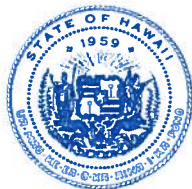


NEIL ABERCROMBIE  
GOVERNOR

MAY 23 2012

FILE COPY



GLENN M. OKIMOTO  
DIRECTOR

Deputy Directors  
JADE T. BUTAY  
FORD N. FUCHIGAMI  
RANDY GRUNE  
JADINE URASAKI

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
869 PUNCHBOWL STREET  
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:

HWY-PA  
2.1789


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OFFICE OF ENVIRONMENTAL  
QUALITY CONTROL

May 11, 2012

TO: GARY HOOSER, DIRECTOR  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

FROM: GLENN M. OKIMOTO, Ph.D.  
DIRECTOR OF TRANSPORTATION 

SUBJECT: FINAL ENVIRONMENTAL ASSESSMENT/ENVIRONMENTAL IMPACT  
STATEMENT PREPARATION NOTICE; SADDLE ROAD EXTENSION,  
FROM MAMALAHOA HIGHWAY (STATE ROUTE 190) TO QUEEN  
KAAHUMANU HIGHWAY (STATE ROUTE 19), SOUTH KOHALA/NORTH  
KONA DISTRICTS, ISLAND OF HAWAII

With this letter, the State of Hawaii, Department of Transportation hereby transmits the Final Environmental Assessment and Environmental Impact Statement Preparation Notice (FEA-EISPN) for the Saddle Road Extension: From Mamalahoa Highway (State Route 190) to Queen Kaahumanu Highway (State Route 19), situated at TMK: (3) 6-8-001:005, 066, 067, 6-8-002:013, 014, 015 and 7-1-003:001, South Kohala/North Kona Districts, Island of Hawaii for publication in the next available edition of the Environmental Notice.

We understand that publication of the FEA-EISPN in the Environmental Notice will initiate a 30-day public consultation period for parties to comment on the action and request to become consulted parties in the preparation of the draft environmental impact statement.

Enclosed is a completed OEQC Publication Form, two copies of the FEA-EISPN, an Adobe Acrobat PDF file of the same, and an electronic copy of the publication form in MS Word. Simultaneous with this letter, we have submitted the summary of the action in a text file by electronic mail to your office.

We are copying the Governor's Office to inform them that a subsequent draft EIS will be prepared at the conclusion of the public consultation period.

If you have any questions, please contact Dean Yanagisawa, Project Manager at 587-1834.

Enclosures

c: Governor Neil Abercrombie

**OEQC Publication Form  
The Environmental Notice**

**Name of Project:** Saddle Road Extension: From Māmalahoa Highway (State Route 190) to Queen Ka‘ahumanu Highway (State Route 19)  
**Applicable Law:** Chapter 343, HRS and NEPA  
**Type of Document:** EISPN/EA  
**Island:** Hawai‘i  
**District:** South Kohala/North Kona  
**TMK:** (3<sup>rd</sup>) 6-8-001:005, 066, 067; 6-8-002:013, 014, 015; 7-1-003:001  
**Permits Required:** Federal: Clean Water Act Section 404 Permit\*; Section 106 NHPA concurrence; Section 7 ESA concurrence. State: Clean Water Act Section 401 Water Quality Certification\*, Stream Channel Alteration Permit\*; Historic Sites Review, State Highways Permit, National Pollutant Discharge Elimination System Permit, Coastal Zone Management Consistency. County: Grading, Grubbing, Excavating and Stockpiling Permits; Subdivision Approval (\* = not yet determined)

**Name of Proposing/  
Approving Agency:** Hawai‘i Department of Transportation, Highways Division, Hawai‘i District  
Address 869 Punchbowl Street, Rm. 301  
City, State, Zip Honolulu HI 96813  
Contact and Phone Dean Yanagisawa 808-587-1834

**Consultant** Geometrician Associates  
Address PO Box 396  
City, State, Zip Hilo HI 96721  
Contact and Phone Ron Terry 808-969-7090

**Project Summary:** The State of Hawai‘i Department of Transportation, in cooperation with the Federal Highway Administration, Hawai‘i Division, proposes an arterial connector highway between Māmalahoa Highway, State Route (SR) 190, and Queen Ka‘ahumanu Highway (SR 19). The eastern terminus of the proposed highway would be at the junction where the realigned Saddle Road (SR 200) meets SR 190, near Milepost 13. The western terminus would be at the junction of SR 19 and Waikoloa Beach Drive. The purpose and need of the Saddle Road Extension project are to: 1) improve the efficiency and operational level of traffic movement between East and West Hawai‘i, particularly for traffic on the realigned Saddle Road; 2) improve safety; and 3) support special needs of commercial truck traffic and military traffic.

