to discuss any possible impacts to identified burial sites.

In addition, the Council stated that a site visit at that time may prove helpful in its determination of burial site treatment. The SHPD concurs with the recommendation and hereby communicates the same to Highways Division.

If there are any questions, please have your staff contact Halealoha Ayau, Esq. at 587-0010.

EA:jk

C: Punahelu Lerma, Chair, Hawai'i Island Burial Council

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DEC 12 8 21 AM '94
HAWAIIAN HOME LANDS
PLANNING DIVISION



February 15, 1996

Mahealani Pai
Pai Ohana Association
'Aio'opio Honokohauiki, North Kona District
P.O. Box 3507
Kailua, Kona, Hawaii 96745-3507

Subject: Kealakehe Parkway Project
North Kona, Hawaii
Archaeological Sites

Dear Ms. Pai:

On behalf of the Federal Highway Administration (FHWA), Parsons Brinckerhoff (PB) would like to thank you for your letter, dated September 22, 1995, which comments on the draft Environmental Impact Statement (EIS) for the proposed Kealakehe Parkway Extension. During the preparation of the draft EIS, the State of Hawaii Department of Transportation (SDOT) conducted an archaeological inventory survey, including subsurface testing, within the Kealakehe Parkway Extension project corridor. Two alignment alternatives were included in the inventory survey, Alternatives 10 and 11.

Since completing the inventory survey report in June 1994, the draft EIS in July 1995, and the close of the comment period in October 1995, Alternative 11 has been selected as the preferred alignment for Kealakehe Parkway in part because it has fewer archaeological impacts than Alternative 10.

In accordance with the National Environmental Policy Act (NEPA), Chapter 343, Hawaii Revised Statutes (HRS), Section 106 of the Historic Preservation Act, and Chapter 6E, HRS (Island burial councils), a copy of the inventory survey and addendum report are enclosed for your consideration. Since the enclosed reports were completed before the preferred alternative was selected, the proposed Parkway will not affect all 92 sites identified in the report, but only the 44 sites indicated below:

- nineteen sites recorded exclusively within the Alternative 11 corridor;
- eighteen sites common to Alternatives 10 and 11; and
- seven sites within the detour road corridor.

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If, after reviewing the survey report, you have knowledge of sites potentially affected by Alternative 11 and the detour road that:

- are not included in the inventory survey report; or
 - have improperly described functions because potential impacts to them could displace traditional, customary and religious practices.
- please send your comments to Deneitra Hutchinson at PB no later than February 29, 1996, with as much detailed information as possible

Thank you for your interest in working with the FHWA to see that all archaeological sites are treated appropriately during the course of this project.

Sincerely yours,


Keith Nakano, P.E.
Project Manager

Enclosures: An Archaeological Inventory Survey and Limited Subsurface Testing of the Proposed Kealakehe Parkway Extension, Alternatives 10 and 11 and Addendum Report to Kealakehe Parkway Extension, Archaeological Inventory Survey for the Proposed Kealakehe Parkway Extension Detour Road Alternatives 1 and 2, Honokohau 1, North Kona, Hawaii (June 1994)

copy.
Federal Highway Administration
State Historic Preservation Division
State of Hawaii Department of Transportation, Planning Branch

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BENJAMIN A. CARTER
GOVERNOR OF HAWAII

COPY

STATE OF HAWAII
 DEPARTMENT OF LAND AND NATURAL RESOURCES
 STATE HISTORIC PRESERVATION DIVISION
 33 SOUTH KING STREET, 5TH FLOOR
 HONOLULU, HAWAII 96813

APR 18 1996

MICHAEL D. WELSH, CHAIRMAN
 BOARD OF LAND AND NATURAL RESOURCES
 COUNTY OF HAWAII
 605 LINT COLLEGEWAY

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 CERTIFICATES
 SOCIETY AND CULTURE
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 LAND MANAGEMENT
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 WATER AND LAND DEVELOPMENT

April 12, 1996

Mr. Abraham Wong, Division Administrator
 Federal Highway Administration
 Hawaii Division
 U.S. Department of Transportation
 300 Ala Moana Blvd., Room 3202
 Honolulu, Hawaii 96850

LOG NO: 16887 ✓
 DOC NO: 9604RC01

Attn.: Pat Phung, Transportation Engineer

Dear Mr. Wong:

SUBJECT: Determination of Effect, National Historic Preservation Act
 Compliance -- Kealahou Parkway (FHWA)
 Honokohau, North Kona, Hawaii

We have received your letter of March 29, 1996, on this matter. We concur with your determination of adverse effect and the need to prepare a Memorandum of Agreement (MOA) to mitigate, as best possible, the adverse effects to the sites in the project area.

We also have received your March 20, 1996, letter on consultations with native Hawaiian groups and individuals. We believe that your agency has made a good faith effort to obtain information relating to the survey and significance evaluations. We acknowledge that no information was received on any additional historic sites being present in the project area, beyond those sites found in the archaeological survey. Also, no information was obtained that would change the functional interpretations of the sites. And no disagreements were raised with the significance evaluations.

We agree that the MOA should address the preservation of 5 historic sites (4 trails and one burial site) and the archaeological data recovery of 39 historic sites. We also agree that 9 sites need "no further work" since they were significant solely for their information content and an adequate and reasonable amount of that information was recorded during the survey. We will await official submittal of a draft of the MOA.

A. Wong
 Page 2

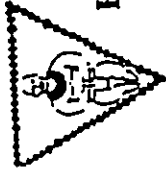
We are also pleased to see that FHWA plans to continue consultations with native Hawaiian groups and individuals as it prepares the mitigation measures for the MOA.

Aloha,

DON HIBBARD, Administrator &
 Deputy State Historic Preservation Officer

RC:smk

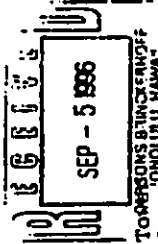
c: Deneira Hutchinson, Parsons Brinckerhoff
 Doug Oritomo, Hawaii Dept. of Transportation, HWY-PA



HUI MĀLAMA I NĀ KŪPUNA 'O HAWAI'I NEI
(GROUP CARING FOR THE ANCESTORS OF HAWAI'I)

August 27, 1996

Jason Yazawa, Planner
Parsons Brinckerhoff Pacific Tompkins Building
1001 Bishop Street, Suite 3000
Honolulu, Hawai'i 96813



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Aloha Mr. Yazawa:

Thank you for your letter of July 15, 1996 regarding Kealakehe Parkway Project. First, I am a man and you may address me as Mr. Nihipali.

Secondly, is this a section 106 MOA under the National Historic Preservation Act? If so, why is Hui Mālama not being invited to concur? We wish to be so invited.

Third, please consult with the Kona Hawaiian Civic Club regarding treatment of all historic sites, burial sites, and trails and invite them to concur as a Native Hawaiian Organization. The president is Leimana Damante who works at the Kona OHA office.

Fourth, has there been an evaluation of the project area as a traditional cultural property as defined in National Park Service Bulletin 38? Such areas require certain treatment attention.

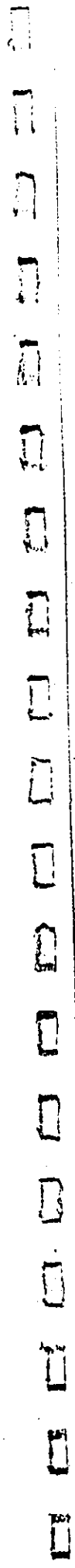
Finally, shouldn't there be a determination from the Hawai'i (not Big) Island Burial Council regarding burial site treatment prior to the execution of the MOA? I am not sure about this point.

Thank you for the opportunity to comment on these matters. My telephone is 638-9057 or 637-6625, fax is 677-8230 and e-mail is huimalama@ixi.com..

E ola ka ha Hawai'i

Kūdani Nihipali
Kūdani Nihipali
PO'o

Post Office Box 190 Hale'iva, Hawai'i 96712-0190





Parsons Brinckerhoff
 Pacific Tower, Suite 3000
 1001 Bishop Street
 Honolulu, HI 96813
 808-537-7084
 Fax: 808-528-2388



Mr. Kumani Nihipali
 September 26, 1996
 Page 2

September 26, 1996

Mr. Kumani Nihipali
 Hui Malama I Na Kupuna 'O Hawaii Nei
 P.O. Box 190
 Hale Iwa, Hawaii 96712-0190

Subject: Kealahoe Parkway Project, North Kona, Hawaii
 Memorandum of Agreement among the Advisory Council on Historic Preservation, Federal Highway Administration, and Hawaii State Historic Preservation Officer

Dear Mr. Nihipali:

Thank you for your letter of August 27, 1996 which was generated by our sending you the current draft of the Memorandum of Agreement (MOA), which is required under Section 106 of the National Historic Preservation Act.

Your first comment requested that Hui Malama be included as a concurring party to the MOA. This request is being forwarded to the State Historic Preservation Officer (SHPO).

Your next comment asked that the Kona Hawaiian Civic Club be consulted regarding treatment of all historic sites, burial sites, and trails, and that they be included as a concurring party. The Kona Hawaiian Civic Club was first briefed on this project in 1994. Since that time, the Club has been sent copies of the archaeological reports and the draft MOA, and was invited to the public hearing on the project held in August, 1995. Your request for this organization to be a concurring party to the MOA is also being forwarded to the SHPO.

Your next comment asked whether there has been an evaluation of the project area as a traditional cultural property as defined in U.S. Department of the Interior, National Park Service, Interagency Resources Division, National Register Bulletin 38, Guidelines for Evaluating and Documenting Traditional Cultural Properties (1994). No such evaluation has taken place. For your information, the SHPO has previously identified all potentially affected archaeological sites as either on or eligible for listing on the National Register of Historic Places.

Finally, you asked whether a determination is needed by the Hawaii Island Burial Council regarding burial site treatment prior to the execution of the MOA. Burial Council approval must be obtained before construction begins, but the preparation of the Burial Treatment Plan is deferred to the design phase, which cannot occur until the

MOA is finalized and the final EIS accepted. Please note that full compliance with the Hawaii Island Burial Council process is stipulation four (4) of the proposed MOA.

If you have any questions, please do not hesitate to call me at 566-2235.

Sincerely yours,
 Parsons Brinckerhoff Quade & Douglas, Inc.


 Jason Kazama
 Planner

cc: Douglas Orimoto, HDOT, HWY-PA
 Pat Phung, FHWA
 Pat McCoy, DLNR, State Historic Preservation Division

BENJAMIN J. CAVITTANO
COMMISSIONER OF DNR



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 8TH FLOOR
HONOLULU, HAWAII 96813

MICHAEL B. WILSON, CHAIRPERSON
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October 28, 1997

Dr. David Atkin
Parsons Brinckerhoff Quade & Douglas, Inc
Pacific Tower, Suite 3000
1001 Bishop Street
Honolulu, Hawaii 96813

LOG NO. 20378
DOC NO. 9710PN09

Dear Dr. Atkin
SUBJECT: Section 4(f) Issues Related to the Proposed Kealahou Parkway
Kealahou, North Kona, Hawaii Island

Per your request this letter follows-up on the meeting on October 21, 1997 that was attended by Jason Yazawa of your firm, Doug Orimoto and Pat Tom of the State Department of Highways, and Ross Cordy (Branch Chief for Archaeology) and Patrick McCoy (Hawaii Island Archaeologist) of my staff

The purpose of the meeting was to discuss the application of Section 4(f) of the Federal Department of Transportation (DOT) Act of 1966 to the proposed Kealahou Parkway. Evidently, the San Francisco office of FHWA is still reviewing the 4f evaluation by the local office of FHWA. In the preferred alignment (Alternative 1) for the proposed parkway, one significant historic site (18185) that is in the project area is recommended for preservation. Therefore, it is our understanding that the issue must be considered whether feasible and prudent avoidance alternatives have been evaluated

In addressing this issue, the nature of the archaeological settlement pattern in this area of Kona needs to be understood. Virtually the entire landscape from the shore up into the forest (well above the project area) is covered with archaeological sites, except where the land surface has been altered (by modern construction, ranch chain dragging, etc.). There was a dense band of habitation sites near the shore in prehistoric times and then another virtually continuous area of agricultural sites (and associated habitations, burials, and some religious sites) above the 700-800 foot contour where rainfall was higher. The intervening area between the shore and the upland fields was quite dry, and sites there included trails connecting the shore and uplands (and associated shelters) and scattered agricultural fields (and shelters) which were probably farmed in different years or wet seasons. This intervening area has a lower site density and with less varied

D. Atkin
Page 2

sites, but it also contains many sites. This elevational pattern continues throughout Kona, for 5-6 miles north of the project and for miles to the south.

Virtually all of the archaeological sites in such areas are considered significant, most solely for their information content. However, some sites are significant for multiple criteria of the National Register of Historic Places -- some also being excellent examples of types, some collectively reflecting broad patterns of prehistory, some for cultural significance, and some for association with famous individuals. Our office's preservation aims in this area have three foci. One, we attempt to preserve the best examples of site types -- in large landscapes and as outlying sets of sites or individual sites. For this area of Kona, the Kaloko-Honokohau National Historic Park provides a large landscape of sites in the coastal and near coastal region. Other sites not found in Kaloko have been preserved along the coast as outlier sites of coastal patterns. And scattered through the uplands, we have worked out preservation agreements which preserve excellent examples of the high rainfall fields and associated houses (small landscape areas), excellent examples of the intervening zone and its sites (small landscapes of drier field types and associated houses), and scattered sets of individual sites (including refuge caves, religious structures, house site types not preserved elsewhere, etc.). Two, cultural significant sites are often preserved -- typically burials and religious sites. This is done in consultation with native Hawaiian groups, and at the State level with the approval of our Hawaii Island Burial Council. Three, areas which contain sets of sites with excellent long-term research value are also occasionally preserved. For example, a large area of upland fields in Central Kona have been set aside for future research work.

In your Kealahou Parkway project, numerous alternative alignments through the dense site areas in the land of Honokohau were evaluated with archaeological reconnaissance studies, and sites clearly meriting preservation were avoided. Archaeological inventory survey was then done on two alignments. The final selection, Alternative 1, contains only one significant site which merits preservation. This site contains some burials which may be near the project area. Extensive consultation occurred with native Hawaiian groups, including our Hawaii Island Burial Council, at different steps in the National Historic Preservation Act, Section 106 process, and mitigation measures were worked out which were acceptable to all parties, and a Memorandum of Agreement was signed.

Additionally, the landowner of the land of Honokohau which surrounds the project area had an archaeological inventory survey done of his land. A number of areas with archaeological sites are being set aside in preservation in his parcel, and some of these areas are not far from your corridor.

Given the above, we believe that an extremely good faith effort was made to find a corridor with the least impact to significant historic sites that merit preservation. It is rare in the Kona areas for

D. Atkin
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projects of this size to impact only one such site. Additionally, consultation efforts were successfully made to mitigate impacts to that one site. If alternative alignments were checked outside of the immediate project area, they would undoubtedly impact more archaeological sites committed to preservation within Honokohau or adjacent Kealahou. It is thus highly unlikely that additional archaeological surveys would be successful in locating an alignment in this area that is free of significant historic sites meriting preservation.

It would seem to us that you have evaluated the 4f issue on alternatives as best as possible, and from our point of view Alternative 11 seems an excellent selection as it will impact only one site slated for preservation and consultation with Hawaiian groups has further mitigated the impacts.

If you have any questions please contact our Branch Chief, Ross Cordy (587-0012) or Hawaii Island archaeologist, Patrick McCoy (587-0006).

Aloha,

LETTER

DON HIBBARD, Administrator
State Historic Preservation Division

PM:ds

c. Doug Onimoto, DOT

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Appendix C.2 - Description of Section 4(f) Resources

DESCRIPTION OF STATE SITE 50-10-28-18185

For descriptive purposes the lava tube will be described from its eastern (mauka) sink (Sink 1) to its western (makai) sink (Sink 5). Chamber designations A and B are given to the main habitation areas adjacent to Sink 1.

Sink 1 provides access into Chambers A and B, extending to the east and west respectively. Chambers A and B are the main habitation areas of the lava tube, as is evidenced by formally constructed subfeatures and an abundance of cultural material. A subsidiary tube, Lateral tube 1, extending off the north side of the main tube is also accessed through Sink 1. The horizontal extent of the sink is approximately 12 m. (40 ft.) E/W by 6.7 m. (22.0 ft.) N/S. The entrance area into Chamber B appears to have been purposely constricted by the construction of two terraces, Subfeatures 1 and 2, which create a formal entrance. The two terraces form a roughly 2.0 m. (6.6 ft.) passageway into Chamber A.

Subfeature 1 terrace occurs along the north side of Chamber A's entrance. It is roughly triangular in shape and measures 1.8 m. (5.9 ft.) N/S by 1.70 m. (5.6 ft.) E/W. The majority of the terrace is constructed under the overhang edge of the sink. The west side of the terrace consists of boulders that are stacked to extend to the ceiling. The east side is constructed of boulders two courses high. The north side abuts the north wall of the lava tube. The surface of this terrace is roughly paved with cobbles. A large hook was observed on the surface of Subfeature 1.

Subfeature 2 terrace occurs along the south side of Chamber A's entrance. The terrace is rectangular in shape and measures 1.0 m. (3.3 ft.) N/S by 6.0 m. (19.8 ft.) E/W. The majority of the terrace is constructed outside of Chamber A within the uncovered sink area. The terrace stands six courses high and is faced on the north side. It runs along the southern wall of the lava tube. The western end of the terrace, in conjunction with Subfeature 1, defines the southern side of the passage way into Chamber A.

A wall segment begins against the east side of Subfeature 2 and 1.0 m. (3.3 ft.) north of the south wall of Chamber A. The wall segment extends to the east for approximately 3.3 m. (10.8 ft.) where it joins Subfeature 3. The wall segment is one to two courses high. The area from the wall to the southern wall of Chamber A is elevated 0.43 m. (1.41 ft.) above the level of the cave floor and is paved. The paving consists of medium sized cobbles.

Subfeature 3 is a north/south-oriented wall, measuring 3.8 m. (12.5 ft.) long, and an associated paved area. The wall is located 3.8 m. (12.5 ft.) east of Chamber A's entrance. It is constructed across the width of the chamber from the north wall to the end of the wall extending from the east side of Subfeature 2. The area enclosed by these two walls to the west is completely paved with small cobbles and pebbles.

Subfeature 4 is a second paved area located due-east of Subfeature 3. This pavement extends east for 2.6 m. (8.5 ft.). On the southern edge a rock alignment extends the same distance from the southeast corner of Subfeature 3.

No cultural material was observed beyond the structural complex of Chamber A. The eastern portion of the tube continues beyond the northern boundary of the project and its floor becomes exceedingly rough and its ceiling heights low.