**Dear Participant:**

Attached for your review is an Environmental Impact Statement Preparation Notice/ Environmental Assessment (EISPN/EA) prepared pursuant to the EIS law (Hawai'i Revised Statutes, Chapter 343) and the EIS rules (Administrative Rules, Title 11, Chapter 200).

Project Name: **Saddle Road Extension: From Māmalahoa Highway (State Route 190) to Queen Ka'ahumanu Highway (State Route 19)**

Location: Island: **Hawai'i** District: **South Kohala/North Kona**  
Tax Map Key Number: **(3rd) 6-8-001:005, 066, 067; 6-8-002:013, 014, 015; 7-1-003:001**

Your comments must be received or postmarked by: **June 22, 2012**

Please send original comments to the:

Consultant: **Geometrician Associates**

Address: **PO Box 396  
Hilo HI 96721**

Contact: **Ron Terry** Phone: **808-969-7090**

Copies of the comments should be sent to:

Proposing/Approving

Agency: **Hawai'i Department of Transportation, Highways Division**

Address: **869 Punchbowl Street, Rm. 301  
Honolulu HI 96813**

Contact: **Dean Yanagisawa** Phone: **808-587-1834**

If you no longer need the EISPN/EA, please recycle it. Thank you for your participation in the Environmental Assessment process.

**Dear Librarian:**

Please make available to your patrons the attached Environmental Impact Statement Preparation Notice/ Environmental Assessment (EISPN/EA) prepared pursuant to the EIS law (Hawai'i Revised Statutes, Chapter 343) and the EIS rules (Administrative Rules, Title 11, Chapter 200), along with this notice. We very much appreciate your assistance in the public process for the EA.

Project Name: **Saddle Road Extension: From Māmalahoa Highway (State Route 190) to Queen Ka'ahumanu Highway (State Route 19)**

Location: Island: **Hawai'i** District: **South Kohala/North Kona**  
Tax Map Key Number: **(3rd) 6-8-001:005, 066, 067; 6-8-002:013, 014, 015; 7-1-003:001**

Your comments must be received or postmarked by: **June 22, 2012**

Please send original comments to the:

Consultant: **Geometrician Associates**

Address: **PO Box 396  
Hilo HI 96721**

Contact: **Ron Terry** Phone: **808-969-7090**

Copies of the comments should be sent to:

Proposing/Approving

Agency: **Hawai'i Department of Transportation, Highways Division**

Address: **869 Punchbowl Street, Rm. 301  
Honolulu HI 96813**

Contact: **Dean Yanagisawa** Phone: **808-587-1834**

If you no longer need the EISPN/EA, please recycle it. Thank you for your participation in the Environmental Assessment process.

**Dear Participant:**

This notice is to inform you that that an Environmental Impact Statement Preparation Notice/ Environmental Assessment (EISPN/EA) prepared pursuant to the EIS law (Hawai'i Revised Statutes, Chapter 343) and the EIS rules (Administrative Rules, Title 11, Chapter 200) is available for review. **As of May 23, 2012, the EA is available for download at: <http://hawaii.gov/health/environmental/oegc/index.html>**

Hardcopies of the EA have been sent to the Thelma Parker (Waimea) Public Library, the Hilo Public Library, the Kailua-Kona Public Library, and the Hawai'i State Library. Limited numbers of hardcopies are also available for private distribution (call 808-969-7090 to request).