Chamber B, accessed through the west side of Sink 1, contains three prominent structures designated Subfeatures 5 through 7. The chamber is well lit due to its location between both Sinks 1 and 2. The chamber measures an average 5.0 m. (16.5 ft.) wide with a maximum ceiling height of 2.0 m. (6.6 ft.). Entrance 2 is located 10 m. (33 ft.) west of Chamber B's entrance; it is a small opening in the tube ceiling which measures 1.0 m. (3.3 ft.) in diameter. Two test units were excavated within Chamber B, within and immediately northwest of Subfeature 5.

Subfeature 5 is a cobble and small boulder terrace located in the eastern portion of Chamber B, within the light zone of Entrance 1. It is raised along its west side and constructed adjacent to the south wall of the lava tube and flush to the tube floor along its east and north sides. It measures 2.0 m. (6.6 ft.) N/S by 3.0 m. (9.9 ft.) E/W. A basalt hammerstone was collected from the cave floor to the northwest of the terrace.

Subfeature 6 is a terrace located 5.0 m. (16.5 ft.) west of Subfeature 6 and immediately east and beneath Entrance 2. The terrace has a one-course boulder perimeter and pebble and cobble surface pavement. It is constructed flush to the tube floor on its north side and is raised along its east, south and west sides. A ledge occurs along the north wall of the tube immediately north of the terrace. Beneath the ledge, somewhat continuous of the terrace's paved surface, the tube floor is paved with pebbles and cobbles. This paving measures 12.0 m. (39.6 ft.) E/W by 2.0 to 3.0 m. (6.6 to 9.9 ft.) N/S. Artifacts collected from the paving include twelve gourd fragments, an urchin spine file and a basalt anchor stone. One of the gourd fragments contains two adjacent drilled holes. Two green and brown historic bottles were observed.

Subfeature 7 is terrace defined by a cobble and boulder facing which is constructed beneath or adjacent to the dripline edge of the west and north side of Entrance 1's sink area. The terrace extends beneath a ledge formed along the northern side of the sink. It measures total length of roughly 10 m. (33 ft.). The northern side of the terrace runs adjacent to the opening to Lateral tube 1.

Lateral tube 1 extend in a C-shaped configuration from Entrance 1 to just west of Entrance 2, where it rejoins the main tube. It measures approximately 30 m. (99 ft.) in length with an average width of 4.0 m. (13.2 ft.).

Subfeature 8 is located within Lateral tube 1's opening from Sink 1. It is a terrace constructed of a raised, cobble facing along its north side and a paved surface. Its east and west sides are constructed against the tube's walls and its

south side lies against the raised face of Subfeature 7. It measure 2.0 m. (6.6 ft.) in diameter.

Approximately 18 m. (59 ft.) northwest from Lateral tube 1's opening at Sink 1, is a small semi-circular alignment of cobbles abutting the north wall of the lateral tube. These type of alignments were observed in other lava tubes in the vicinity and are interpreted as foundations for water collection.

Midden, including *kukui* and urchin shells, was observed throughout the later tube with the greater concentrations present within the light zones adjacent to Sink 1 and 2.

The main tube of Site -18185 continues approximately 25.0 m. (82.5 ft.) west of Sink 1 and 14.0 m. (46.2 ft.) west of Sink 2 where Sink 3 is encountered. Sink 3 measures 12.0 m. (39.6 ft.) E/W by 4.0 m. (13.2 ft.) N/S.

Subfeature 9 is located immediately east of Sink 3's eastern edge. It is constructed of cobble facing along its east side and roughly filled with cobbles and boulders on its surface. It appears to serve as a retaining wall to the stone rubble in the sink floor (Entrance 3). The facing extends 2.0 m. (6.6 ft.) from the south wall of the lava tube to a large boulder slab.

Along the northern wall of the main tube, immediately west of Sink 3, is a panel of petroglyphs. The petroglyphs are pecked into a smooth vertical surface of the pahoehoe over an area measuring 2.0 m. (6.7 ft.) long by 0.3 m. (0.98 ft.) wide. A total of six petroglyphs were observed including human, animals and geometric shapes. Two human figures were represented. One appears to be carrying a hook-shaped item in each hand with a dot inside the hook. Both human figures have stylized, bowed legs and arms. Two animals are represented including a bushy-tailed dog and a possible bird. The geometric forms include a circle and square; other less distinguishable pecked depression are present.

Subfeature 10, a boulder terrace, is located approximately 6 m. (13 ft.) southwest of the petroglyphs and 3.0 m. (9.9 ft.) west of the western edge of Sink 3. It consists of an alignment of cobbles that are arranged in a rough circle; the south wall of the lava tube completes the enclosure. Soil was observed in the center and to the west of the alignment. Directly above the southwest corner of the alignment is a smooth pahoehoe overhang where two, pecked bowl-shaped depressions occur.

The main tube continues approximately 25.0 m. (82.5 ft.) west of Sink 4, at which point it emanates into three smaller tubes: two of these tubes merge immediately at Entrance 4, but are constricted by ceiling collapse; the third tube extends north for 5.0 m. (16.5 ft.) and east for roughly 10 m. (33 ft.). One crab claw was observed in the third tube. Easier access into the remaining western portion of the lava tube is achieved from the ground surface, through Sink 4.

Sink 4 measures roughly 1.0 m. (3.3 ft.) in diameter. The main tube continues approximately 70 m. (231 ft.) southwest of Sink 4 until further access becomes

blocked at Sink 5. Six burials (Burials 1 through 6) were identified between Sinks 4 and 5.

Approximately 25.0 m. (82.5 ft.) southwest of Sink 4, the main tube splits into two smaller tubes. These smaller tubes run in a parallel direction (southeast and northwest of each other) for roughly 30 m. (99 ft.) until rejoining. Each of the tubes are similar in size averaging 5.0 m. (16.5 ft.) wide and roughly 1.0 m. (3.3 ft.) high.

Burial 1 is located 35.0 m. (115.5 ft.) southwest of Sink 4, within the tube situated in the southeast. The burial consists of a single cranium fragment exposed beneath a constructed wall; a terrace (Subfeature 11) is adjacent to the wall. The wall extends across the width of the tube and rises from the tube floor to its ceiling; restricted access occurs through a small collapsed opening at the center of the wall. Two cowrie shell fragments were observed 3.0 m. (9.9 ft.) southwest of the wall.

Subfeature 12 terrace occurs immediately northeast of the Burial 1 wall. It measures 3.0 m. (9.9 ft.) NE/SW by 5.0 m. (16.5 ft.) and is well faced along its northeast side with two courses of cobbles. Its uneven surface contains a slight depression.

Burial 2 is located on a naturally-formed shelf in the northwest wall of the southeast tube, approximately 5.0 m. (16.5 ft.) southwest of Burial 1. The burial consists of a cranium and various long bone fragments.

Burial 3 is located 9.0 m. (29.5 ft.) southwest of Burial 2, where the two diverting tubes rejoin. The burial is situated directly on the rough lava floor and consists of long bones and other unidentified bone fragments.

Burial 4 is located 2.0 m. (6.6 ft.) west of Burial 2. This burial is poorly preserved and identified only by the presence of bone dust.

Burial 5 is located at 5.0 m. (16.5 ft.) north of Burials 3 and 4, against the northwest wall of the northwest lava tube. The burial consists of poorly preserved long bones and one pelvis bone.

Burial 6 is located approximately 20 m. (66 ft.) southwest of Burials 3 through 5, against the southeast wall of the main tube. The burial is situated on a small shelf of the tube wall and is surrounded by a single alignment of cobbles. The burial consists of cranial fragments and various long bones.

The main tube continues approximately 35.0 m. (115.5 ft.) southeast of Burial 6 to Sink 5. Access into the lava tube from Sink 5 is very restrictive due to collapse and a narrow opening. No cultural material was identified in the southwestern end of the lava tube, beyond Burial 6.

DESCRIPTION OF STATE SITE 50-10-28-18749

The entrance to the tube is horizontal and measures 2.5 m. (8.2 ft.) NE/SW by 0.5 m. (1.6 ft.) NW/SE. The floor of the tube is 1.2 m. (3.3 ft.) below the entrance. The tube extends east and west from the entrance. The east portion, which is easily accessible, contains two formal terraces and a human burial. The west portion, which is very difficult to access, contains no modification and only a sparse amount of midden and charcoal.

The east portion of the tube measures 27.0 m. (92.2 ft.) EW by 5.0 to 9.7 m. (16.4 to 31.8 ft.) N/S. Ceiling heights range from 0.8 to 1.5 m. (2.6 to 4.9 ft.). Modifications consist of two terraces, one below the tube entrance and one near the east end of the tube. The terrace at the entrance measures 4.0 m. (13.1 ft.) N/S by 3.5 m. (11.5 ft.) E/W with a maximum faced height along the south side of 0.5 m. (1.7 ft.). The terrace is constructed against the northwest slope beneath the tube entrance. This terrace consists of a large and medium boulder facing with a cobble and pebble pavement. The terrace at the end of the tube measures 3.0 m. (9.8 ft.) N/S by 3.0 m. (9.8 ft.) E/W with a maximum height of 0.7 m. (2.3 ft.) along the west side. This terrace abuts slopes along the south and east edges of the tube. It is constructed of a medium and large boulder perimeter with a level cobble pavement.

Though the scattered bone fragments are in two separate locations, this is considered a single burial based on the distribution of bone types. The present bone distribution may be the result of scavenging. Remains located 10.0 m. (32.8 ft.) northeast of the tube entrance in an area measuring 1.0 m. (3.3 ft.) N/S by 3.5 m. (11.5 ft.) E/W include the following:

- at the eastern end of the bone scatter: proximal end right femur;
- in the east central section: great toe left, talus left, navicular left, and numerous phalange and metatarsal fragments;
- in the central portion: numerous fragments of os coxae, fibula, and unidentifiable fragments;
- in the west portion: numerous unidentifiable fragments and one os coxae fragment.

Remains located 1.5 m. (4.9 ft.) northeast of the tube entrance in an area measuring 1.0 m. (3.3 ft.) N/S by 1.5 m. (4.9 ft.) E/W include carpal bones, middle and distal phalanges, and skull fragments.

The portion of the lava tube extending west from the tube entrance narrows significantly to 0.4 m. (1.3 ft.) wide and 0.3 m. (1.0 ft.) wide. This portion revealed no modification. A few flecks of charcoal and midden including *kukui* and sea urchin were encountered throughout.

DESCRIPTION OF STATE SITE 50-10-28-18750

Feature A is a lava tube that is situated in the northeastern portion of the site complex. The tube entrance opens east (mauka) from a small sink. The sink area measures 2.8 m. (9.2 ft.) N/S by 3.0 m. (9.8 ft.) E/W. The entrance is located along the southern portion of the sink and measures 2.0 m. (6.6 ft.) E/W with a maximum height of 1.7 m. (5.6 ft.). The tube extends to the west of the entrance with an overall length of approximately 11.5 m. (37.7 ft.). Ceiling heights within the tube range from 0.5 m. (1.6 ft.) to 1.7 m. (5.6 ft.). Between the entrance and approximately 6.0 m. (19.7 ft.) to the west, the tube has a average width of 2.5 m. (8.2 ft.). The floor of the tube within this region is fairly level soil with cobbles and pebbles scattered on the surface. Between 6.0 m. (19.7 ft.) and the end of the tube the floor of the tube is covered with ceiling collapse. The floor steeply slopes toward the ceiling. The rear portion of the tube has a average width of 6.0 m. (19.7 ft.). Large quantities of cultural material including marine shell midden, *kukui*, bone fragments, fish scales, volcanic glass, *opihī*, coral, metal fragments, and charcoal were observed within the level soil area in the front portion of the tube. A 0.5 m² (.15 feet) test unit was placed in Feature A.

Feature B is a modified sink located directly to the west (approximately 6.5 m. (21.3 ft.)) from the entrance of Feature A. The modification consists of the in-filling of a sink and this forms a roughly level boulder pavement. The modification measures 8.0 m. (26.2 ft.) E/W by 6.0 m. (19.7 ft.) N/S. There is a semi-circular depression in the eastern portion of the modification that is approximately 0.3 m. (1.0 ft.) in depth and 2.0 m. (6.6 ft.) in diameter. The sink is apparently the western portion of Feature A that has collapsed. The semi-circular depression may have at one time connected with the western extent of Feature A. No midden or artifacts were observed in association with Feature B. The feature is in fair condition and is deemed to have fair to good excavation potential. Feature B is categorized as an agricultural feature.

Feature C is a lava tube that is located directly to the west of Features A and B. It is located approximately 15 m. (49 ft.) from the western extent of Feature B. Access to the tube was obtained by removing approximately four or five large pahoehoe boulders. The tube extends both to the east and the west of the entrance. The western extent of the tube was explored. No cultural material was observed in this portion of the tube and it was effectively inaccessible. To the east of the entrance the tube extends for 24.0 m. (78.7 ft.) at which point it becomes inaccessible. The tube width averages 3.0 m. (9.9 ft.) and ceiling heights range from 1.4 m. to 0.4 m. (4.6 ft. to 1.3 ft.). The floor of the tube is barren and the only cultural materials observed was a *kukui* nut fragment, a cowrie fragment (*Cypraea* sp.), and a sea urchin fragment. At the eastern end of the tube, deteriorated human remains were observed. Portions of the burial that were identifiable include a portion of the right mandible, three metatarsal, five foot phalanges (the majority being proximal), the right calcaneus, both talus, four metacarpal, fragments of the os coxae, eight rib fragments, four vertebral fragments, one sacral vertebrae fragment, and numerous unidentifiable fragments. The burial was apparently missing all of the long bones and all of the skull except for the portion of the right mandible. The lava tube is designated as a burial feature. No artifacts were observed in association with the feature.

Feature D comprises two small platforms situated in the center of the complex approximately 2.0 m. (6.6 ft.) from the northern platform to the southwest corner of feature B. Both platforms measure approximately 1.6 m. (5.1 ft.) in diameter and they are approximately 1.0 m (3.3 ft.) apart along a north south access. The southern platform is constructed of stacked medium to small boulders. It is well faced on all sides with a maximum height of 0.6 m (2.0 ft.) and the surface is paved with cobbles. The northern platform is constructed similarly to the southern platform but is only faced along the north and west sides with a maximum height of 0.5 m. (1.6 ft.). The surface of the platform is boulder paved. A 1.0 m. by 1.0 m. (3.3 ft. to 3.3 ft.) test unit was excavated in the southern platform.

Feature E consists of two wall segments that abut a pahoehoe outcrop bluff located along the western portion of the site complex. The southern wall measures approximately 11. m. (36 ft.) N/S with a maximum width of 0.5 m. (1.6 ft.). The wall is constructed of piled medium to small pahoehoe boulders and cobbles. No facing was apparent along the length of the wall. The northern wall measures 16.0 m. (52.5 ft.) SW to NE with a average width of 0.6 m. (2.0 ft.). The wall is constructed of stacked and piled pahoehoe boulders. Large portions of the wall have been tumbled and wall heights range from 0.4 m. to 1.0 m. (1.3 ft. to 3.3 ft.). Both walls are in poor condition and no artifacts or midden were observed in association with this feature.

Feature F consists of four small platforms situated in the eastern portion of the complex. The platforms range in size from 4.0 m. by 1.5 m. (13.1 ft. to 4.9 ft.) to 1.5 m. square (4.9 ft.). The platforms range in height from 0.6 m. to 0.8 m. (2.0 ft. to 2.6 ft.). The platforms are constructed of stacked pahoehoe boulders and all of the platforms are faced along some portion of there extent. All of the platforms are paved with cobbles. No artifacts or midden were observed in association with the site and the platforms are in good condition. Feature F is designated as a agricultural feature due to the results of testing in Feature D.

Feature G comprises several clearing mounds located throughout the site complex. The mounds range in size from 1.5 m. to 3.0 m. (4.9 ft. to 9.8 ft.) in diameter with heights ranging from 0.2 m. to 1.0 m. (0.7 ft. to 3.3 ft.). The mounds are constructed of stacked and piled pahoehoe boulders. The mounds are functionally interpreted as agricultural. No artifacts or midden were observed in association with the feature.

Feature H is a terrace located in the southern central portion of the site complex. It measures 3.6 m. (11.8 ft.) N/S by 1.7 m. (5.6 ft.) E/W. The terrace is constructed of stacked boulders and cobbles with the surface being roughly paved with boulders. The terrace abuts a portion of outcrop along the western side and has a maximum height of 0.8 m. (2.6 ft.) along the eastern side. The terrace is functionally designated agricultural. No artifacts or midden were observed in association with the feature. The feature is in fair condition.

Appendix C.3 - Fully Executed Memorandum of Agreement

MEMORANDUM OF AGREEMENT
Among the
ADVISORY COUNCIL ON HISTORIC PRESERVATION
FEDERAL HIGHWAY ADMINISTRATION and
HAWAII STATE HISTORIC PRESERVATION OFFICER
Regarding the Kealakehe Parkway Project
North Kona, Hawaii, Hawaii

WHEREAS, the Federal Highway Administration (FHWA) has determined that the proposed Kealakehe Parkway from Mamalahoa Highway to Queen Kaahumanu Highway in North Kona, Hawaii will have an effect on fifty-four (54) historic properties included in or eligible for listing on the National Register (NR) of Historic Places, and has consulted with the Hawaii State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation (Council) pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f); and

WHEREAS, the State of Hawaii Department of Transportation (HDOT) and the Office of Hawaiian Affairs (OHA) participated in the consultation and have been invited to concur in this Memorandum of Agreement;

NOW, THEREFORE, FHWA, the SHPO, HDOT, and OHA agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effects of the undertaking on historic properties.

STIPULATIONS

FHWA will ensure that the following measures are implemented.

1. FHWA will ensure the development of an archaeological data recovery plan that is consistent with the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (48 CFR 44734-37) and takes into account the Council's publication, Treatment of Archaeological Properties (Advisory Council on Historic Preservation, 1980) and the SHPO's minimal standards for archaeological data recovery. Forty (40) sites will be subjected to data recovery work. The data recovery plan shall specify, but not be limited to:
 - sites to be data recovered (see Attachment 1);
 - the research questions to be addressed through the data recovery, with an explanation of their relevance and importance;
 - the methods to be used, with an explanation of their relevance to the research questions;
 - contents of the archaeological data recovery report;
 - the report review procedures;
 - a report completion date;
 - proposed distribution of the results; and

- proposed methods by which native Hawaiian groups will be notified when the work is beginning and provided a summary of the report findings.

FHWA will review the data recovery plan and submit it to the SHPO for 30 days review. Unless the SHPO objects within 30 days after receipt of the data recovery plan, the FHWA shall ensure that the plan is implemented as proposed. If SHPO objects, the plan shall be revised and resubmitted to SHPO for another 30 day review period.

2. FHWA will ensure that all archaeological materials and records are curated by an institution acceptable to the SHPO and OHA in accordance with 36 CFR Part 79.
3. FHWA will ensure the development of an interpretive preservation plan for four trails (State Sites 50-10-27-00002; -27/28-13006; -27-13194; and -28-18099). The interpretive preservation plan will generally entail the following: signage which identifies the trail; access points, if possible; stabilization of trail sections; and minor reconstruction of portions of the trail from edge of roadway to right of way. Because the two ahupua'a kerbstone trails (-13006 and -18099) are known to extend well beyond the road corridors where sections of these trails are in better structural condition, it is proposed that the trails sections crossed by the Parkway not be preserved.

Since these trails are culturally significant to native Hawaiians, native Hawaiian groups and individuals, descendants or tenants within the ahupua'a, who have requested participation, will be involved in the preparation of the plan. Documentation will be kept and supplied to the SHPO indicating groups who were involved and any recommendations they may have had.

The plan shall be submitted to the SHPO and OHA for approval.

4. State Site 50-10-28-18185, with burials, is to be preserved. FHWA will ensure the development of a Burial Treatment Plan for State Site 50-10-28-18185. After completion of a draft plan, FHWA will submit the plan to the SHPO, which will review the plan and forward it to the Hawaii Island Burial Council for its review. The Hawaii Island Burial Council will notify the FHWA when it is prepared to meet and discuss the details of the plan. Following consultations with the Hawaii Island Burial Council and native Hawaiian groups, including but not limited to the Office of Hawaiian Affairs, Hui Malama I Na Kupuna O Hawaii Nei, and any familial or lineal affiliation with ancestral Hawaiian remains interred in the burial site, FHWA will finalize the burial treatment plan.
5. Should a party to this agreement object within 30 days to any plans provided for review or actions proposed pursuant to this agreement, the FHWA shall consult with the objecting party to resolve the objection. If the FHWA determines that the objection cannot be resolved, the FHWA shall forward all documentation relevant to the dispute to the Council. Within 30 days after receipt of all pertinent documentation, the Council will either:

Provide the FHWA with recommendations, which the FHWA will take into account in reaching a final decision regarding the dispute; or

Notify the FHWA that it will comment pursuant to 36 CFR 800.6(b), and proceed to comment. Any Council comment provided in response to such a request will be taken into account by the FHWA in accordance with 36 CFR 800.6(c)(2) with reference to the subject of the dispute.

Any recommendations or comments provided by the Council will be understood to pertain to the subject of the dispute; however, the FHWA's responsibility to carry out all actions under this agreement which are not subject to dispute will remain unchanged.

6. Any party to this MOA may request that it may be amended, where upon the parties will consult in accordance with 36 CFR 800 to consider such amendment.

Execution of this Memorandum of Agreement by the FHWA and the Hawaii SHPO, its subsequent acceptance by the Council, and implementation of its terms, evidence that the FHWA has afforded the Council an opportunity to comment on the Kealakehe Parkway Project and its effects on historic properties, and that the FHWA has taken into account the effects of the undertaking on historic properties.

FEDERAL HIGHWAY ADMINISTRATION

By: *Abraham Wong* Date: 1/9/97
Abraham Wong, Division Administrator

HAWAII STATE HISTORIC PRESERVATION OFFICER

By: *Michael D. Wilson* Date: FEB 6 1997
Michael D. Wilson, State Historic Preservation Officer

Concur

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION

By: *Kazu Hayashida* Date: 2/28/97
Kazu Hayashida, Director of Transportation

OFFICE OF HAWAIIAN AFFAIRS

By: *John M. Hui* Date: 9/25/97
(Name and title of singer)

ACCEPTED for the Advisory Council on Historic Preservation

By: *Robert E. Bush* Date: 11/13/97
Robert E. Bush, Executive Director



**ATTACHMENT 1
MEMORANDUM OF AGREEMENT
ARCHAEOLOGICAL RESOURCES RECOMMENDED FOR
DATA RECOVERY**

State Site #	Site Type	Function	Probable Age
50-10-28-18178	Site complex	Hab.(R); Agriculture	PH
	Platform	Hab. (R)	
	C shaped enclosure Lava blister	Hab. (R)	
	Rectangular enclosure	Agriculture	
50-10-28-18182	C shaped enclosure Lava blister	Hab. (R)	
	Site complex	Hab.(P)	PH
	Terrace	Hab. (P)	
	Terrace	Hab. (P)	
	Terrace	Hab. (P)	
50-10-28-18209	Wall segment	Hab. (P)	
50-10-28-18220	Stepping-stone trail	Transportation	???
	Site complex	Hab. (P); Ag.; Water; Special; Rit.	PH
	Terrace	Habitation (P)	
	Rectangular enclosure	Habitation (P)	
	Circular enclosure	Possible well	
	Terrace	Habitation (P)	
	Petroglyphs	Special	
	L shaped enclosure	Agriculture	
	Alignment	Poss. shrine	
50-10-28-18221	Site complex	Agriculture	PH
	Square enclosure	Agriculture	
	Platform	Agriculture	
	Circular enclosure	Agriculture	
50-10-28-18228	Rectangular	Agriculture	
	Site complex	Agriculture; Special	PH
	Modified outcrop	Agriculture	
	Platform	Agriculture work surface	
	Platform	Agriculture work surface	
	Circular enclosure	Agriculture	
	Petroglyphs	Special	
	Petroglyph	Special	
50-10-28-18241	Irregular-shaped enclosure	Agriculture	PH/H
50-10-28-18242	Modified outcrop	Hab. (T)	PH/H
50-10-28-18243	Kerbstone trail	Transportation	PH/H?
50-10-28-18244	Lava blister	Hab. (T)	PH

ATTACHMENT 1
MEMORANDUM OF AGREEMENT
ARCHAEOLOGICAL RESOURCES RECOMMENDED FOR
DATA RECOVERY
(continued)

State Site #	Site Type	Function	Probable Age		
50-10-28-18363	Site complex	Homestead-Hab. (P); Transportation	H		
	Terrace	Homestead-Hab. (P)			
	Wall	Homestead-Hab. (P)			
	Possible cart road	Transportation			
50-10-28-18383	Site complex	Homestead - Hab. (P)	H		
	Rectangular enclosure	Homestead - Hab. (P)			
	Rectangular enclosure	Homestead - Hab. (P)			
	Rectangular enclosure	Homestead - Hab. (P)			
	Rectangular enclosure	Homestead - Hab. (P)			
50-10-28-18384	Rectangular enclosure	Hab.	PH		
50-10-28-18391	Platform	Agriculture	H?		
50-10-28-18393	Site complex	Hab. (P); Ag.	PH		
	Platform	Hab. (P)			
	Terrace	Ag.			
	Rectangular enclosure	Ag.			
		Ag.			
	Wall Segment	Ag.			
	Mound	Ag.			
	Terrace	Ag.			
	Enclosure	Ag.			
	50-10-28-18396	Rectangular enclosure		Hab. (P)	H
	50-10-28-18397	Walled Field Complex		Ag.; Animal Containment	PH/H
50-10-28-18725	Site complex	Ag.; Animal Containment	PH/H		
	Circular enclosure	Ag.; Animal Containment?			
	Rectangular enclosure	Agriculture			
	Rectangular enclosure	Agriculture			
	Wall	Agriculture			
	Rectangular enclosure	Agriculture			
	Rectangular enclosure	Agriculture			
	Irregular-shaped enclosure	Poss. Animal Containment			
	Mounds	Agriculture-Work surface			
	Terrace	Agriculture			
	Irregular-shaped enclosure	Agriculture			
Wall	Agriculture				

ATTACHMENT 1
MEMORANDUM OF AGREEMENT
ARCHAEOLOGICAL RESOURCES RECOMMENDED FOR
DATA RECOVERY
(continued)

State Site #	Site Type	Function	Probable Age
50-10-28-18725	Wall	Agriculture	
	Terrace	Agriculture	
50-10-28-18726	Cart road	Transportation	H
50-10-28-18727	Site complex	Hab. (P); Special;	PH
	Triangular shaped enclosure	Agriculture	
	Irregular shaped enclosure	Hab. (P)	
	Modified outcrop	Agriculture	
	Rectangular enclosure	Hab. (P)	
	Mound	Agriculture	
	Modified outcrop	Agriculture	
	Irregular shaped enclosure	Agriculture	
	Terrace	Agriculture	
	Modified outcrop	Agriculture	
	Terrace	Hab. (P)	
	Terrace	Agriculture	PH
	C shaped enclosure	Hab. (P)	
	C shaped enclosure	Agriculture	
	Platform	Hab. (P)	
	Irregular shaped enclosure	Hab. (P)	
	Square enclosure	Hab. (P)	
	C shaped enclosure	Agriculture	
	Papamu	Special	
	Irregular shaped enclosure	Agriculture	
	Wall	Agriculture	
	Terrace	Hab. (P)	
	Mound	Agriculture	
	Mound	Agriculture	
	Petroglyph	Special	
	Petroglyphs	Special	
	Petroglyph	Special	
50-10-28-18728	Site complex	Homestead-Hab. (P)	H
	Circular domed enclosure	Charcoal oven	
	Terrace	Hab. (P)	
	Platform	Hab. (P)	
	Mound	Agriculture	
	Modified outcrop	Hab. (P)	

ATTACHMENT 1
MEMORANDUM OF AGREEMENT
ARCHAEOLOGICAL RESOURCES RECOMMENDED FOR
DATA RECOVERY
(continued)

State Site #	Site Type	Function	Probable Age	
50-10-28-18729	Site complex	Hab. (R); Ag.; Special; Water	PH/H	
	Terrace	Agriculture		
	Lava Tube	Hab. (R)		
	Wall	Agriculture		
	Terrace	Agriculture		
	Mounds	Agriculture		
	Lava Tube	Hab. (R); water source		
	Terrace	Agriculture		
	Terrace	Agriculture		
	Petroglyph	Special		
	Wall	Agriculture		
	Walls	Agriculture		
50-10-28-18730	Site complex	Hab. (R); Ag.; Animal Pen; Marker	PH/H	
	Wall	Site boundary		
	Terraces	Agriculture		
	Mound	Agriculture		
	Irregular-shaped enclosures	Agriculture		
	Faced depressions	Agriculture		
	Mound	Agriculture		
	Ahu	Marker		
	Oval enclosures	Agriculture		
	Irregular-shaped enclosures	Agriculture		
	Terrace	Agriculture		PH/H
	Wall	Agriculture		
	Pavement	Agriculture work surface		
	L-shaped enclosure	Poss. animal		
	Terrace	Agriculture		
	Wall	Agriculture		
Terrace	Agriculture			
Mound	Agriculture			
Wall	Agriculture			
Pavement	Hab. (R)			
50-10-28-18733	Kerbstone trail	Transportation	PH/H	
50-10-28-18734	Terrace	Hab. (P)	PH	
50-10-28-18735	Lava Tube	Hab. (R); Water source	PH	
50-10-28-18736	Site complex	Hab. (P); Agriculture	PH/H?	

ATTACHMENT 1
MEMORANDUM OF AGREEMENT
ARCHAEOLOGICAL RESOURCES RECOMMENDED FOR
DATA RECOVERY
(continued)

State Site #	Site Type	Function	Probable Age
50-10-28-18736	Mound	Agriculture	
	Mounds	Agriculture	
	Platform	Agriculture	
	Rectangular enclosure	Hab. (P)	
	Mound	Agriculture	
50-10-28-18737	Mound	Agriculture	
	Mound	Agriculture	
	Site complex	Agriculture	PH/H?
	Wall	Agriculture	
	Mound	Agriculture	
	C shaped enclosure	Agriculture	
	Mound	Agriculture	
	Platform	Agriculture	
	Wall segments	Agriculture	
	Mound	Agriculture	
	Terrace	Agriculture	
	Mound	Agriculture	
	Modified outcrop	Agriculture	
	Mound	Agriculture	
	Mounds	Agriculture	
Mound	Agriculture		
Terrace	Agriculture		
50-10-28-18738	Site complex	Hab. (R); Agriculture	
50-10-28-18739	Modified outcrop	Hab. (T); Agriculture	PH
50-10-28-18740	Alignment	Hab. (T)	PH
	Wall segment	Agriculture	
	Mound	Agriculture	
50-10-28-18741	Site complex	Agriculture	
	Platform	Hab. (P)	PH
	Wall segments	Hab. (P)	
	Terrace	Hab. (P)	
	Wall	Hab. (P)	PH
50-10-28-18742	Platform	Hab. (P)	PH
50-10-28-18743	Terrace	Agriculture	PH
50-10-28-18744	Papamu	Special	PH
50-10-28-18745	L shaped Enclosure	Hab. (R)	PH
	Site complex	Agriculture	PH
	Terrace	Agriculture	PH

**ATTACHMENT 1
MEMORANDUM OF AGREEMENT
ARCHAEOLOGICAL RESOURCES RECOMMENDED FOR
DATA RECOVERY
(continued)**

State Site #	Site Type	Function	Probable Age
50-10-28-18745	Terrace	Agriculture	
	Wall Segment	Agriculture	
	Wall Segment	Agriculture	
50-10-28-18757	Site complex	Agriculture	PH
	Wall Segment	Site boundary	
	Wall Segment	Agriculture	
	Wall Segment	Agriculture	
	Wall Segment	Agriculture	
	Terrace	Agriculture	
50-10-28-19627	Mounds	Agriculture	
	Platform	Hab.	PH
50-10-28-19628	Platform	Hab. (P)	PH
50-10-28-19630	Enclosure	Hab. (P)	PH

Sources: Cultural Surveys Hawaii, An Archeological Inventory Survey and Limited Subsurface Testing of the Proposed Kealakehe Parkway Extension, Alternatives 10 and 11, and Addendum Report to Kealakehe Parkway, June 1994.

Notes: SIGNIFICANCE DESIGNATION

- A - Site reflects major trends or events in the history of the state or the nation
- B - Site is associated with the lives of persons significant in our past
- C - Site is an excellent example of a site type
- D - Site may be likely to yield information on prehistory or history

FUNCTION	PROBABLE AGE
Hab. - Habitation	PH - Prehistoric
(P) - Permanent	H - Historic
(R) - Recurrent	PH/H - Prehistoric & Historic
(T) - Temporary	? - Not conclusive
Ag. - Agriculture	
Rit. - Ritual	

APPENDIX D

Farmland Conversion Impact Rating (Form AD-1006)



Memorandum

TO: FILE
FROM: DENEITRA M. GREEN
DATE: FEBRUARY 22, 1994
RE: KEALAKEHE PARKWAY
FORM AD 1006
FARMLAND CONVERSION IMPACT RATING FORM

The Soil Conservation Service (SCS) has indicated that the Kealakehe Parkway Extension project site is not applicable per Form AD 1006 (Farmland Conversion Impact Rating). According to 7 CFR Part 658 - Farmland Protection Policy Act (FPPA), the site does not contain prime or unique farmlands subject to the FPPA. The SCS has therefore indicated 'N/A' on the form (see Part IV, Land Evaluation Information of attachment), and no further action is required.

copy:
Doug Orimolo - SDOT
Robert Miyasaki - PBQD
David Aikin - PBQD
Keith Nakano - PBQD

Over a Century of
Engineering Excellence

FARMLAND CONVERSION IMPACT RATING

U.S. Department of Agriculture
FARMLAND CONVERSION IMPACT RATING
PART I (To be completed by Federal Agency)
Name Of Project: Kealakehe Parkway
Date Of Land Evaluation Request: October 18, 1993
Federal Agency Involved: Federal Highways Administration
County And State: Hawaii County, Hawaii
Date Request Received By SCS:
PART II (To be completed by SCS)
Does this site contain prime, unique, statewide or local important farmland? Yes No
If no, the FPPA does not apply - do not complete additional parts of this form.
Name Of Land Evaluation System Used: SCS
Date Of Local Site Assessment System: 10/22/93
Name Of Local Site Assessment System: SCS
Date Land Evaluation Returned By SCS:
PART III (To be completed by Federal Agency)
A. Total Acres To Be Converted Directly: 52.975
B. Total Acres To Be Converted Indirectly: 56.78
C. Total Acres In Site: 52.975
PART IV (To be completed by SCS) Land Evaluation Information
A. Total Acres Prime And Unique Farmland: 0
B. Total Acres Statewide And Local Important Farmland: 0
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted: 0%
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value: 84.80
PART V (To be completed by SCS) Land Evaluation Criterion
Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points): 17
PART VI (To be completed by Federal Agency)
Maximum Points:
PART VII (To be completed by Federal Agency)
Relative Value Of Farmland (From Part V): 100
Total Site Assessment (From Part VI above or a local site assessment): 160
TOTAL SITE ASSESSMENT POINTS: 160
TOTAL POINTS (Total of above 2 lines): 260
Site Selected:
Date Of Selection:
Was A Local Site Assessment Used? Yes No

APPENDIX E

Coastal Zone Management Act

DIRECTOR'S OFFICE
DEPT. OF
TRANSPORTATION



OFFICE OF STATE PLANNING

Office of the Governor

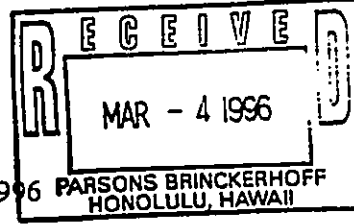
MAILING ADDRESS: P.O. BOX 3540, HONOLULU, HAWAII 96811-3540
STREET ADDRESS: 250 SOUTH HOTEL STREET, 4TH FLOOR
TELEPHONE: (808) 587-2848, 587-2800

FEB 23 1 19 PM '96

BENJAMIN J. CAYETANO, Governor

FAX: Director's Office 587-2848
Planning Division 587-2824

Ref. No. Z-0040



February 20, 1996

HIGHWAY DIVISION
PLANNING BRANCH

FEB 27 12 49 PM '96

STATE DEPARTMENT OF TRANSPORTATION

RECEIVED FEB 23 3 21 PM '96

MEMORANDUM

TO: The Honorable Kazu Hayashida, Director
Department of Transportation

FROM: Gregory G.Y. Pai, Ph.D. *Gregory G.Y. Pai*
Director

SUBJECT: Hawaii Coastal Zone Management (CZM) Program Federal Consistency for the Kealakehe Parkway, North Kona, Hawaii

Your proposal to construct the Kealakehe Parkway with funds from the Federal Highway Administration has been reviewed for consistency with Hawaii's CZM Program. We concur with your CZM assessment and finding that the activity is consistent based on the following conditions.

1. Formal consultation with the U.S. Fish and Wildlife Service (FWS) under section 7 of the U.S. Endangered Species Act has been initiated to ensure that endangered plant species are adequately protected. A mitigation plan for protecting rare, threatened, or endangered plant species, approved by both the Department of Land and Natural Resources - Division of Forestry and Wildlife and the FWS, shall be submitted to the Hawaii CZM Program.
2. According to the Draft EIS (pp. 4-68 & 4-80), mitigation measures for archaeological resources will be incorporated into a Memorandum of Agreement (MOA). The MOA will establish procedures for assuring that archaeological monitoring will be conducted and that agreed mitigation measures, such as the Burial Plan, are implemented. The approved MOA shall be submitted to the Hawaii CZM Program.