Project Name: **Saddle Road Extension: From Māmalahoa Highway (State Route 190) to Queen Ka'ahumanu Highway (State Route 19)**

Location: Island: **Hawai'i** District: **South Kohala/North Kona**  
Tax Map Key Number: **(3rd) 6-8-001:005, 066, 067; 6-8-002:013, 014, 015; 7-1-003:001**

Your comments must be received or postmarked by: **June 22, 2012**

Please send original comments to the:

Consultant: **Geometrician Associates**

Address: **PO Box 396  
Hilo HI 96721**

Contact: **Ron Terry** Phone: **808-969-7090**

Copies of the comments should be sent to:

Proposing/Approving

Agency: **Hawai'i Department of Transportation, Highways Division**

Address: **869 Punchbowl Street, Rm. 301  
Honolulu HI 96813**

Contact: **Dean Yanagisawa** Phone: **808-587-1834**

DISTRIBUTION LIST SADDLE ROAD EXTENSION EISPN/EA

FEDERAL AGENCIES

Loyal Mehrhoff, Field Supervisor  
Pacific Islands Fish and Wildlife Office  
USFWS Div. of Ecological Services  
P.O. Box 50088  
Honolulu HI 96850

U.S. Natural Resources Conservation Service  
P.O. Box 50004  
Honolulu HI 96850

LC Rolland C. Niles  
HQ, PTA, USAG-HI  
Building T-180, Milepost 36  
Hilo HI 96720

U.S. Army Garrison, Hawai'i  
Office of the Garrison Commander  
Attn: IMPC-HI-ZA  
851 Wright Ave., WAAF (Stop 107)  
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U.S. Army Installation Management Command, Pacific Region  
132 Yamanaga Street  
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[jimk@usgs.gov](mailto:jimk@usgs.gov)

Mr. George P. Young, Chief  
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Honolulu HI 96850

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Honolulu HI 96813

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Honolulu, HI 96810

Hawaiʻi State Office of Planning  
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Honolulu HI - 96804-2359

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University of Hawaiʻi  
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aloha@aohcc.org

Big Island Bird Hunters Association  
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854-4119

Cave Conservancy of Hawai'i  
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Hawai'i Island Contractors Association  
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Hilo HI 96720

Hawaii Leeward Planning Conference  
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Historic Hawai'i Foundation  
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Honolulu HI 96806

Hui Malama I Na Kupuna O Hawai'i Nei  
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Haleiwa, HI 96712-0190

Kohala Coast Resort Association  
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Kona-Kohala Chamber of Commerce  
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Kailua-Kona, HI 96745

Malu 'Aina Center for Non-Violent Education & Action  
Jim Albertini  
P.O. Box AB  
Olaa HI 96760

Parker Ranch  
P. O. Box 458  
Kamuela HI 96743

Puakō Community Association  
P.O. Box 44345  
Kawaihae HI 96743

Sierra Club, Moku Loa Group  
P.O. Box 1137  
Hilo HI 96721

South Kohala Community Development Plan Action Committee  
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South Kohala Traffic Safety Committee  
SKTSC Secretary  
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Waikii Ranch  
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President  
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Waikoloa Dry Forest Preserve  
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Waikoloa Village Outdoor Circle  
P.O. Box 384721  
Waikoloa, HI 96738

Waimea Community Association  
P.O. Box 2665  
Kamuela HI 96743

Waimea Hawaiian Homesteaders Association  
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West Hawai'i Shooting Range Steering Committee  
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68-1310 Mauna Lani Dr., Ste. 101  
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Waikoloa Village Association  
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Waikoloa HI 96738-3910

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P.O. Box 789  
Kailua Kona HI 96745

Hawai'i Tribune Herald  
355 Kinoole Street  
Hilo HI 96720

Honolulu Star-Advertiser  
City Desk  
P.O. Box 3110  
Honolulu HI 96802

Environment Hawai'i  
ptummons@gmail.com

## LIBRARIES

Librarian  
Hilo Public Library  
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Hilo HI 96720

Librarian  
Kailua-Kona Public Library  
75-140 Hualalai Road  
Kailua-Kona HI 96740

Thelma Parker Library  
67-1209 Mamalahoa Hwy.  
Kamuela HI 96743-8429

Hawai'i State Library  
Hawai'i & Pacific Room  
478 S. King St.  
Honolulu HI 96813

## LANDOWNERS/LESSEES

BIVWR Investment LLC  
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Waikoloa Mauka, LLC  
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WQJ2008 Investment LLC  
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AT&T Wireless Services of HI LLC  
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Waikoloa Village Association  
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Waikoloa HI 96738-3910

## ELECTED OFFICIALS

Office of Senator Daniel K. Inouye  
Prince Kuhio Federal Building  
Honolulu HI 96850

Office of Senator Daniel K. Akaka  
Prince Kuhio Federal Building  
Honolulu HI 96850

Office of Mazie Hirono  
Representative in Congress  
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repevans@Capitol.hawaii.gov

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Hilo HI 96720

Hawai'i County Councilman Pete Hoffman  
25 Aupuni Street  
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Mayor William P. Kenoi  
County of Hawai'i  
25 Aupuni Street  
Hilo HI 96720

John Buckstead  
West Hawai'i Governor's Liaison Office  
75-5722 Kuakini Highway, Suite #215  
Kailua-Kona HI 96740

**Environmental Impact Statement  
Preparation Notice/Environmental Assessment**

**SADDLE ROAD EXTENSION:  
From Māmalahoa Highway (State Route 190) to  
Queen Ka‘ahumanu Highway (State Route 19)**

**Island of Hawai‘i, Districts of South Kohala and North  
Kona, State of Hawai‘i  
Project No. DP-HI-0200(5)**

Waikoloa and Pu‘uanahulu  
South Kohala and North Kona Districts, Hawai‘i  
TMK: (3<sup>rd</sup>) 6-8-001:005, 066, 067; 6-8-002:013, 014, 015; 7-1-003:001

Hawai‘i Department of Transportation  
Highways Division

and

U.S. Department of Transportation  
Federal Highway Administration  
Hawai‘i Division

**May 2012**



**Environmental Impact Statement  
Preparation Notice/Environmental Assessment**

**SADDLE ROAD EXTENSION:  
From Māmalahoa Highway (State Route 190) to  
Queen Ka‘ahumanu Highway (State Route 19)**

**Island of Hawai‘i, Districts of South Kohala and North  
Kona, State of Hawai‘i  
Project No. DP-HI-0200(5)**

Waikoloa and Pu‘uanahulu  
South Kohala and North Kona Districts, Hawai‘i  
TMK: (3<sup>rd</sup>) 6-8-001:005, 066, 067; 6-8-002:013, 014, 015; 7-1-003:001

Hawai‘i Department of Transportation  
Highways Division

and

U.S. Department of Transportation  
Federal Highway Administration  
Central Federal Lands Highway Division

**May 2012**

This document is prepared pursuant to the Hawai‘i Environmental Protection Act,  
Chapter 343, Hawai‘i Revised Statutes (HRS), and  
Title 11, Chapter 200, Hawai‘i Department of Health Administrative Rules (HAR).



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**ABBREVIATIONS**

AASHTO	American Association of State Highway and Transportation Officials
ALISH	Agricultural Lands of Importance to the State of Hawai‘i
BMP	Best Management Practice
CFLHD	Central Federal Lands Highway Division (of FHWA)
DEM	Hawai‘i County Department of Environmental Management
DLNR	Hawai‘i State Department of Land and Natural Resources
DOFAW	(DLNR) Division of Forestry and Wildlife
EA	Environmental Assessment
EIS	Environmental Impact Statement
EISPN	Environmental Impact Statement Preparation Notice
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
HDOH	Hawai‘i State Department of Health
HDOT	Hawai‘i State Department of Transportation
HAR	Hawai‘i Administrative Rules
HRS	Hawai‘i Revised Statutes
OE	Ordnance and Explosives
OEQC	Hawai‘i State Office of Environmental Quality Control
ROD	Record of Decision
SFHA	Special Flood Hazard Area
SHPD/O	State Historic Preservation Division/Officer
TIAR	Traffic Impact Analysis Report
UH	University of Hawai‘i
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USNRCS	U.S. Natural Resources Conservation Service