CZM consistency approval is not an endorsement of the project nor does it convey approval with any other regulations administered by any State or County agencies. Thank you for your cooperation in complying with Hawaii's CZM Program. If you have any questions, please call our CZM office at 587-2878.

cc: U.S. Fish and Wildlife Service, Pacific Islands Office
Department of Land & Natural Resources, Historic Preservation Division
Department of Land & Natural Resources, Division of Forestry & Wildlife
Planning Department, County of Hawaii

DEPT. OF TRANSPORTATION
HIGHWAY DIVISION

FEB 26 1 47 PM '96

RECEIVED

The following are the objectives and policies of the seven resource areas of the CZM Act.

RECREATION RESOURCES

Objective: Provide coastal recreational opportunities accessible to the public.

Policies

- 1) Improve coordination and funding of coastal recreation planning and management.
- 2) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:
 - a) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;
 - b) Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites and sandy beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;
 - c) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;
 - d) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;
 - e) Encouraging expanded public recreational use of County, State and federally owned or controlled shoreline lands and waters having recreational value;

- f) Adopting water quality standards and regulating point and non-point sources of pollution to protect and where feasible, restore the recreational value of coastal waters;
- g) Developing new shoreline recreational opportunities, where appropriate, such as artificial reefs for surfing and fishing; and
- h) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, County planning commissions; and crediting such dedication against the requirements of Section 46-6.

HISTORIC RESOURCES

Objective: Protect, preserve, and where desirable, restore those natural and man-made historic and pre-historic resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

Policies

- 1) Identify and analyze significant archaeological resources;
- 2) Maximize information retention through preservation of remains and artifacts or salvage operations; and
- 3) Support State goals for protection, restoration, interpretation, and display of historic resources.

SCENIC AND OPEN SPACE RESOURCES

Objective: Protect, preserve, and where desirable, restore or improve the quality of coastal scenic and open space resources.

Policies

- 1) Identify valued scenic resources in the coastal zone management area;

- 2) Insure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;
- 3) Preserve, maintain and, where desirable, improve and restore shoreline open space and scenic resources; and
- 4) Encourage those developments which are not coastal dependent to locate in inland areas.

COASTAL ECOSYSTEMS

Objective: Protect valuable coastal ecosystems from disruption and minimize adverse impacts on all coastal ecosystems.

Policies

- 1) Improve the technical basis for natural resource management;
- 2) Preserve valuable coastal ecosystems of significant biological or economic importance;
- 3) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land user uses, recognizing competing water needs; and
- 4) Promote water quantity and quality planning and management practices which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses which violate State water quality standards.

ECONOMIC USES

Objective: Provide public or private facilities and improvements important to the State's economy in suitable locations.

Policies

- 1) Concentrate in appropriate areas the location of coastal dependent development necessary to the State's economy;
- 2) Insure that coastal dependent development such as harbors and ports, visitor industry facilities, and energy generating facilities are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and
- 3) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such development and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:
 - a) Utilization of presently designated locations is not feasible;
 - b) adverse environmental effects are minimized; and
 - c) Important to the State's economy.

COASTAL HAZARDS

Objective: Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, and subsidence.

Policies

- 1) Develop and communicate adequate information on storm wave, tsunami, flood erosion, and subsidence hazard;
- 2) Control development in areas subject to storm wave, tsunami, flood, erosion, and subsidence hazard;
- 3) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and

- 4) Prevent coastal flooding from inland projects.

MANAGING DEVELOPMENT

Objective: Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

Policies

- 1) Effectively utilize and implement existing law to the maximum extent possible in managing present and future coastal zone development;
- 2) Facilitate timely processing of application for development permits and resolve overlapping or conflicting permit requirements; and
- 3) Communicate the potential short- and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the general public to facilitate public participation in the planning and review process.

APPENDIX F

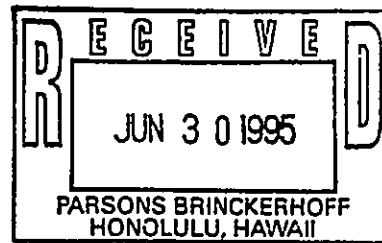
Army Corps of Engineers Correspondence



REPLY TO
ATTENTION OF

Regulatory Branch

DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440



27 June 1995

Ms. Jan Reichelderfer
Parsons Brinckerhoff
Pacific Tower, Suite 3000
1000 Bishop Street
Honolulu, HI 96813

Dear Ms. Reichelderfer:

This is to inform you that we have reviewed the information you faxed to this office on June 22, 1995 regarding the proposed Kealahou Parkway project between Queen Kaahumanu Highway and Mamalahoa Highway, North Kona, Hawaii. The faxed information indicates that the project area does not include any surface water bodies or special aquatic sites, including wetlands. Based on this information, we have determined that the project will not impact waters of the United States and therefore, a Department of Army permit is not required.

File Number NP95-088 has been assigned to this project. Please refer to this number in any future correspondence. If you have further questions regarding this matter, feel free to me at 438-9258 extension 15.

Sincerely,

Kathleen A. Dadey
Environmental Engineer

APPENDIX G

Public Participation

- Appendix G.1 - Notices
- Appendix G.2 - Public Hearing
- Appendix G.3 - Letter to Draft EIS Commentors

Appendix G.1 - Notices

cost of money equal to or less than that available from the sale of Commercial Paper or other bank borrowings.

For the Commission, by the Division of Investment Management, pursuant to delegated authority.

Margaret H. McFarland,
Deputy Secretary.

[FR Doc. 93-5716 Filed 3-11-93; 8:45 am]
BILLING CODE 8010-01-M

SMALL BUSINESS ADMINISTRATION

Reporting and Recordkeeping Requirements Under OMB Review

AGENCY: Small Business Administration.

ACTION: Notice of reporting requirements submitted for review.

SUMMARY: Under the provisions of the Paperwork Reduction Act (44 U.S.C. chapter 35), agencies are required to submit proposed reporting and recordkeeping requirements to OMB for review and approval, and to publish a notice in the Federal Register notifying the public that the agency has made such a submission.

DATES: Comments should be submitted within 30 days of this publication in the Federal Register. If you intend to comment but cannot prepare comments promptly, please advise the OMB Reviewer and the Agency Clearance Office before the deadline.

COPIES: Request for clearance (S.F. 83), supporting statement, and other documents submitted to OMB for review may be obtained from the Agency Clearance Officer. Submit comments to the Agency Clearance Officer and the OMB Reviewer.

FOR FURTHER INFORMATION CONTACT:
Agency Clearance Officer: Cleo

Verbillis, Small Business Administration, 409 3rd Street, SW., 5th Floor, Washington, DC 20416, Telephone: (202) 205-6629.

OMB Reviewer: Gary Waxman, Office of Information and Regulatory Affairs, Office of Management and Budget, New Executive Office Building, Washington, DC 20503.

Title: Lender Field Visit Report
Form No.: SBA Form 1183

Frequency: On Occasion
Description of Respondents: Small Businesses

Annual Responses: 14,720
Annual Burden: 14,720

Title: Loan Servicing Field Visit Report
Form No.: SBA Form 712

Frequency: On Occasion
Description of Respondents: Small Businesses

Annual Responses: 45,000

Annual Burden: 45,000

Title: Liquidation Activities

Form No.: N/A

Frequency: On Occasion

Description of Respondents: Auctioneer Contractors

Annual Responses: 2,800

Annual Burden: 28,000

Cleo Verbillis,

Chief, Administrative Information Branch.

[FR Doc. 93-5667 Filed 3-11-93; 8:45 am]

BILLING CODE 8025-01-M

Chicago District Advisory Council; Public Meeting

The U.S. Small Business Administration Chicago District Advisory Council will hold a public meeting from 10 a.m. to 1 p.m. on Thursday, April 22, 1993 at the U.S. Small Business Administration, 500 West Madison Street, suite 1250, Chicago, Illinois, to discuss such matters as may be presented by members, staff of the U.S. Small Business Administration, or others present.

For further information, write or call Mr. John L. Smith, District Director, U.S. Small Business Administration, 500 West Madison Street, Chicago, Illinois 60661-2511, (312) 353-4508.

Dated: March 8, 1993.

Dorothy A. Overal,

Acting Assistant Administrator, Office of Advisory Councils.

[FR Doc. 93-5869 Filed 3-11-93; 8:45 am]

BILLING CODE 8025-01-M

Houston District Advisory Council; Public Meeting

The U.S. Small Business Administration Houston District Advisory Council will hold a public meeting at 9 a.m. on Wednesday, March 31, 1993 at Texas Commerce Bank—Del Oro, 7505 Fannin, 3rd Floor, suite 333, Houston, Texas, to discuss such matters as may be presented by members, staff of the U.S. Small Business Administration, or others present.

For further information, write or call Mr. Milton Wilson, Jr., District Director, U.S. Small Business Administration, 9301 Southwest Freeway, suite 550, Houston, Texas 77074-1591, (713) 773-6500.

Dated: March 8, 1993.

Dorothy A. Overal,

Acting Assistant Administrator, Office of Advisory Councils.

[FR Doc. 93-5668 Filed 3-11-93; 8:45 am]

BILLING CODE 8025-01-M

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Environmental Impact Statement;
North Kona, HI

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of intent.

SUMMARY: The FHWA is issuing this notice to advise the public that an environmental impact statement (EIS) will be prepared for a proposed highway project in North Kona, Hawaii.

FOR FURTHER INFORMATION CONTACT:

William R. Lake, Division Administrator, Federal Highway Administration, Office Address: 300 Ala Moana Boulevard, rm. #3202, Honolulu, Hawaii 96813; Mailing Address: P.O. Box 50206, Honolulu, Hawaii 96850. Telephone: (808) 541-2700.

SUPPLEMENTARY INFORMATION: The FHWA, in cooperation with the Hawaii Department of Transportation, Highways Division will prepare an environmental impact statement on a proposal to construct a new, four-lane divided roadway approximately 2.4 miles long, connecting Mamalahoa Highway and Queen Kaahumanu Highway. This roadway, referred to as Kealakehe Parkway, is generally aligned in an east-west (mauka-makai) direction and is intended to provide a major access road to both Queen Kaahumanu Highway and Mamalahoa Highway/Palani Road from the La'i Opua Planned Community.

Improved access to the corridor is necessary to provide for the existing and projected traffic demand. Since the 2010 projections of traffic volumes along the major roadways in the area exceed existing capacity even without the La'i Opua development, there is need to reduce projected future congestion on the existing roadways. The project will also provide an improved, safe and efficient highway for traffic which now must use Palani Road. Alternatives under consideration include (1) taking no action; and (2) constructing a four-lane, limited access highway on a new location. Incorporated into and studied with the various build alternatives will be design variations of grade and alignment.

Letters describing the proposed action and soliciting comments have been sent to appropriate Federal, State and local agencies, and to private organizations and citizens who have previously expressed or are known to have interest in this proposed project. A public information and scoping meeting was held August 27, 1992 at King

Kamehameha Hotel in Kona, Hawaii. In addition, a public hearing will be held after publication of the draft EIS. Public notice will be given of the time and place of the hearing. The draft EIS will be available for public and agency review and comment prior to the public hearing. A second public scoping meeting is not proposed.

To ensure that the full range of issues related to this proposed action are addressed and all significant issues identified, comments and suggestions are invited from all interested parties. Comments or questions concerning this proposed action and EIS should be directed to the FHWA at the above address.

(Catalog of Federal Domestic Assistance Program Number 20.205, Highway Planning and Construction. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities apply to this program.)

William R. Lake,

Division Administrator, Hawaii.

[FR Doc. 93-5654 Filed 3-11-93; 8:45 am]

BILLING CODE 4910-23-M

DEPARTMENT OF THE TREASURY

Office of the Comptroller of the
Currency

[Docket No. 93-05]

Report to the Congress Regarding the Differences in Capital and Accounting Standards Among the Federal Banking and Thrift Agencies

AGENCY: Office of the Comptroller of the Currency, Treasury.

ACTION: Report to the Committee on Banking, Housing, and Urban Affairs of the United States Senate and to the Committee on Banking, Finance and Urban Affairs of the United States House of Representatives regarding differences in capital and accounting standards among the federal banking and thrift agencies.

SUMMARY: The Office of the Comptroller of the Currency (OCC) has prepared this report as required by the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA). FDICIA requires the OCC to provide a report to Congress on any differences in capital standards among the federal financial regulatory agencies. This notice is intended to satisfy the FDICIA requirement that the report be published in the Federal Register.

FOR FURTHER INFORMATION CONTACT: Robert Hemming, National Bank Examiner, Office of the Chief National

Bank Examiner, (202) 874-5170, or Ronald Shimabukuro, Senior Attorney, Banking Operations and Assets Division, (202) 874-4480, Office of the Comptroller of the Currency, 250 E Street, SW., Washington, DC 20219.

SUPPLEMENTARY INFORMATION: Section 121 of FDICIA, Public Law 102-242, 105 stat. 2236 (December 19, 1991), requires each federal banking agency to report annually to the Committee on Banking, Housing, and Urban Affairs of the Senate and the Committee on Banking, Finance and Urban Affairs of the House of Representatives on any differences between the capital standards used by the OCC and the capital standards used by the other financial institutions supervisory agencies. The text of that report is provided as follows:

Differences in Capital and Accounting Standards Among the Federal Banking and Thrift Agencies

Report to the Committee on Banking, Housing, and Urban Affairs of the United States Senate and to the Committee on Banking, Finance, and Urban Affairs of the United States House of Representatives

This annual report details the differences in the capital requirements of the OCC, the Federal Reserve Board (FRB), the Federal Deposit Insurance Corporation (FDIC) and the Office of Thrift Supervision (OTS). Representatives of each of the agencies meet regularly to discuss capital issues as part of an ongoing effort to promote consistent interpretation and application of capital requirements and to develop uniform capital standards.

This report is divided into two sections. The first section discusses the differences in the capital standards; the second section discusses the differences in accounting standards.

A. Differences in Capital Standards Among the Federal Financial Institution Regulatory Agencies

Prior to the promulgation of the risk-based capital guidelines, the federal banking agencies imposed a leverage capital standard based on the ratio of primary and secondary capital to total assets. Primary capital was defined principally as permanent shareholders' equity, general loan loss reserves, and certain mandatory convertible securities. Generally, banks were required to maintain a level of primary capital of at least 5.5 percent of total assets and a level of total capital (primary plus secondary capital) of at least 6 percent of total assets.

In 1989 the banking agencies and OTS adopted the risk-based capital

guidelines. Unlike the leverage capital requirements, the risk-based capital guidelines impose capital requirements based on the credit risk profiles of the assets held by an institution and provide a means to measure off-balance sheet risks. In addition, the risk-based capital guidelines revised the definition of capital by replacing primary and secondary capital with Tier 1 and Tier 2 capital. Once fully phased in at the end of 1992, the risk-based capital guidelines will require banking and thrift institutions to maintain total capital of at least 8 percent of risk-weighted assets. The risk-based capital guidelines implement the Accord on International Convergence of Capital Measurement and Capital Standards of July 1988, as reported by the Committee on Banking Regulation and Supervisory Practice (Basle Accord).

After the promulgation of the risk-based capital guidelines, the agencies also revised the leverage capital requirements by similarly replacing the definitions of primary and secondary capital with the risk-based capital definitions of Tier 1 and Tier 2 capital. The leverage capital requirements work in conjunction with the risk-based capital guidelines and impose minimum capital requirements regardless of the risk weights of the assets held by the institution.

Although the agencies have adopted common leverage capital requirements and risk-based capital guidelines, there remain some technical differences in language and interpretation of the capital standards among the agencies. These minor differences are detailed below.

1. Leverage Capital Requirements

Aside from the risk-based capital guidelines, the banking agencies and the OTS impose an additional leverage capital requirement. Under the leverage capital requirements of the banking agencies the most highly-rated banks must maintain a minimum leverage capital ratio of 3 percent of Tier 1 capital to total assets; all other banks are required to maintain capital of an additional 100 to 200 basis points.

As required by the Financial Institution Reform, Recovery and Enforcement Act (FIRREA), the OTS has established a 3 percent core capital ratio and a 1.5 percent tangible capital leverage requirement for thrift institutions. The OTS, however, is currently in the process of finalizing a new leverage rule that will generally conform with the rules of the banking agencies. The differences that will exist after the promulgation of the final OTS leverage requirement will pertain to the

Hawaii Notices

SEPTEMBER 8, 1995

Hilo, Hawaii 96720
Contact: Sidney M. Fuke (969-1522)

Public Challenge

Deadline: October 9, 1995
Status: Negative Declaration issued, project may be implemented.

The National Astronomical Observatory of Japan is proposing an astronomy base facility for the Subaru Observatory in Hawaii on leased land owned by the State of Hawaii, assigned to the University of Hawaii at Hilo.

Subaru Observatory is presently being constructed atop Mauna Kea on Hawaii Island. The support and research staff would be based at this proposed facility.

The facility would be built on a vacant 3.8 acre portion of a 202.736 acre parcel located within the University's research and technology park. The subject parcel is located on the makai side of Komohana Street and mauka of the University, Waiakea, South Hilo. The parcel is designated for University use on the Hawaii County General Plan Land use Pattern Allocation Guide Map.

Preliminary plans reflect a two-story facility, consisting of 36,800 square feet, 92 parking stalls, and landscaping improvements. Construction would occur in two phases, with estimated cost at \$10 to \$12 million.

No adverse environmental, social, and economic impacts are anticipated with the construction of the proposed astronomy base facility.

Environmental Impact Statement Preparation Notices

(3) Hamakua Lower Ditch Watershed Project

District: Hamakua
TMK: 4-3 to 4-8, 3rd Division
Applicant: Department of Agriculture
P. O. Box 22159
Honolulu, Hawaii 96823-2159
Contact: Paul Matsuo (973-9473)

**Accepting
Authority:** Governor, State of Hawaii

c/o Office of Environmental Quality Control
220 South King Street, Suite 400
Honolulu, Hawaii 96813

Cooperating Agency:

U.S.D.A. Natural Resources
Conservation Service
P. O. Box 50004
Honolulu, Hawaii 96850
Contact: Kenneth Kaneshiro (541-2601)

Public Comment

Deadline: October 9, 1995
Status: First Notice, pending public comment.

The project will make major improvements to the existing 26-mile long Lower Hamakua Ditch system by replacing, renovating and rehabilitating intakes, flumes, tunnels and open ditches. These improvements will allow the continued delivery of agricultural water to support the transformation of former sugar lands into diversified agriculture farms, and to provide employment opportunities for former Hamakua Sugar Plantation workers.

The project will take into consideration the return of excess waters to the streams for enhancement of Waipio Valley's environment and will return the Hiilawe Falls to its original state.