**SUMMARY**

<b>PROJECT NAME:</b>	SADDLE ROAD EXTENSION: From Māmalahoa Highway (State Route 190) to Queen Ka‘ahumanu Highway (State Route 19)
<b>PROPOSING AGENCIES:</b>	Hawai‘i State Department of Transportation, Highways Division and U.S. Department of Transportation, Federal Highway Administration, Hawai‘i Division: Contact: Dean Yanagisawa, HDOT: (808) 587-1834, dean.k.yanagisawa@hawaii.gov
<b>LOCATION:</b>	Waikoloa and Pu‘uanahulu, South Kohala and North Kona Districts, Island of Hawai‘i
<b>TAX MAP KEY &amp; LAND OWNERSHIP:</b>	(3rd) 6-8-001:005, 066, 067; 6-8-002:013, 014, 015; 7-1-003:001 Owners: Various private, State of Hawai‘i
<b>CLASS OF ACTION:</b>	Use of federal and State funds and State lands
<b>DETERMINATION:</b>	Environmental Impact Statement required
<b>PROPOSED ACTION:</b>	Construct State Highway from Māmalahoa Highway near Milepost 13 to Queen Ka‘ahumanu Highway at Waikoloa Beach Drive
<b>PURPOSE:</b>	To provide a safe and efficient route for cross-island traffic between East and West Hawai‘i
<b>STATE LAND USE DISTRICT:</b>	Agricultural
<b>ZONING:</b>	A-5a, A-20a (Agricultural, min. lot size 5/20 acres), Open
<b>PERMITS REQUIRED:</b>	<i>Federal:</i> Clean Water Act Section 404 Permit*; Section 106 NHPA concurrence; Section 7 ESA concurrence. <i>State:</i> Clean Water Act Section 401 Water Quality Certification*, Stream Channel Alteration Permit*; Historic Sites Review, State Highways Permit, National Pollutant Discharge Elimination System Permit, Coastal Zone Management Consistency. <i>County:</i> Grading, Grubbing, Excavating and Stockpiling Permits; Subdivision Approval (* = not yet determined)
<b>ACCEPTING AUTHORITY:</b>	Governor, State of Hawai‘i

## **PART 1: INTRODUCTION**

### **1.1 Project Description and Purpose and Need**

The State of Hawai‘i Department of Transportation (HDOT), in cooperation with the Federal Highway Administration (FHWA), Hawai‘i Division, proposes an arterial connector highway between Māmalahoa Highway, State Route (SR) 190, and Queen Ka‘ahumanu Highway (SR 19) (Figures 1-1 and 1-2). The eastern terminus of the proposed highway would be at the junction where the western terminus of the realigned Saddle Road (SR 200) meets SR 190, near Milepost 13. The western terminus would be at the junction of SR 19 and Waikoloa Beach Drive. The land involved is identified by TMKs: (3<sup>rd</sup>) 6-8-001:005, 066, 067; 6-8-002:013, 014, 015; 7-1-003:001, and is owned by the State of Hawai‘i; Waikoloa Mauka, LLC; WQJ2008 Investment LLC; BIVWR Investment LLC; and the Waikoloa Village Association.