This project will be implemented under authority of Public Law 83-566 and will be a federally assisted project through the U.S.D.A. Natural Resources Conservation Services.

Draft Environmental Impact Statements

(4) Kealakehe Parkway From Mamalahoa Highway To Queen Kaahumanu Highway New Four-Lane Urban Arterial

District: North Kona
TMK: 7-4-2:8; 7-4-6:12; 7-4-8:47, 5, 60, 13, 17
Applicant: Department of Transportation, Highways
Division
Planning Branch
600 Kapiolani Boulevard, Suite 304
Honolulu, Hawaii 96817

Hawaii Notices

SEPTEMBER 8, 1995

Contact: Ronald Tsuzuki (587-1830)
Accepting Authority: Governor, State of Hawaii
c/o Office of Environmental Quality Control
220 South King Street, Suite 400
Honolulu, Hawaii 96813
Consultant: Parsons Brinckerhoff Quade and Douglas
Inc.
1001 Bishop Street, Suite 3000
Honolulu, Hawaii 96813
Contact: Keith Nakano (566-2217)

Public Comment

Deadline: Extended to September 22, 1995
Status: Fourth Notice, pending public comment.

The Highways Division of the State of Hawaii Department of Transportation (SDOT) and the Federal Highway Administration (FHWA) are proposing the construction of a new, four-lane urban arterial in the North Kona District of Hawaii County, Hawaii. The proposed roadway would extend east (mauka) from the State of Hawaii Housing Finance and Development Corporation's (HFDC) planned community, the Villages of La'i 'Opua, and terminate at Mamalahoa Highway. The roadway system within the Villages of La'i 'Opua includes an existing portion of Kealakehe Parkway that connects to Queen Kaahumanu Highway. The proposed roadway would continue east (mauka) and terminate at Mamalahoa Highway. Upon completion, the entire Kealakehe Parkway would extend east (mauka) from the intersection of Queen Kaahumanu Highway and Honokohau Harbor Road to a point near the intersection of Mamalahoa Highway and Old Mamalahoa Highway.

The newly constructed Kealakehe Parkway would satisfy four types of needs:

- system linkage;
- existing transportation demand and capacity;
- safety; and
- economic development.

The proposed project would consist of four elements:
• a four-lane urban arterial that would extend between Mamalahoa Highway and the portion of Kealakehe Parkway within the Villages of La'i 'Opua. Based upon a screening process in which 14 build alternatives were considered, two alternative alignments, each approximately 4.0 kilometers (2.5 miles) in length, are addressed in detail in the draft EIS;

• improvements to the existing and future intersections of Palani Road, Old Mamalahoa Highway, Mamalahoa Highway and Kealakehe Parkway;

- at-grade improvements to the intersection of Queen Kaahumanu Highway and Kealakehe Parkway; and
- a construction detour road at the eastern (mauka) terminus of Kealakehe Parkway. The detour road would maintain traffic flow during the construction of the eastern (mauka) terminus of the project. After completion of the project, portions of the detour road would remain to provide access to a small number of existing residential units.

The draft EIS identifies and assesses the environmental and social impacts that could result from the completion of Kealakehe Parkway. To ensure that the full range of issues related to this proposed action are addressed and all significant issues are identified, comments and suggestions are invited from all interested parties. SDOT and FHWA will consider these comments prior to selecting the preferred alternative, which will be presented in the final EIS.

National Environmental Policy Act (NEPA)

(5) Alii Highway Project - (Re-evaluation of Project)

District: North Kona
TMK: 7-5-19, 20 (por); 7-6-13, 14, 15, 16, 17, 18, 19 and 25 (por); 7-7-4, 08 (por); 7-8-10 (por)
Applicant: County of Hawaii, Department of Public Works
25 Aupuni Street, Room 202
Hilo, Hawaii 96720-4252
Contact: Robert Yanabu (961-8327)
Cooperating Agency: Department of Transportation & U.S. Department of Transportation Federal Highways Administration (FHWA)
300 Ala Moana Boulevard
Honolulu, Hawaii 96813
Contact: Pat Phung (541-2700)
Consultant: R.M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817-4941
Contact: Colette Sakoda (842-1133)

at 941 North Capitol Street, N.E.,
Washington, D.C. 20426.
Linwood A. Watson, Jr.,
Acting Secretary.
[FR Doc. 95-19176 Filed 8-3-95; 8:45 am]
BILLING CODE 6717-01-M

ENVIRONMENTAL PROTECTION AGENCY

[ER-FRL-4725-4]

Environmental Impact Statements; Notice of Availability

Responsible Agency: Office of Federal
Activities, General Information (202)
260-5076 OR (202) 260-5075.

Weekly receipt of Environmental
Impact Statements Filed July 24, 1995
Through July 28, 1995 Pursuant to 40
CFR 1506.9.

EIS No. 950328, Draft EIS, FHW, HI,
Kealahou Parkway Completion,
Queen Kaahumanu Highway and
Honokohau Harbor Road Intersection
to near the Mamalahoa Highway and
Old Mamalahoa Highway
Intersection, North Kona District,
Hawaii County, HI, Due: September
18, 1995, Contact: Abraham Wong
(808) 541-2700.

EIS No. 950329, Final EIS, AFS, MT,
Wagner-Atlanta Vegetation Treatment
Project, Implementation, Helena
National Forest, Townsend Ranger
District, Meagher County, MT, Due:
September 05, 1995, Contact: George
Weldon (406) 266-3425.

EIS No. 950330, Final EIS, BLM, WY,
Greater Wamsutter Area II Natural Gas
Development Project, Approvals and
Permits Issuance, Carbon and
Sweetwater Counties, WY, Due:
September 05, 1995, Contact: John
Spehar (307) 324-4841.

EIS No. 950331, Draft EIS, AFS, MT,
Checkerboard Land Exchange, Plan of
Approval and Implementation,
Kootenai, Lolo and Flathead National
Forest, Lincoln, Flathead and Sanders
Counties, MT, Due: September 18,
1995, Contact: Ted Andersen (406)
293-6211.

EIS No. 950332, Final EIS, EPA, CA,
Humboldt Bay Open Ocean Dredged
Material Disposal Site (ODMDs)
Designation, Samoa Peninsula,
Humboldt County, CA, Due:
September 05, 1995, Contact: Allan
Ota (415) 744-1980.

EIS No. 950333, Final EIS, AFS, MT, Big
Mountain Ski and Summer Resort
Expansion Project, Special-Use-
Permit, Flathead National Forest,
Tally Lake and Glacier View Ranger
Districts, Whitefish, Flathead County,

MT, Due: September 05, 1995,
Contact: Becky Smith (406) 862-2508.
EIS No. 950334, Draft EIS, FHW, OK,
Canadian River Bridge Crossing
Construction, MT-37 east of Tuttle
northward to MT-152 in or near
Mustang, Funding, COE Section 404
and EPA NPDES Permits Issuance,
Canadian and Counties, MT, Due:
September 18, 1995, Contact: James
Erickson (405) 945-6011.

EIS No. 950335, Draft EIS, AFS, AK, Lab
Bay Project Area Timber Harvest,
Implementation, COE Section 404,
EPA NPDES and Coast Guard Bridge
Permits Issuance, Thorne Bay Ranger
District, Ketchikan Administrative
Area, Tongass National Forest, Prince
of Wales Island, AK, Due: September
18, 1995, Contact: Dave Arrasmith
(907) 225-3101.

EIS No. 950336, Final EIS, COE, IL,
Sugar Creek Municipal Water Supply
Reservoir Construction, COE Section
404 Permit Issuance, City of Marion,
Williamson and Johnson Counties, IL,
Due: September 05, 1995, Contact:
Terry Siemsen (502) 582-5550.

EIS No. 950337, Final EIS, AFS, CA,
Mendocino National Forest Land and
Resource Management Plan,
Implementation, Colusa, Glenn, Lake,
Mendocino, Tehama and Trinity
Counties, CA, Due: September 05,
1995, Contact: Daniel K. Chisholm
(916) 934-3316.

EIS No. 950338, Draft EIS, TVA, TN,
KY, MS, AL, GA, NC, VA,
Programmatic EIS—Energy Vision
2020, Integrated Resource Plan,
Implementation of Long-Term Plan
and Short-Term Action, TN, AL, KY,
GA, MS, NC and VA, Due: October 15,
1995, Contact: Lynn Maxwell (615)
751-2539.

EIS No. 950339, Draft EIS, AFS, MT,
Skyline Ridge Project Area Timber
Salvage and Associated Activities,
Plan of Approval and
Implementation, Kootenai National
Forest, Three Rivers Ranger District,
Lincoln County, MT, Due: September
18, 1995, Contact: Steve Prieve (406)
295-4693.

EIS No. 950340, Draft EIS, AFS, WA,
First Creek Basin Restoration Project,
Implementation, Wenatchee National
Forest, Chelan Ranger District, Chelan
County, WA, Due: September 18,
1995, Contact: Al Murphy (509) 682-
2576.

EIS No. 950341, Draft EIS, SFW, CA,
Stephens' Kangaroo Rat (SKR)
Authorization for Incidental Take and
Implementation of a Long-Term
Habitat Conservation Plan, Western
Riverside County, CA, Due:
September 18, 1995, Contact: Jeff
Newman (619) 431-9440.

EIS No. 950342, Draft EIS, FHW, NC,
Sunset Beach Bridge No. 198 on
Secondary Road NC-1172
Replacement, Over the Atlantic
Intracoastal Waterway, Funding, COE
Section 10 and 404 Permit, Brunswick
County, NC, Due: September 25, 1995,
Contact: Nicholas L. Graf (919) 856-
4346.

EIS No. 950343, Draft EIS, AFS, AK,
Eight Fathom Timber Sales,
Implementation, COE Section 404
Permit and EPA NPDES, Tongass
National Forests, Hoonah and Sitka
Ranger District, Chatham Area, AK,
Due: September 19, 1995, Contact:
Michael Weber (907) 747-6671.

EIS No. 950344, Draft EIS, FHW, CO,
CO-82 Highway Transportation
Project, Improvements to "Entrance to
Aspen", Funding and COE Section
404 Permit, City of Aspen, Pitkin
County, CO, Due: September 18, 1995,
Contact: Ron Sperl (303) 969-6737
ex.368

EIS No. 950345, Revised Draft EIS, UAF,
ME, Loring Air Force Base (AFB)
Disposal and Reuse, Implementation,
Updated and Additional Information,
Aroostook County, ME, Due:
September 18, 1995, Contact: Nancy
Speake (210) 536-5630.

EIS No. 950346, Draft EIS, UAF, NY,
Griffis Air Force Base (AFB) Disposal
and Reuse, Implementation, Oneida
County, NY, Due: September 25, 1995,
Contact: Jonathan D. Farthing (210)
536-3787.

EIS No. 950347, Final EIS, FAA, NJ,
Expanded East Coast Plan, Changes in
Aircraft Flight Patterns over the State
of New Jersey, Implementation, NJ,
Due: September 11, 1995, Contact:
William Marx (202) 267-9155.

EIS No. 950348, FINAL EIS, NPS, WA,
Elwha River Ecosystem Restoration,
Implementation, Olympic National
Park, Clallam County, WA, Due:
September 05, 1995, Contact: Brian
Winter (206) 452-0321.

Amended Notices

EIS No. 950250, Final EIS, FHW, PA, I-
81 Interchange Project, Construction,
Funding Chambersburg, Franklin
County, PA, Due: July 17, 1995,
Contact: Manuel Marks (717) 782-
3461. Published FR-6-16-95
Correction to Title.

Dated: August 1, 1995.

B. Katherine Biggs.

Associate Director, NEPA Compliance
Division, Office of Federal Activities.

[FR Doc. 95-19271 Filed 8-3-95; 8:45 am]
BILLING CODE 6560-50-U

Appendix G.2 - Public Hearing

KEALAKEHE PARKWAY EXTENSION PROJECT
PUBLIC HEARING
AUGUST 31, 1995 • 7:00 P.M.
KEALAKEHE INTERMEDIATE SCHOOL

PLEASE PRINT

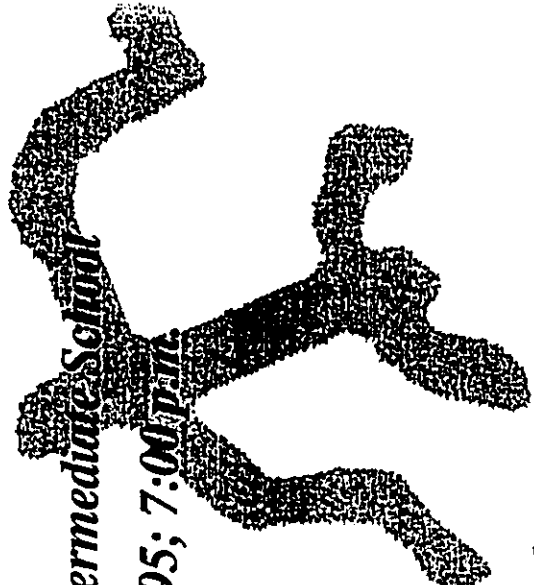
#	NAME	ORGANIZATION	ADDRESS	PHONE #
1	STANLEY TAMURA	DOT	50 MAKAALA ST. HILO HI	935-9690
2	STERLING CROW	DOT	50 MAKAALA ST. HILO, 96720	733-4640
3	CARL SIMONS	West Hawaii Concrete	73-4837 Manu Mele St	325-5522
4	George Bennet	"	"	"
5	GEORGE BENNET	KONA HEAVENS Com. Associate	PO Box 734 KK HI 96745	325-7532
6	Bobby Command	West Hawaii Today	Box 780 Kailua Kona 96745	329-9311
7	ALFRED PALMEIRH	RESIDENT	24-1523 HAO KUNLET K.K. 96740	326-1104
8	DENNIS HAGEROT	RESIDENT	POB 6251 KAMUOLA 96743	885-2148
9	Eileen K. Horton		74-81 Ulukoua St. Kailua Kona 96740	329-6789
10	Jim Skibby		PO Box 213 KK 96745	325-5844
11	Mike Moore	Kona Heavens	73-1413 KAHAKEA PL. K-K 96740	325-6784
12	Blanche Moore	"	Same	Same
13	Anna Riely Riely	"	73-1422 KAHAKEA PL.	325-7143
14	GEORGE HANDG'S	Kona Heavens	73-4824 Anini ST	325-7453
15	Sharon Handg's	"	"	"
16	Marni Hellicks	Kona Kahala Chamber of Commerce	75-5737 Kuakini Hwy #207	329-1758
17	Don Akana		P.O. Box 9037	322-4200
18	JANET D. BUTLER	Resident	PO. Box 1136	325-5132
19	HELEN L. MYHRE	Resident	73-4877 MANU MELE ST. K-K	325-5140
20				

#	NAME	ORGANIZATION	ADDRESS	PHONE #
41	Darwin Perry	Kona Heavens Assn	Box 734, KK	325-5464
42	Charles Perry	Kona Heavens Assn	73-1400 HAMINA ST. K. Kona	325-5464
43	Rolf Greenwell	RF Greenwell Estate	PO Box 1779 K-K	329-7774
44	JERRY EVANS & KIM EVANS		76-248 OLIVE PL. K-K	334-1520
45	SHARON HANDG'S	KONA HEAVENS	73-4824 Anini KK	325-7453
46	JAMES GREENWELL	PALANI RANCH / CAMITHA	2828 PAA ST #315D HNL 96719	836-2770
47	James A. Riely	KONA HEAVENS ASSN	73-1422 KAHAKEA PL	325-7143
48	ERWIN MYHRE	Kona Heavens Assn	73-4877 MANU MELE ST	325-5140
49	JOE GREENWELL	RF Greenwell Estate	PO Box 2399 K-K 96745	326-1440
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Public Hearing

Kealakehe Intermediate School

August 31, 1995; 7:00 p.m.



Kealakehe Parkway

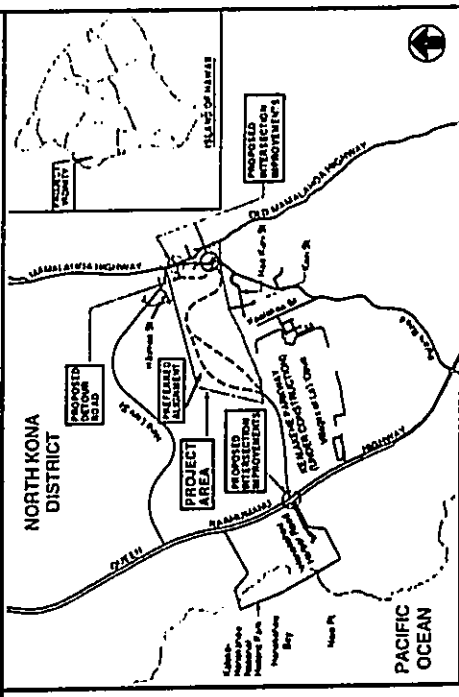
Mamalahoa Highway to Queen Kaahumanu Highway, North Kona, Hawaii



U.S. Department of Transportation
Federal Highway Administration

State of Hawaii
Department of Transportation

<p style="text-align: center;">Kealakehe Parkway Mamalahoa Highway to Queen Kaahumanu Highway</p> <p style="text-align: center;">State of Hawaii • Department of Transportation • Highways Division U.S. Department of Transportation • Federal Highway Administration</p>	<p style="text-align: center;">Project Description</p> <p>The State of Hawaii Department of Transportation is proposing to complete Kealakehe Parkway in North Kona, Hawaii. The completing segment would begin at the eastern (mauka) terminus of the portion of the Parkway within the Housing Finance and Development Corporation's Villages of La'i 'Opua, and would extend to Mamalahoa Highway/Palani Road. Once completed, the proposed Kealakehe Parkway would be a four-lane arterial extending east (mauka) from the intersection of Queen Kaahumanu Highway and Honokohau Harbor Road to a point near the intersection of Mamalahoa Highway and Palani Road. This project would receive approximately 80 percent federal funding through the Federal Highway Administration.</p>	<p>Project Elements</p> <ul style="list-style-type: none"> • Completion of Kealakehe Parkway (the portion of Kealakehe Parkway within the Villages of La'i 'Opua will be completed shortly) • A detour road at the eastern (mauka) terminus of Kealakehe Parkway • Construction of new or modified intersections of Mamalahoa Highway, Old Mamalahoa Highway, Palani Road and Kealakehe Parkway • Intersection improvements at Queen Kaahumanu Highway and Kealakehe Parkway 	<p style="text-align: center;">Needs To Be Met</p> <p>Kealakehe Parkway would satisfy four types of needs:</p> <ul style="list-style-type: none"> • system linkage: complete State route system between Mamalahoa Highway and Queen Kaahumanu Highway • existing transportation demand and capacity needs: ease congestion • safety needs • economic development needs: support future regional growth
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Long-Term Impacts