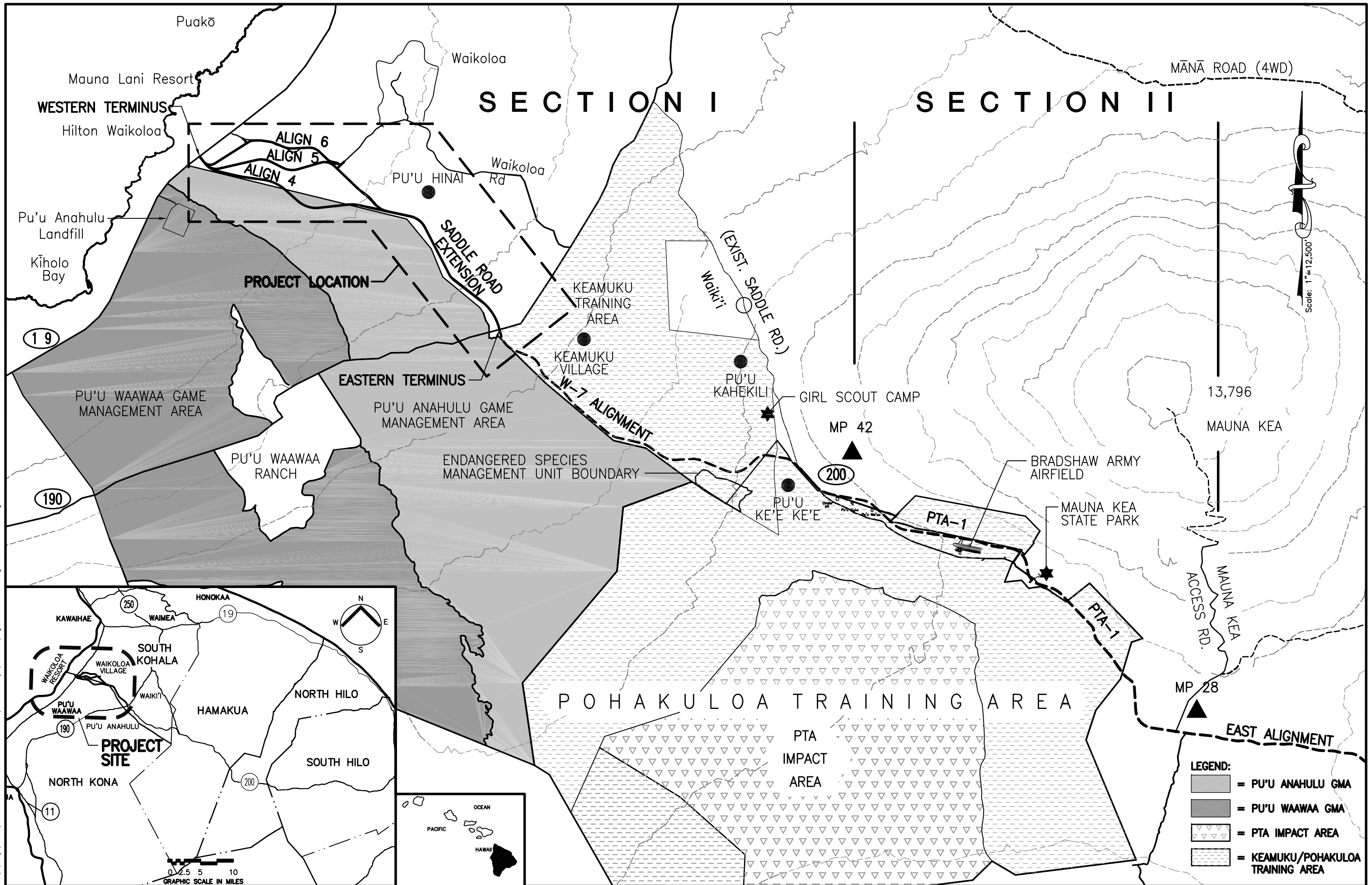
#### *Background*

An Environmental Impact Statement for the project was begun in 1999, and an EIS Preparation Notice was released on August 8, 1999. An alternatives study that generated three alternative alignments was completed, and fieldwork was accomplished over the next two years.

Subsequently, in November 2003, the U.S. Army began an EIS for the *Army Transformation of the 2nd Brigade, 25th Infantry Division (Light) to a Stryker Brigade Combat Team (SBCT)* project, which included purchase and use of Parker Ranch’s Ke‘āmuku Parcel, where the western portion of the Saddle Road had been planned, for military training. As the location of the Saddle Road terminus was critical for the Saddle Road Extension project, the Saddle Road Extension was put on hold pending resolution of this issue. The EIS process for the military training concluded in April 2008, and shortly thereafter, the U.S. Army determined that the western terminus of the Saddle Road would have to move south to reasonably accommodate training activities in the newly acquired Ke‘āmuku Parcel.

With the information that the western terminus of the Saddle Road would be shifted south, the FHWA undertook engineering studies to relocate the western segment of the Saddle Road and began preparation of the *Saddle Road Supplemental Environmental Impact Statement* to study the impacts of this shift. In February 2010, the Final Supplemental EIS was completed and the Record of Decision (ROD) was prepared for the project. The ROD selected the W-7 alignment (see Figure 1-1), with a western terminus relocated about a half-mile south of that presented in the 1999 EIS. This segment of the Saddle Road is currently in construction.

After resolution of this key issue that had placed the Saddle Road Extension project on hold from 2003 to 2010, the Draft EIS for the Saddle Road Extension was finally resumed in late 2011.