- **Land Use.** The completion of Kealahou Parkway would convert nearly 26 hectares (64 acres) of open space presently in agricultural use to a paved roadway. These impacts would be localized and acceptable within a regional framework since the project would affect only 0.0004 percent of the total agricultural acreage in the North Kona District. The soil types affected are not highly ranked for agricultural purposes. The project would require the relocation of one residence. A transportation corridor would be placed in proximity to some existing residential areas. The project would be supportive of development projects in the vicinity without creating long-term impacts to land use trends and plans.
- **Social and Economic.** Social and economic impacts would be mostly beneficial, including the expenditure locally of construction funds and enhanced access in the region which would contribute to overall economic activity. The portion of the detour road which would remain after project completion would provide access to a five-unit residential area that would be encircled by the Parkway and the detour road. The project would, however, displace one residence. No businesses would be displaced.
- **Infrastructure and Public Facilities.** The impacts of Kealahou Parkway would be beneficial, particularly on the roadway system. Kealahou Parkway would:
 - relieve traffic congestion on Palani Road;
 - establish access to and improve mobility for existing and proposed developments within the Keahole to Kailua area;
 - facilitate access to and the provision of community services; and
 - allow traffic generated by the Villages of Lāi 'Opua and other existing and proposed Kealahou communities to travel directly between Queen Kaahumanu Highway and Mamalahou Highway/Palani Road.
- **Air and Noise.** Air and noise impacts from Kealahou Parkway would meet applicable standards except at one location which may warrant noise mitigation at traffic volumes projected for 2015.
- **Geology, Physiography, and Site Contamination.** Kealahou Parkway would affect the landform only within the project's construction zone. Embankments could affect the drainage characteristics of the affected area. An accident on Kealahou Parkway could result in the release of hazardous materials which would be handled in accordance with applicable requirements.
- **Volcanology and Earthquakes.** Kealahou Parkway would provide an evacuation route for area residents and access for emergency vehicles and supplies.
- **Water Resources.** Since there are no surface water bodies or wetlands within the project site, adverse impacts to surface waters are not expected. Groundwater impacts are also expected to be minimal.
- **Terrrestrial Flora.** Approximately 26 hectares (64 acres) of vegetational communities would be cleared for the roadway. The types of vegetational communities which would be affected are abundant in the region.
- **Terrrestrial Fauna.** The faunal community which would be affected is characterized by exotic and feral species common in the area.
 - **Endangered and Threatened Species.** Since Kealahou Parkway could affect endangered or threatened species, consultations with the U.S. Fish and Wildlife Service (FWS), as required by the Endangered Species Act, and the Department of Land and Natural Resources (DLNR) Division of Forestry and Wildlife (DOFAW), as required by Chapter 195D, HRS are continuing so that the project incorporates appropriate mitigation measures.
 - **Historic and Archaeological Resources.** Alternative 10 would affect 49 archeological sites, including one burial. Alternative 11 would affect 41 archeological sites and two burials. Seven of these sites would be affected by both alignments. The detour road would affect 10 archeological sites but no burials. Discussions with the State Historic Preservation Office (SHPO) and the Hawaii County Burial Council are continuing as required by Section 106 of the National Historic Preservation Act of 1966, Section 4(f) of the Department of Transportation Act of 1966, and Chapter 6E, HRS.
 - **Parklands.** Kealahou Parkway would have no impact on parklands, including Kaloko-Honokohau National Historic Park, other than to facilitate access to them.
 - **Visual Resources.** Kealahou Parkway would have highly localized and severe adverse impacts on those existing residences that would be immediately adjacent to the berm on which the roadway would be placed. For those not immediately adjacent to the roadway, however, visual impacts would be minimal.

Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, as amended

The purpose of this title is to establish a uniform policy for fair and equitable treatment of persons displaced as a result of federal and federally assisted programs in order that such persons shall not suffer disproportionate injuries as a result of programs designed for the benefit of the public as a whole.

Brochures are available tonight.

Cost Estimates

- Alternative 10 \$49,000,000
- Alternative 11 \$43,000,000

Major Milestones

- | Activity | Completion |
|-----------------------------------|----------------|
| • End of draft EIS comment period | Sept. 22, 1995 |
| • Final EIS | Dec. 1995 |
| • Start construction | Mid-1997 |
| • Construction duration | 18 months |

Written testimony on this project will be accepted up to and including September 22, 1995, and may be mailed to the following address:

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

All written comments should be legible and include your name (individual and/or organization) and return address.

ORIGINAL

1 DEPARTMENT OF TRANSPORTATION
2 HIGHWAYS DIVISION
3 STATE OF HAWAII

4 In the Matter of the) Public Hearing
5 Kealakehe Parkway Draft) Kailua-Kona, Hawaii
6 Environmental Impact Statement) August 31, 1995
7)

8 TRANSCRIPT OF PROCEEDINGS

9 Taken on behalf of the State of Hawaii, Department of
10 Transportation, Highways Division, at Kealakehe Intermediate
11 School, 74-5062 Onipaa Street, Kailua-Kona, Hawaii, 96740;
12 commencing at 7:15 p.m., on Thursday, August 31, 1995,
13 Pursuant to Notice.

14 TAKEN BEFORE: ANDREA VASCONCELLOS, RPR, CSR 356
15 Notary Public, State of Hawaii
16 308 Kamehameha Avenue, Suite 210
17 Hilo, Hawaii 96720

18 APPEARANCES:

19 Ronald Tsuzuki, State of Hawaii, Department of
20 Transportation
21 Stanley Tamura, State of Hawaii, Department of
22 Transportation
23 Sterling Chow, State of Hawaii, Department of Transportation
24 Keith Nakano, Supervising Civil Engineer,
25 Parsons, Brinckerhoff, Quade & Douglas
26 David Atkin, Ph.D., Parsons, Brinckerhoff, Quade & Douglas
27 Jason Yazawa, Parsons, Brinckerhoff, Quade & Douglas

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1 Kailua-Kona, Hawaii; Thursday, August 31, 1995; 7:15 p.m.

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3 TRANSCRIPT OF PROCEEDINGS

4 MR. TAMURA: Good evening. Get seated and we can
5 get started. Good evening ladies and gentlemen. It's
6 certainly a pleasure to see all of you here tonight. It is
7 now a quarter after 7:00. And I hereby declare this public
8 hearing to be officially open.

9 My name is Stanley Tamura. I'm the Acting
10 Highways Division District Engineer here on the Big Island.
11 And at this time I'd like to introduce some of our
12 officials and guests here tonight. We have here with us
13 Ilene Norton, who's with the Governor's Transportation
14 Safety Commission. Ilene is there (indicating). From our
15 Department of Transportation we have Ron Tsuzaki from our
16 Honolulu office and Sterling Chow from our Hilo office.
17 From the consultants Parsons, Brinckerhoff, Quade &
18 Douglas, we have Keith Nakano, who is the project manager;
19 David Atkin, who I understand handles the EIS studies; and
20 Jason Yazawa over there.

21 I'd like to introduce the members of the panel
22 here tonight. Ron Tsuzaki is head of our Highways Planning
23 Office, Planning Branch in Honolulu. I already -- also on
24 the board is Mr. Keith Nakano and David Atkin from Parsons,
25 Brinckerhoff, Quade & Douglas who are the consultants for

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1 the project.

2 The purpose of tonight's public hearing is to
3 discuss the location, design and environmental impacts from
4 the proposed Kealakehe Parkway project. The public hearing
5 is being held for several reasons. First this is a means
6 of informing you of the State Department of
7 Transportation's plans being developed through the Highways
8 Division. Our intent is that you should be informed and
9 determine, on a factual basis, how you as the general
10 public, property owners, motorists and other interested
11 citizens will be affected either beneficially or adversely
12 by this proposed project.

13 Secondly this project hearing is held in order
14 that we may obtain facts not previously brought to our
15 attention with connection with the location and design of
16 the proposed project. Notice of tonight's public hearing
17 was published in the Honolulu Advertiser and the West
18 Hawaii Today.

19 I'll now cover the agenda for tonight's meeting.
20 First Mr. Keith Nakano will make a presentation for the
21 Department of Transportation. Then we will have a short
22 recess. When we resume, we'll receive your testimonies.
23 Following that we will have a question-and-answer period.
24 I would like to cover now very briefly some of the
25 important guidelines for tonight's hearing.

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1 First of all the purpose for us being here
2 tonight, we're not here to debate the proposed
3 improvements, but to solicit factual testimony from you.
4 Nor is this hearing intended to be popular referendum, that
5 is the solution to be selected will not be decided by the
6 majority of those present or represented at this hearing.

7 We do want to extend to you every opportunity to
8 voice your concerns and to present any new facts that the
9 Department may not be aware of or have not been properly
10 considered.

11 Secondly we want to emphasize the importance of
12 your testimony. All proceedings of the hearing are being
13 recorded. It's important that all questions and
14 testimonies are clearly stated into the microphone.
15 Testimony should be factual, brief, unemotional and free of
16 any political references. Extraneous material of any
17 nature whatsoever is not properly part of the proceedings,
18 and all speakers must confine their statement to the
19 subject under discussion. As moderator, it will be my duty
20 to interrupt if I should feel the testimony is wandering
21 afield from the purpose of tonight's hearing.

22 Thirdly all those wishing to testify are asked to
23 fill out a speaker information card available at the
24 information desk. In order to give everyone wishing to
25 testify an opportunity to speak, speakers will be limited

1 to five minutes the first time around. After all speakers
2 have been heard, persons wishing for additional time may
3 have five more minutes.

4 Some of you are here to learn more about the
5 project and may not be ready to submit statements tonight.
6 The State Department of Transportation will continue to
7 accept written statements through September 22, 1995.
8 Following the public hearing, the Highways Division staff
9 will evaluate your testimonies and information presented
10 tonight together with factual data we already have.

11 I'd like to mention that all information
12 developed in support of the location and design of the
13 proposed project, including the public hearing transcript
14 and written statements received, will be available upon
15 request for public inspection and copying.

16 We'll now get into the details of the proposed
17 project. And I'd like to call upon Keith Nakano to do his
18 presentation.

19 MR. NAKANO: Thank you, Stanley. Good evening
20 ladies and gentlemen. Before I begin tonight's
21 presentation, I would like to ask everyone attending
22 tonight's public hearing, and most of you have already,
23 please sign in at the registration at the front table.
24 There is a handout for tonight's meeting also available at
25 the front table. We also have a few copies of the Federal

1 Relocation Assistance Program for your information. During
2 the recess, we welcome you to come forward for a closer
3 look at boards we have on the side.

4 I'd like to begin by summarizing the project to
5 date, and follow with a brief description of the needs for
6 the project, the alternatives considered and the selection
7 criteria applied to these alternatives.

8 The Kealakehe Parkway extension project started
9 in the spring of 1992. Shortly thereafter in August of the
10 same year, a public meeting was held. At that meeting nine
11 build alternatives were exhibited. Since then we have met
12 with landowners, public officials and community
13 organizations. Additional alternatives were then developed
14 from the input received at those meetings.

15 All of the alternatives were then screened to
16 select two alignments for archeological and biological
17 surveys. Two additional alternatives were developed in
18 response from findings from these surveys. And these final
19 two alternatives were subjected to further survey, study,
20 detailed analysis and full examination in the draft EIS.
21 The project is now in a stage of the draft Environmental
22 Impact Statement has been published and comments to the
23 draft EIS are being received.

24 (Slides being shown).

25 The project is located in the North Kona District
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1 of West Hawaii just north of Kailua-Kona. Some of the
2 major roadways in area are Queen K. Highway, Mamalahoa
3 Highway, Old Mamalahoa Highway, Palani Road and Hina Lani
4 Street. Next slide shows the project studied alignments.
5 The lower portion of the roadway, Kealakehe Parkway, is
6 currently under construction as part of the Housing,
7 Finance and Development Corporation's Villages of Lai Opua
8 project.

9 This is Mamalahoa Highway, Old Mamalahoa Highway
10 Queen K. Highway down here (indicating). Hina Lani Street
11 in this photo is still under construction. The Kealakehe
12 Elementary and Intermediate School complex. The Kealakehe
13 landfill and the Police Station (indicating).

14 Next slide. The Kealakehe Parkway extension
15 project was initiated to satisfy four needs. The first of
16 these is the need for linkage of the highway system.
17 Kealakehe Parkway will provide a connection between Queen
18 K. Highway, Mamalahoa Highway and Saddle Road, and will
19 eliminate the discontinuity in the state route system.
20 The state route, Mamalahoa Highway, currently terminates at
21 a south end and becomes Palani Road, which is a county
22 facility. The Island of Hawaii long-range highway plan
23 also identified the need of system linkage in order to
24 improve circulation between Hilo and Kona via the Saddle
25 Road and Mamalahoa Highway.

1 Next slide. This is based on existing traffic
2 demand and capacity. Next slide. Heavy traffic congestion
3 is experienced on several North Kona roadways shown in this
4 slide. The existing roadways experience heavy peak-hour
5 traffic with a percentage of trucks contributing to the
6 traffic mix. Next slide. Traffic projections for the
7 no-build alternative in the year 2015 show even more
8 congestion occurring. Improvements to the level of service
9 on the Queen K. Highway assumes the highway will be widened
10 to four lanes.

11 Note, however, that a comparison of the roadway
12 volumes all show a significant increase particularly on
13 Palani Road. It should be noted that opportunities to
14 widen Palani Road are limited, whereas Kealakehe Parkway
15 has been identified by state and county plans as means to
16 alleviate traffic congestion and improve regional
17 circulation.

18 Safety is the third need identified for this
19 project. Numerous accidents have been reported on Palani
20 Road between Palani junction and Queen K. Highway. The
21 Kealakehe Parkway provides a much safer alignment than
22 Palani Road. The need to support the economic development
23 of the region and to support the -- the North Kona region
24 has experienced a significant increase in population and
25 that increase is expected to continue.

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1 Various plans identified the North Kona area for
2 urban expansion. Among them are the Hawaii State Plan,
3 Functional Plans, and Land Use Pattern Allocation Guide
4 seen here. The West Hawaii Regional Plan also acknowledges
5 growth in the Kealakehe area in support of the existing
6 community. The county's Keahole to Kailua Plan also
7 identifies the area for growth. Ongoing development in the
8 area include Housing, Finance and Development Corporation's
9 Villages of Lai Opuia project with 4,100 residential units
10 and high school; Queen Liliokalani Trust lands with
11 development underway and the proposed expansion of the
12 industrial area; and University lands selected as the
13 proposed site for the West Hawaii campus.

14 The Kealakehe extension project is a four-lane
15 rural arterial extending from Mamalahoa Highway to the
16 portion of the Kealakehe Parkway presently under
17 construction. The roadway is situated with the basic 120-
18 foot right-of-way, two lanes in each direction. It will be
19 divided by a median and will have paved shoulders. The
20 total length of the parkway extension is two and a half
21 miles.

22 The Kealakehe Parkway extension project will
23 require a construction detour road at its mauka terminus.
24 The project will also require intersection construction or
25 modification at Old Mamalahoa Highway and Palani Road as

1 well as intersection improvements at Queen K. Highway.
2 Construction cost is estimated between 29 and 34 million
3 dollars.

4 Four categories of alternatives were considered
5 for evaluation. First of these categories is the no-build
6 alternative. The no-build alternative does not include any
7 construction except for existing projects located outside
8 of the Kealakehe Parkway extension project corridor. This
9 will mean completion of the Kealakehe Parkway only within
10 the Villiages of Lai Opuu and widening Queen K. Highway to
11 four lanes.

12 Traffic system management or TSM is the second
13 category of alternatives. TSM includes transit or
14 para-transit systems as well as selected traffic control
15 measures such as ride-sharing programs. However, the
16 applicability of TSM to rural conditions is unclear. And
17 it does not eliminate the discontinuity in the state route
18 system nor provides a link between the Villages of Lai Opuu
19 and Mamalahoa Highway and Palani Road. Therefore, it does
20 not conform to the state and county plan.

21 The third category consists of improvements to
22 the existing corridor, which includes widening Palani Road
23 or converts Hina Lani Street to a state facility. Widening
24 Palani Road would require conversion to a state facility,
25 and must be widened to four lanes. Right-of-way

1 acquisitions would be required including 71 residences and
2 a church.

3 Widening Palani Road would link Mamalahoa Highway
4 and Queen K. Highway, but does not provide access to the
5 Villages of Lai Opuu and Kealakehe High School from
6 Mamalahoa Highway. Conversion of Hina Lani Street to state
7 facility would eliminate the state route discontinuity, but
8 would not constitute a through route and therefore creates
9 a difficult maneuver at the Mamalahoa Highway intersection,
10 particularly for trucks. It also will not provide access
11 to the Villages of Lai Opuu from Mamalahoa Highway.

12 The final category of evaluation is the build
13 alternative for the extension of Kealakehe Parkway.
14 Fourteen alignments were studied. Five were initially
15 developed by others -- five additionally developed by
16 others. Five additionally developed by the Department of
17 Transportation. And four were proposed by the
18 landowners. All of these categories, except the no build,
19 must pass these criteria.

20 The alternative must provide for the continuity
21 of the state route system. Alternatives must be consistent
22 with state and county regional plans. It must be capable
23 of 40-mile-per-hour design speeds, and have a maximum grade
24 of not more than 11 percent. The selection is also based
25 on the number of residences directly impacted as well as

1 the number of religious, recreational, or educational
2 facilities affected. And finally, it must minimize the
3 impact to biological and archeological resources. As a
4 result of this screening analysis, alternatives 10 and 11
5 were selected for detail study as the build alternatives in
6 the draft EIS. They were then compared with the no-build
7 alternative to assess relative impacts.

8 David Atkin will now continue with the major
9 components of the draft EIS, and the next steps in the
10 environmental process.

11 MR. ATKIN: Thank you, Keith. My part of the
12 presentation will summarize some of the main conclusions of
13 the draft EIS. I will discuss which alternative alignments
14 the Department of Transportation is leaning towards based
15 on current information, and provide a full overview of the
16 next steps in the project.

17 The availability of the draft EIS was noticed on
18 July 23rd in a bulletin of the Office of Environmental
19 Quality Control and on August 4th in the Federal Register.
20 The document has been distributed to government agencies,
21 interest groups, political leaders and public libraries.
22 These notices initiate a public comment period which ends
23 on September 22nd. During this period comments from
24 interested groups, agencies and individuals are welcome and
25 should be sent to the Director of the State Department of

1 Transportation. The address is provided in the handout
2 that is available at the sign-in table.

3 And the next slide, please. We show the various
4 impact categories that were addressed in the draft
5 Environmental Impact Statement. The project has a wide
6 range of positive and adverse impacts as shown on the
7 slide. The project's impacts will be both positive and
8 negative.

9 The positive impacts relate primarily to improved
10 transportation service and mobility and accessibility in
11 the region, but also includes some others such as creation
12 of new makai views for users of the roadway.

13 However, I'll now summarize the five main adverse
14 impacts that are discussed in the draft EIS. These being
15 the residential relocation; the increase in noise levels;
16 possible impacts on endangered species; possible impacts on
17 archeological resources including burials; and visual
18 impacts.

19 Next slide, please. In term of relocations, one
20 resident would be relocated with either alternative 10 or
21 11. In this area here (indicating). This relocation would
22 be handled in accordance with Federal requirements
23 administered by the Department of Transportation, Right-
24 of-Way Branch. A brochure providing an overview of the
25 provisions of the Federal Uniform Relocation Assistance and

1 Real Property Acquisition Act is available at the sign-in
2 table.

3 In terms of noise, based on modeling the future
4 noise levels using a federally approved model, the noise
5 impacts of both alternatives are quite similar. In the
6 year 2015 future noises levels could be one to nine
7 decibels greater than at present depending on the location
8 in relation to the road. These increases generally do not
9 exceed federal guidelines except at one location, which is
10 this area in here (indicating). Where noise mitigation may
11 be necessary when traffic volumes reach levels projected
12 for the year 2015, noise mitigation would not necessary
13 based on traffic volumes projected initially.

14 In terms of endangered species, several rounds of
15 fieldwork were accomplished so we can fully understand the
16 impacts of the project on threatened and endangered
17 species. These investigations indicated that the project
18 could potentially involve three rare plant species as shown
19 on this slide.

20 Next slide, please. Two of these rare species
21 are located within alignment 10 here and here
22 (indicating). And a third species is located near the
23 alignment here (indicating). However, one species of
24 concern is located within alternative 11 up here
25 (indicating). The second species of concern that's located

1 near alternative 11 here and here (indicating) is not
2 officially designated as threatened or endangered.

3 In terms of archeological resources, field
4 investigations were conducted so that we would also fully
5 understand the impacts of the alternative alignments on
6 archeological resources.

7 Next slide, please. These are the types of
8 archeological resources that were encountered. Each
9 archeological site was placed into one of four categories;
10 no further work, data recovery, preservation, or data
11 recovery and preservation. An archeological inventory
12 survey report describes each archeological site in detail
13 and has been submitted to and accepted by the Department of
14 Land and Natural Resources.

15 Alternative 10 and the detour would affect 69
16 sites of which eight are classified for preservation.
17 Alternative 11 and the detour area would affect 51 sites of
18 which seven have been classified for preservation.

19 In terms of visual impacts, since the parkway
20 would be built on a berm in some areas, some people
21 adjacent to the alignment would see a roadway berm instead
22 of their present view. This would only affect those close
23 to the alignment, however. We would mitigate this visual
24 impact through a landscaping program.

25 Some have also expressed a concern about roadway

1 lighting. Lights may be provide at the intersections of
2 the Kealakehe Parkway and Palani Road and Kealakehe Parkway
3 and Queen K. Highway. Although there is roadway lighting
4 along the Housing, Finance and Development Corporation's
5 part of the roadway, it is not presently proposed that
6 lights be placed along the rest of the length of the
7 road. A positive visual impact is the parkway will create
8 new vistas makai for motorists using the road.

9 Now, I'm going to talk about the alternative
10 alignment presently under consideration. Can I have the
11 next slide, please? Based on information presently
12 available the Department of Transportation is leaning
13 towards the selection of alternative 11 for two main
14 reasons.

15 The first is that alternative 11 minimizes
16 impacts on archeological resources generally and
17 particularly archeological resources classified for
18 preservation. The second reason is that alternative 11
19 minimizes impacts on endangered species as shown in the
20 previous slide. In addition alternative 11 has a lower
21 cost than alternative 10. This preference is only
22 tentative at this point and your input on the preferred
23 alternative is welcome.

24 After the close of the comment period, the
25 Department of Transportation and Federal Highways

1 Administration will make a final determination of the
2 preferred alternative considering any new information
3 provided during the comment period. And that determination
4 will be recorded in the final EIS.

5 In terms of the next steps on the project, the
6 planning phase is not yet complete. Major events still to
7 be accomplished include the close of the comment period on
8 September 22nd, the publication of the final EIS, which
9 will state the preferred alternative, which at this point
10 appears to be alternative 11. We will also address all the
11 comments that were received on the draft EIS. After the
12 distribution of the final EIS, a Record of Decision
13 document will be issued by the Federal Highways
14 Administration, and also the Governor will formally accept
15 the final EIS. These acceptances will include commitments
16 to implement mitigation measures.

17 Even after the acceptance of the final EIS,
18 details of the mitigation measures and procedures to
19 address the project's impacts on archeological resources
20 and endangered species would still need to be resolved.
21 This will include continuing coordination with the Fish and
22 Wildlife Service and the Department of Land and Natural
23 Resources. And since burials are involved, coordination
24 will also occur with the Burial Council.

25 The design phase will then follow the planning

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1 phase, which would in turn be followed by construction with
2 the Kealahou Parkway expected to open for service by 1999.
3 The project schedule is provided in the handout which is
4 available at the sign-in table.

5 To stay involved, send your comments on the draft
6 EIS to the Director of the State Department of
7 Transportation. Comments supporting the project are as
8 welcome as comments addressing the projects adverse
9 impacts.

10 Now, I'm going to turn this back to our
11 moderator.

12 MR. TAMURA: Thank you Mr. Nakano and Mr. Atkin.
13 We will now have a 15-minute recess after which we'll be
14 ready to receive your testimony. If you have not already
15 done so and you want to testify, please pick up a testimony
16 card at the information desk and have it filed out and
17 returned to the attendant.

18 Okay, we'll break for a recess

19 (Break taken.)

20 MR. TAMURA: Let's get started again. Will the
21 meeting please come to order? We will now be receiving
22 your testimony. When you do come up, please step up to the
23 mike, speak directly into the mike and give your name and
24 organization that you may represent.

25 The first person we will be calling up is Carl

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1 Simons.

2 MR. SIMONS: My name is Carl Simons. I'm
3 representing West Hawaii Concrete.

4 VOICE: Why don't you turn your back to them with
5 the mike to us?

6 MR. SIMONS: All right.

7 My name is Carl Simons. I represent West Hawaii
8 Concrete. We're a supplier of concrete and aggregates in
9 West Hawaii. We support this proposed construction of
10 Kealakehe Parkway. We regularly use all of the available
11 routes from Mamalahoa Highway through Palani Road. And
12 prior to the conclusion of this project, trucks like we
13 have will continue to have to use either Hina Lani, Palani
14 on Palisades. All of roads have serious drawbacks that
15 have been the subject of comments for years.

16 As the EIS notes, there are numerous accidents
17 along Palani, Hina Lani and Palisades and they were built
18 not to accommodate truck traffic. Palisades is currently
19 posted with a tonnage limit. And residents of Kona Heavens
20 have asked for a tonnage limit. Palani Road is narrow and
21 rural as you've noted and there are lots of existing homes
22 near the roadway.

23 Truck traffic is a major problem for residents
24 and truckers alike on the existing roads which haven't been
25 designed for such traffic. Very often someone gets stuck

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1 behind a slow-moving truck going up Palani and gets
2 frustrated. In frustration, this person may pass in a
3 no-passing lane, trying to get around the slow-moving
4 truck. Truckers don't want to be in the way, but we don't
5 have any other road. By the way, when a fully loaded truck
6 goes up Palani Road, pulling over to stop to let traffic by
7 is pretty unsafe and usually delays traffic even more. And
8 on Palani Road when a truck tries to get back on the
9 highway, it's usually pulling out at a blind spot, which is
10 dangerous and then it never gets going as fast as it was
11 going when it pulled over because it can never regain road
12 speed.

13 One of the things I was going to comment on is
14 that I notice the road is designed as a four-lane highway.
15 And I know those things get done in phases. And I would
16 certainly ask that if it does get done in phases, that
17 truck passing lanes get designed into it.

18 I also understand that the road is going to cost
19 a lot. I have a hard time understanding 45 million dollars
20 for two and a half miles, but whatever it costs, it's not
21 going to get cheaper. And if we don't build it, we'll have
22 to use the roads that we consider unsafe. Thank you.

23 MR. TAMURA: When we first started, I failed to
24 recognize Marni Herkes, from the Kona Kohala Chamber of
25 Commerce. She's our next person to testify.

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1 MS. HERKES: It's the Kona Kohala Chamber of
2 Commerce. I'm Marni Herkes testifying for the Kona Kohala
3 Chamber of Commerce, who fully supports the proposed
4 extension of the Kealakehe Parkway to Mamalahoa Highway.

5 The east-west lane including the two roadways
6 have been included in the Big Island highway plans for over
7 ten years. We fully agree that this extension will satisfy
8 the system linkage needs, existing transportation
9 development capacity needs, safety needs, and economic
10 development needs. Along with these considerations, we ask
11 that the DOT Highways and the Federal Highways
12 Administration look carefully at the kinds of truck traffic
13 and economic dependency of business and consumer community
14 upon this traffic. We need a safe convenient truck route
15 from Mamalahoa to Queen K. This would mean this would have
16 to be a four-lane highway and graded for truck
17 transportation. And unlike Carl, I don't think we want to
18 just put the truck passing lanes. I think we'd like to
19 start with a four-lane highway just once. Thank you.

20 MR. TAMURA: Thank you, Marni. Next we'll have
21 Kelly Greenwell.

22 MR. GREENWELL: I think everyone here has heard
23 me make this testimony before so I'll be brief as I
24 possibly can. I still have some concerns over the
25 severeness of the curve. I'm not sure that it can't be

1 done in a way that will relax that curve some. I know that
2 an awful lot of study has been put into this. I don't want
3 to spend a lot of time. I would ask that you try to give
4 more thought to what I consider to be somewhat of a hairpin
5 curve. The traffic is traveling for the five or six miles
6 in almost a straight line and come into that kind of curve.

7 As you now when I first got started on this horse
8 some six years ago, there were 27 fatalities recorded. And
9 I would hate like hell to spend 45 million dollars and have
10 more fatalities and that sort of thing.

11 I was somewhat concerned about the width of the
12 road earlier, but I think Carl has a very good point when
13 you have trucks, this road is going to be used and used. I
14 would envision this will be used and four lanes is probably
15 the most appropriate.

16 For esthetic reasons I would like to see a medial
17 strip. And for safety reasons I'd like to see a medial
18 strip. I realize a median strip is probably what's making
19 the road cost so much because of the grades and whatnot.
20 But if we can afford it, it would be nice to have.

21 I kind of want to go on record today as being in
22 favor of this project in almost any way, shape or form it
23 can go because I think it's critical for the future of Kona
24 to move along with this project. And I don't want to be
25 someone who stands in the way. I might suggest that you

1 remove the Loulu palms. I have a hard time with the kinds
2 of costs incurred trying to comply with federal regulations
3 and guidelines in trying to save endanger species when
4 they're truly not endanger species. And the Loulu palm is
5 not an endangered species as far as I'm concerned. We have
6 probably 250 of them in pots in our nursery right now.
7 It's hard enough to get people to buy them.

8 I don't want to be strung up either by the
9 Hawaiians, but there are lots of things that are considered
10 artifacts and archeological sites in the area. They are
11 all over Kona. And I think it's degrading to the Hawaiian
12 people to say that represents their level of culture when
13 it's simply where someone has put some piles of rock when
14 they planted some potatoes, taro, and bananas in this area.
15 But for God's sakes, let's not spend a couple of million
16 dollars saving a pile of rock. So thank you very much.

17 MR. TAMURA: Our next testimony will be from
18 Mr. George Bennett.

19 MR. BENNETT: Good evening. I'm George Bennett.
20 I'm the President of the Community Association in Kona
21 Heavens. And I thank you all for this opportunity. I want
22 to thank you that we got this far on the road. It's
23 something that's definitely over -- needed and the time has
24 gone by where it should have been built.

25 I look at Kona as a community of 30,000 and

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1 growing, and think back a few years ago when Hilo was that
2 size. I think they had quiet a few more roads in Hilo. It
3 must have been a lot cheaper to build them in that flat
4 area. So it's definitely overdue.

5 I look at this meeting tonight sort of like sweet
6 and sour sauce. In that the sweet part is we've come this
7 far and the road is coming to reality. And then the sour
8 part is the cost of it.

9 It's unfortunate that we don't have a way to come
10 up with a more cost efficient way of doing it. Even at
11 30,000 -- 30 million dollars for the road and 18 months,
12 that basically 24 feet of road to day, which is the size of
13 three of these tables. This table is eight-feet long so
14 that's 24 feet. And that would be 60 thousand dollars or
15 30 million for the whole project, so that equates to a foot
16 of road for \$2,750. I think they rebuilt the Sana Monica
17 freeway in a lot less time and a lot less money. And one
18 of the ways they did it, is they put in an incentive for
19 the builders; that he would get a bonus if he got done
20 quick. So we might try something like that.

21 I support the road from the point of view that
22 the more roads I think we have in Kona, the more diluted
23 the traffic will be, very obviously, and the less traffic
24 noise for everywhere. The stick-your-head-in-the-sand
25 ostrich approach that, no, I don't want a road near my

1 house, has a certain disadvantage that means -- that we
2 talked about earlier tonight.

3 My house is right here (indicating). It was nice
4 and quite before they finished Hina Lani. But I'd rather
5 trade that little piece of peace and quite for the
6 convenience and safety of having another arterial road.
7 And I have to clean my screens more often but, hey, you
8 know, there's other places like the tundra where I don't
9 have to worry about that, but I don't want to live there.

10 The other thing is if you do need any street
11 lights for this project, we have a few extra ones on Hina
12 Lani we'll be glad to take over. The only other thing
13 that's also good about the sour part of the sweet and sour
14 is in reading the K-to-K plan, overall plan that was
15 produced -- I'm not sure who produced it. They mention
16 greenbelts and jogging paths and bike trails. I wonder if
17 you can trade the median in for one of those somehow? I'd
18 like some response, maybe in the question-and-answer
19 period, how did it come about that those things were not
20 include in the planning, even though someone else had
21 included them in their plans and thought it was a good
22 idea? Because if you've been in some places on the
23 mainland where they have bike trails and jogging trails,
24 it's definitely a wonderful addition; helps in congestion
25 and confusion; and ways to get other places. Thank you.

1 MR. TAMURA: Our final scheduled testimony will
2 be from Ms. Janet Butler.

3 MS. BUTLER: Thank you very much for coming here.
4 Thank you for the wonderful progress thus far in this badly
5 needed road. I'm strong to favor the building of this road
6 for a number of reasons. I have some miscellaneous things
7 to add because some of the others have covered most of what
8 I had to say.

9 Hina Lani has an 18.8 percent grade. We've seen
10 trucks jack-knife. We've seen trucks lose their brakes.
11 Some poor soul wrote a letter to the editor in the
12 newspaper telling us of what a terrifying experience that
13 if you've got a big tractor-trailer that loses its momentum
14 and it's rolling backwards and the brakes aren't adequate
15 to stop it, where do you go to get out of the way? She
16 thought she was going to get squashed like a bug.

17 We have people hauling boats behind pickup trucks
18 that have jack-knifed and ended up in our neighbor's wall.
19 I think one of the more interesting things is we no longer
20 see children walking up and down Hina Lani Street. I
21 suspect that parents don't allow them to walk up to the
22 school bus at the top of the hill nor do they allow them to
23 walk down the hill in the afternoon because it's too
24 dangerous.

25 Hina Lani Street has this kind of terrain

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1 (indicating). And pulling out of the side street onto Hina
2 Lani and someone is coming mauka, they cannot see you.
3 Coming out of Manaheli Street, I've come very close to
4 getting rear-ended and hit from the side more times than I
5 would like to tell you about. If you live on the street
6 below that's coming down, they get down to that dip and
7 they come over the top, they can't see the person pulling
8 out.

9 I've made it something of a hobby of mine to
10 clock people. And I've chased people on Hina Lani Street
11 and I've clocked them on average of 55 miles an hour. But
12 I did get one guy that was doing almost 70, and he was only
13 half way up the hill. But they come roaring through there
14 to take a run at that hill so they can make it. It's
15 really a very dangerous place. We do not have adequate
16 police to come and patrol. They come up as often as they
17 can. But we simply don't have the adequate police force to
18 handle the traffic control. So it would be a great boon in
19 that respect to get the heavy vehicles off that road.

20 Another point is that the upper portion of Hina
21 Lani is over 20 years old. I think probably around 25. It
22 was a very well-built road. It held up beautifully until
23 about the last two years. The road was not ever intended
24 -- I don't think they ever anticipated the heavy vehicles
25 that would be covering that road in recent times. And in

1 the two years, approximately, that that road has been open,
2 there's side areas of the road that are very slick.
3 There's other areas that are pot-marked. And it's obvious
4 that the road is rapidly breaking down. In my estimate
5 that in probably two or three years there's going to have
6 to be a major resurfacing or rebuilding of that road, and
7 it's not going to be cheap to do that.

8 I saw on CNN a couple of weeks ago a thing called
9 factoid. And I was most interested to see that a fully
10 loaded tractor-trailer, one run over a road has as great an
11 impact on that road as 10,000 automobiles. This may
12 explain why our roads breakdown so rapidly because they're
13 not constructed to handle this kind of impact.

14 I would hope that this lateral road, this
15 Kealakehe Parkway would be built to handle today's traffic,
16 today's heavy equipment and get the load off of Palani
17 Road. Some of our policemen here have told me it is the
18 most dangerous road in the state. We've killed an awful
19 lot of people on Palani Road. We've wrecked an awful lot
20 of cars. I mean totaled them. Not to mention those that
21 spend their life down here at the local repair shop. The
22 rate of speed at which people travel Palani Road is also a
23 problem. People are in an awful big hurry to go someplace.
24 I don't know quite where they're going, but that seems to
25 be part of the story.

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1 I think probably that's the bulk of what I have
2 to say. I certainly hope that the road will be built. I
3 hope it will be built soon. We really need it
4 desperately. Thank you.

5 MR. TAMURA: Thank you.

6 We're now at the question-and-answer session. If
7 you do have a question, please raise your hand, step up to
8 the mike, state your name and the organization that you
9 represent.

10 Do we have any questions?

11 VOICE: Can we ask questions from the floor?

12 MR. TAMURA: Yeah, I guess so.

13 QUESTION-and-ANSWER SESSION

14 MR. MYHRE: What's the breakdown on the Federal
15 money? I lived on Oahu at one time and they're always
16 talking about H-3 or whatever it was, all of a sudden the
17 federal money is going to run out and they decide to do
18 something. What effect does that have here?

19 MR. TSUZUKI: I'm not sure if I understand your
20 question but --

21 MR. MYHRE: Well, say if there's 30 million to
22 make it, what if 27 of it or 25 of it comes from the
23 federal government and the rest from the state or the
24 county, whoever it is.

25 MR. TSUZUKI: Yes. As far as the construction of
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1 the project approximately 80 percent of the cost comes from
2 the federal government, Federal Highway Funds. Twenty
3 percent comes from state. You're referring to that?

4 MR. MYHRE: Yes.

5 MR. TSUZUKI: And your question is?

6 VOICE: What was the breakdown you gave? 80/20?

7 MR. TSUZUKI: Yeah. I heard something else as
8 far as what you wanted to --

9 MR. MYHRE: Is time running out for the 80
10 percent for us or does that appear to be good for another
11 five or ten years, six months?

12 MR. TSUZUKI: Well, the federal government --
13 Congress really decides how much money is really going to
14 be appropriated every year. So that can change over the
15 number of years. That's not a steady thing.

16 MR. MYHRE: That's not a major problem, then?

17 MR. TSUZUKI: Well, it is.

18 MR. MYHRE: Next year it might be 60?

19 MR. TSUZUKI: If the federal government decides
20 or Congress decides to cut back and they are, you know,
21 trying to cut back as far as federal dollars in all areas,
22 not only highways, all over. So it is a concern.

23 MR. MYHRE: So we should take advantage of it
24 now, then?

25 MR. TSUZUKI: Yes.

1 MR. MYHRE: Thank you.

2 MR. TAMURA: Yes?

3 MR. GREENWELL: Do you consider the project
4 schedule shown in the EIS as reasonably a fast track?

5 MR. NAKANO: I think I would characterize that as
6 more typical. It was not intended to be a fast track. It
7 would be an average project.

8 MR. GREENWELL: My question is somewhat similar
9 to yours: Is there a ceiling maybe 80 percent if we look
10 at the overall cost as being a very high cost for a
11 roadway? There's some danger here that the feds can come
12 up and say the overall cost is too high, therefore we are
13 not going to participate. Do you have that option, and
14 will they say you're only entitled to so much per mile or
15 some other rule that might be in there?

16 MR. NAKANO: The concern is the cost per mile. The
17 federal government is not going to tell us "no." As long
18 as the federal government agrees that these estimates are
19 reasonable, they don't have any --

20 MR. GREENWELL: They don't have some hard and
21 fast rule?

22 MR. TSUZUKI: No. There's no rule that says that
23 that highway has to cost so many million per mile or
24 anything like that.

25 MR. GREENWELL: Or cannot exceed so much?

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1 MR. TSUZUKI: They would have to agree with the
2 cost estimates. And a cost estimate is just that, just a
3 cost estimate. Actual construction will be based on bids
4 received from contractors.

5 MR. GREENWELL: When will you be ready to put
6 this out to bid?

7 MR. TSUZUKI: If you look at your handout, I
8 think it mentions -- whatever it mentions.

9 MR. TAMURA: '97.

10 MR. TSUZUKI: The handout mentions mid 1997 to
11 start construction.

12 MR. GREENWELL: I'm old enough so I can use the
13 excuse I didn't bring my glasses.

14 VOICE: Is there any reason that this project
15 couldn't be moved forward? '97 -- well, I was going to say
16 a year a half away. What is delaying the -- why is this
17 project so far down the road?

18 MR. TSUZUKI: I don't want to fight over who
19 wants to answer that.

20 Keith, you know, mentioned a process we have to
21 go through. This is a federal aid project. We have to go
22 through this EIS process. That's a requirement we have to
23 do it if we intend to use federal funds.

24 VOICE: This has not been an issue then that the
25 EIS has not begun?

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1 MR. TSUZUKI: No. The draft EIS is available
2 right now for public comment. That's the purpose of this
3 meeting, to really show you what the results -- what the
4 draft Environmental Impact Statement, what those results
5 are and receive public comment. There was that September
6 22nd deadline for comments that we are setting for receipt
7 of public comments on the draft EIS.

8 After we do that, after we receive all of these
9 comments, we're going to go through all of them, evaluate
10 all of them, and try and address all of these comments and
11 come up, as David Atkin mentioned earlier in his
12 presentation, by the end of this year, we're going to
13 complete the EIS and come out with a final version of that
14 document.

15 VOICE: Approximately a four-month process after
16 the public hearing is held?

17 MR. TAMURA: Approximately, yes. Then, you know,
18 I guess, continuing on it's the federal government. Once
19 they accept this document of the final Environmental Impact
20 Statement and issue what is called a Record of Decision,
21 which means they either accept one of these alignments as
22 the final alignment for the highway, then they'll authorize
23 the state to proceed with the design of the project. The
24 design is the preparation of the actual construction
25 drawings. And that's the time, you know, that would occur

1 between the end of the year and the actual start of
2 construction. Design has to occur first.

3 VOICE: Thank you.

4 MS. HERKES: One comment and one question. The
5 comment is we hope that you would get that out to bid as
6 soon as possible to put our construction industry back to
7 work. And I have an engineering question. We've heard
8 several people tonight talk about the road being engineered
9 for heavy truck traffic. Is it going to be engineered for
10 heavy truck traffic? Is it going to be built that way?

11 MR. NAKANO: Yes. The paved constructed design
12 is based on the volume and type of traffic expected.
13 Various facilities will be designed for whatever type of
14 traffic is anticipated. In this case, I would more than
15 likely say the trucks are a heavy percentage of that volume
16 so, no doubt, it would be built a little more substantially
17 than other roads.

18 MS. HERKES: Well, what you've heard and what
19 you're telling me is the three mauka-makai roads, none of
20 which are appropriate for truck traffic for various
21 reasons. We need at least one that is appropriate for
22 heavy truck traffic. I'd hate to think that this is going
23 by the high school or through the housing development. But
24 if this is the only one that we have to get that truck down
25 there, it's a vital link for our community. So we need to

1 stress this fact that it needs to be designed for heavy
2 truck traffic.

3 MR. NAKANO: (Nods head up and down).

4 VOICE: I would like to address my question to
5 the gentlemen who did the EIS. I want to know what
6 criteria was used to determine visual impacts and sound?
7 And as far as the easement right-of-way, I notice that on
8 the blue line on the map here, the easement is a lot closer
9 right in that area, which just happens to be where my lot
10 is, about 150 feet from my back door.

11 MR. ATKIN: If I understand your question
12 correctly, you're asking me first about the visual, then
13 about the noise, then about the width of the blue zone
14 there that we're showing those lines on that drawing.

15 The EIS is a disclosure document. We're simply
16 -- in terms of the visual, we are simply reporting our
17 conclusions about what we think the visual impacts would
18 be. And where the roadway is elevated above the existing
19 grade by virtue of being on a berm, we're simply just
20 disclosing what we feel would block the views of some
21 people. So there's no criteria. We're simply making a
22 conclusion as to what we think the visual impact would be.

23 In terms of the noise, we're basically guided by
24 something called the National Abatement Criteria. Those
25 are numerically established by the Federal Highways.

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1 They're used as guidelines as to when one needs to deploy
2 sound barriers or other mitigation. So our noise
3 predicting model tells us about the change in noise
4 levels. And in future noise levels where we see certain
5 values as established by the National Abatement Criteria,
6 it would suggest we need to do noise mitigation for highway
7 noise. So that's the criteria that we use on the noise
8 side.

9 In terms of the width of the blue line, I think
10 there is an intent to try to keep this within certain
11 property lines.

12 MR. NAKANO: Yes.

13 MR. ATKIN: That explains why the blue line is
14 where it is on the plans.

15 MR. GREENWELL: Somewhat of a related question
16 but with respect -- I'm speaking of the five homes within
17 the detour road. Earlier in the presentation, I think
18 there's been an acknowledgement there will be noise impacts
19 and perhaps justification for noise mitigation somewhere
20 down the road. And there seems to be an acknowledgement
21 that there's justification for landscaping or some other
22 mitigation for visual impacts.

23 I'm sorry, I don't recall where it came out. I
24 thought I understood from the presentation this evening
25 that acceptance of the EIS constitutes a commitment to

1 follow-through with those mitigation measures. Did I hear
2 that right? Or what can you say to a homeowner who says
3 the problem has been identified, but how do I know that
4 when that time comes, whether it's initially or down the
5 road, that those steps will be taken? Would you comment a
6 little further?

7 MR. ATKIN: I'd say it's important to get
8 comments like that on the record. I really encourage you
9 to restate those concerns and follow that as part of this
10 proceeding as the deadline is September 22nd. So by going
11 on record formally with those kinds of concerns, that helps
12 bring everyone's attention -- draws their attention to a
13 particular issue that we feel needs mitigation.

14 A Record of Decision issued by the Federal
15 Highways Administration basically is a declaration they
16 accept this document as an objective disclosure document,
17 that all the major impacts, both positive and negative,
18 have been accurately disclosed. It doesn't say that there
19 won't be any adverse impacts, but there's a statement of
20 national policy to try to minimize to the maximum degree
21 adverse impacts. And so there are guidelines as to when
22 that occurs and to what degree that occurred and so forth.
23 But certainly it's the Federal Highways intention to
24 minimize adverse impacts. So I may not have fully answered
25 your question but I'd prefer to get those comments as part

1 of the official record.

2 MR. GREENWELL: Another question, if I may, with
3 respect to the detour road. There is a right-of-way --
4 there is a budget item for right-of-way acquisition with
5 respect to the detour road. Does that contemplate fee
6 acquisition or is it lease-hold-type acquisition for a term
7 only? Could you clarify if it's been determined at this
8 point what it will be?

9 MR. NAKANO: Certainly. The detour road is meant
10 to be a temporary road and as such right-of-way acquisition
11 fees shown there are for lease-hold or they're an interim
12 condemnation for the period of construction.

13 MR. BENNETT: George Bennett here for the Kona
14 Heavens Community Association. Two questions. One, were
15 the planners aware of the K-to-K Plan that suggested
16 Kealakehe Parkway be one of the roads with the green zones
17 and the bike paths on it? And number two, we're going to
18 build a, what, half-a-mile detour road and then wipe it off
19 the face of the Earth when we need more roads? Is that the
20 plan?

21 MR. NAKANO: Sorry, I kind of missed your first
22 question.

23 MR. BENNETT: Were the planners aware of the
24 K-to-K Plan or the Kailua to Keahole General Plan that
25 designated Kealakehe Parkway as well as Hina Lani as one of

1 the main connecting roads that would have a greenbelt
2 beside it and jogging paths and bike trails? And if they
3 were, why did they chose to ignore it?

4 MR. NAKANO: I'll try to answer that. What you
5 see here in a typical section is the representation of the
6 of roadway section. In a rural condition it is anticipated
7 that with sufficient population and expansion, that the
8 road will be urbanized and then you will have things such
9 as curbs and gutters, sidewalks, that type of improvement.
10 What you see now does not include those types of
11 improvements.

12 I think that was part of the plan. It may be as
13 part of a late part of the project. The county -- the
14 K-to-K Plan, by the way, is a county plan. And while it's
15 not -- it's not that we ignored it. We did look at it and
16 took it into consideration.

17 Your second question was on?

18 MR. BENNETT: The temporary road that while
19 we're in a dearth of habitable roads, we're going to spend
20 money to build one and then eliminate it after a few years?

21 MR. NAKANO: The detour road that you see there
22 is necessary for the period of construction. After that
23 period, this part of the roadway will have the means to
24 service the homes in this area. The road crosses the
25 boundary of two landowners. At this point, the landowner

1 on this side has not indicated his willingness for that
2 detour or that roadway to remain. This will be temporary
3 and will come out, particularly if the landowner does not
4 wish it there. This part of the roadway will have to
5 remain to service the residences.

6 MR. ATKIN: We're certainly aware of the K-to-K
7 Plan. We've talked about it in terms of pedestrian
8 facilities and bikeways and all the rest, and greenbelts.
9 When you mention greenbelts, we're definitely thinking
10 about a landscaping plan. We're primarily here tonight to
11 talk about landscaping and irrigation facilities, any part
12 of the plan or anything like that.

13 In terms of bike facilities, the K-to-K Plan was
14 superseded by the state-wide Bicycle Master Plan. And that
15 more recent plans do not call for bike facilities along
16 Kealakehe Parkway. We simply point out that bicycles could
17 use the eight-foot wide shoulder on both side of the
18 roadway. But the more recent bike plans do not call for
19 formal bicycle facilities along this section of the road.

20 VOICE: Your 1997 construction forecast bases it
21 right in the middle of a forecasted 400-million-dollar
22 deficit, according to the Governor. Is that going to hold
23 this up and can the legislature say "no" to this project?

24 I guess what I'm asking is the state funds --
25 eight million dollars doesn't sound like a lot of money

1 when you're talking 40. Still we're talking a 400-million-
2 dollar deficit.

3 MR. TSUZUKI: The answer to your question is that
4 definitely the legislature could decided not to fund the
5 construction of this project. At this point, the funds
6 have not been appropriated by the legislature for the
7 construction because we haven't reached that stage yet.
8 The legislature could decide in the future not to fund the
9 state portion and that would definitely hold up the
10 project.

11 VOICE: I believe the gentleman just testified
12 that bicycles could use the eight-foot shoulders on both
13 sides of the road. I think an eight-foot shoulder on both
14 sides of the road -- you only build half as you've done in
15 the lower portion. And you're only going to have a bike --
16 a shoulder on one side available for bikes causing bikes to
17 come, in that case, downhill against traffic, which is not
18 completely unsafe. See what I'm saying? You have one lane
19 up there and you're only going to have a shoulder on one
20 side.

21 MR. NAKANO: In planning this project, we
22 anticipated the roadway would be built with four lanes with
23 safe shoulders on each side, as you see it here
24 (indicating). If you consider what they've done with the
25 lower roadway, putting in three lanes. But it is more cost

1 effective to put in the fourth lane while you're doing it
2 and it would cost a lot more to go back in later to add
3 that extra lane.

4 VOICE: You don't anticipate having to have one
5 side built with one shoulder?

6 MR. NAKANO: Not at this time.

7 MR. TAMURA: Yes?

8 MR. GREENWELL: Your point is well taken if you
9 are going to be building that detour. I'm not the sole
10 owner of that property there. As far as I'm concerned I'm
11 half-owner. I would be very interested in the concept of
12 leaving that road intact. I think it makes a lot of sense
13 to come down Old Mamalahoa and go up Palani without going
14 onto the highway. And I think that's a very valuable
15 point.

16 My other earlier question: Have we addressed how
17 we're going to make the transition from a four-lane highway
18 to Mamalahoa Highway, which is two-lane?

19 MR. NAKANO: That really is a more detailed
20 design question. Those types of issues get taken care of
21 in the design process. We have looked at various scenarios
22 dropping into either Palani Road or Old Mamalahoa Highway.
23 These are just options.

24 MR. GREENWELL: That may be involved in saving
25 the detour. That may be part of the design solution.

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1 MR. NAKANO: Could be.

2 MR. GREENWELL: That's a very important point.
3 It's quite a bit of road. It looks like it's a short space
4 but that's a lot of road there.

5 VOICE: Has there been any consideration of
6 runaway truck ramps? Because we're looking at, as you
7 stated some places have an 11-percent grade. You have got
8 a grade coming downhill and that hairpin and you've got a
9 semi- tractor and they're running away, is there any
10 consideration for runaway truck ramps?

11 MR. NAKANO: Not at this time. Good point. The
12 grades are not as high as 11 percent. We anticipate making
13 the maximum grades to be somewhere around nine-and-a-half
14 percent. Still you're right. At this point, we haven't
15 looked at an escape route. That's something that could be
16 looked at as far as of the design process.

17 MR. GREENWELL: I have a perfect place for one.
18 One of the earlier instructors mentioned in the
19 EIS is the Old Mamalahoa Highway and Mamalahoa Highway,
20 which I believe in both presentations they showed level of
21 service F during peak hours. What could you say with
22 respect to the scope of this project affecting -- or as
23 part of this project, are there any contemplated changes or
24 improvements at that junction that would be within the
25 design envelope of this project? It's already a problem.

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1 And is there work being done in the area to either adjust
2 it as part of this project or has that yet to be
3 determined?

4 MR. NAKANO: It's yet to be determined. It's
5 certainly a design issue that could be addressed if the
6 volumes warrant it, and it certainly looks like it may.
7 Traffic signals could be put in as part of the completion
8 of this project, and that would be a means of alleviating
9 that congestion at that intersection. We are anticipating
10 putting in left-turn bays to accommodate that traffic.

11 MR. GREENWELL: For both left-turn improvements
12 for Old Mamalahoa Highway onto Mamalahoa Highway as well
13 Mamalahoa Highway to Old Mamalahoa Highway, both those left
14 turns?

15 MR. NAKANO: That's correct.

16 MR. BENNETT: So Palani Road is a County road?

17 MR. TAMURA: Yes.

18 Anymore questions? (No response). If not, we'd
19 like to thank you for your patience here tonight and for
20 your participation in this hearing. It's now 8:40 p.m. and
21 I'd like to declare this public hearing to be adjourned.

22 Thank you.

23 (The Public Hearing was concluded at 8:40 p.m.)

24 --o0o--

25

1 STATE OF HAWAII)
2 COUNTY OF HAWAII) SS.

3 I, ANDREA VASCONCELLOS, RPR, CSR 356, Notary Public in
4 and for the State of Hawaii, do hereby certify:

5 That on August 31, 1995 at 7:15 p.m. personally
6 appeared before me the representatives and speakers whose
7 testimony is contained herein;


8 That the foregoing was taken down by me in machine
9 shorthand and thereafter reduced to print under my
10 direction and control;

11 That the foregoing pages represent, to the best of my
12 ability, a true and correct transcript of the proceedings
13 had in the foregoing matter;

14 I further certify that I am not an attorney for any of
15 the parties hereto nor in any way interested in the outcome
16 of the cause named in the caption.

17 DATED: 9-19-95

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25


ANDREA H. VASCONCELLOS RPR, CSR 356
NOTARY PUBLIC, STATE OF HAWAII
MY COMMISSION EXPIRES: 4/23/98

Appendix G.3 - Letter to Draft EIS Commentors

HWY-PA
2.9087

MAY - 4 1998

SEE ATTACHED LIST

Subject: Kealahou Parkway, Project No. 190A-01-92
North Kona, Hawaii

In accordance with the requirements of the State of Hawaii's Environmental Impact Statement (EIS) Rules, we are providing you with a copy of your letter submitted during the Draft EIS public comment period and our response and evaluation to your comments. Your letter and the response have been included in the Final EIS for the Kealahou Parkway project. A copy of the Final EIS will be sent to you following its acceptance by the Federal Highway Administration.

If you have any questions, please contact Ronald Tsuzuki, our Head Planning Engineer, Highways Division, at (808) 587-1830.

Very truly yours,

Kazu Hayashida

KAZU HAYASHIDA
Director of Transportation

Enclosure

DO:gm

/ bc: HWY-PA

Similar letter sent to the following:

Ms. Esther Ueda, Executive Officer
Land Use Commission
Department of Business, Economic
Development and Tourism
Old Federal Building, Room 104
335 Merchant Street
Honolulu, Hawaii 96813

Mr. Ray H. Jyo, P.E.
Director of Engineering
Department of the Army
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