**FIGURE 1-1: PROJECT LOCATION AND ALTERNATIVES**

C:\opro\Joel\99011 - 190 to Queen K\Ron Terry\EISP\N\Fig.1-1-SRX Aligns overview.dwg



*Purpose and Need for the Project*

Major destinations spurring cross-island traffic on the island of Hawai‘i include airports (Keahole and Hilo), harbors (Kawaihae and Hilo), beaches and resorts (South Kohala and Kona), and population centers (Hilo, Waimea, and Kailua-Kona). This demand is currently met by SR 19 (along the Hamakua Coast and through Honokaa and Waimea), by the Saddle Road, and by SR 11 (along the less-used route around the southern end of the island).

Traffic between East and West Hawai‘i is forecasted to increase steadily and substantially over the next 20 years, particularly on the Saddle Road and SR 19 routes. The Saddle Road is expected to account for a much larger portion of this traffic than it currently does, because of the major alignment, widening and safety improvements that have been constructed over the last 10 years and will soon be substantially complete (FHWA CFLHD 2010). The new Saddle Road provides a much shorter, faster and safer route between East and West Hawai‘i. Traffic models predict a threefold increase in average daily traffic (ADT) on the Saddle Road to about 4,200 by 2020, and to 6,500 by 2034. The existing western segment of the Saddle Road through Waiki‘i will remain in use mainly for residences and local access, and should see a drop to 840 ADT after construction, with slow growth thereafter.

The Hawai‘i Long Range Land Transportation Plan (HDOT 1998) projected traffic on the existing and various combinations of future highways, and determined that an additional two lanes would be required to handle traffic between Waimea and Kona. This will be partially fulfilled through implementation of the *Master Plan for the Queen Kaahumanu Highway (State Highway 19)* (HDOT 1997), which specifies conversion of this highway to a multi-lane facility, eventually with full access control and grade-separated interchanges, including one at the existing Waikoloa Beach Drive.

When both the Saddle Road and Queen Ka‘ahumanu Highway improvements are complete, much of the capacity need will have been satisfied, with one major gap: from the Māmalahoa Highway in the vicinity of Saddle Road to the Queen Ka‘ahumanu Highway. Both the existing and planned termini of Saddle Road are far from most motorists’ destinations – i.e., Kailua-Kona and the coastal resort areas of South Kohala (see Fig. 1). Presently, two options are available to access the Kona area. The first is via Māmalahoa Highway (SR 190), which provides a relatively direct (36.7 miles) but winding and narrow route to *mauka* North Kona. This route lacks adequate shoulders for most of its length south of Waikoloa Road, and runs through a highly populated residential area for the last 8.7 miles. The other option is via Waikoloa Road (a County road) and Queen Ka‘ahumanu Highway (SR 19), for a total distance of 42.8 miles. The longer distance is due to travel along the relatively winding Waikoloa Road for 12.8 miles. Currently, there is no direct route from the existing or planned Saddle Road termini to the South Kohala resort areas along Queen Kaahumanu Highway.

Both existing routes from East to West Hawai‘i are circuitous and do not meet standards of modern regional highways. They would require substantial costs to improve, which might not be warranted because they are not oriented properly to serve current or future traffic demand. The



terminus of Saddle Road is now shifting six miles to the south of its current location, but unless this or a similar project is done, the circuitous routes to major destinations will remain the same.

The lack of a modern, State highway connection limits the future function of the Saddle Road as a cross-island arterial. There is thus a need to provide a direct, safe, and efficient link between East Hawai‘i and South Kohala/Kona for motorists traveling on Saddle Road.

The project termini for the Saddle Road Extension were set based on accommodating the critical area of expected traffic growth. The eastern or *mauka* project limit is anticipated to be Māmalahoa Highway at the realigned Saddle Road terminus. This limit was selected because it will be the outlet of Saddle Road traffic and thus the future focus point of traffic between East and West Hawai‘i. The western or *makai* terminus is the Queen Ka‘ahumanu Highway (SR 19) at Waikoloa Beach Drive, because this provides the shortest route to SR 19, at a point that is forecasted to become the major intersection in this segment of SR 19 (see Figures 1 and 2 for locations).

In summary, the purpose and need of the Saddle Road Extension project are to:

- Improve the efficiency and operational level of traffic movement between East and West Hawai‘i, particularly for traffic on the realigned Saddle Road;
- Improve safety; and
- Support special needs of commercial truck traffic and military traffic.

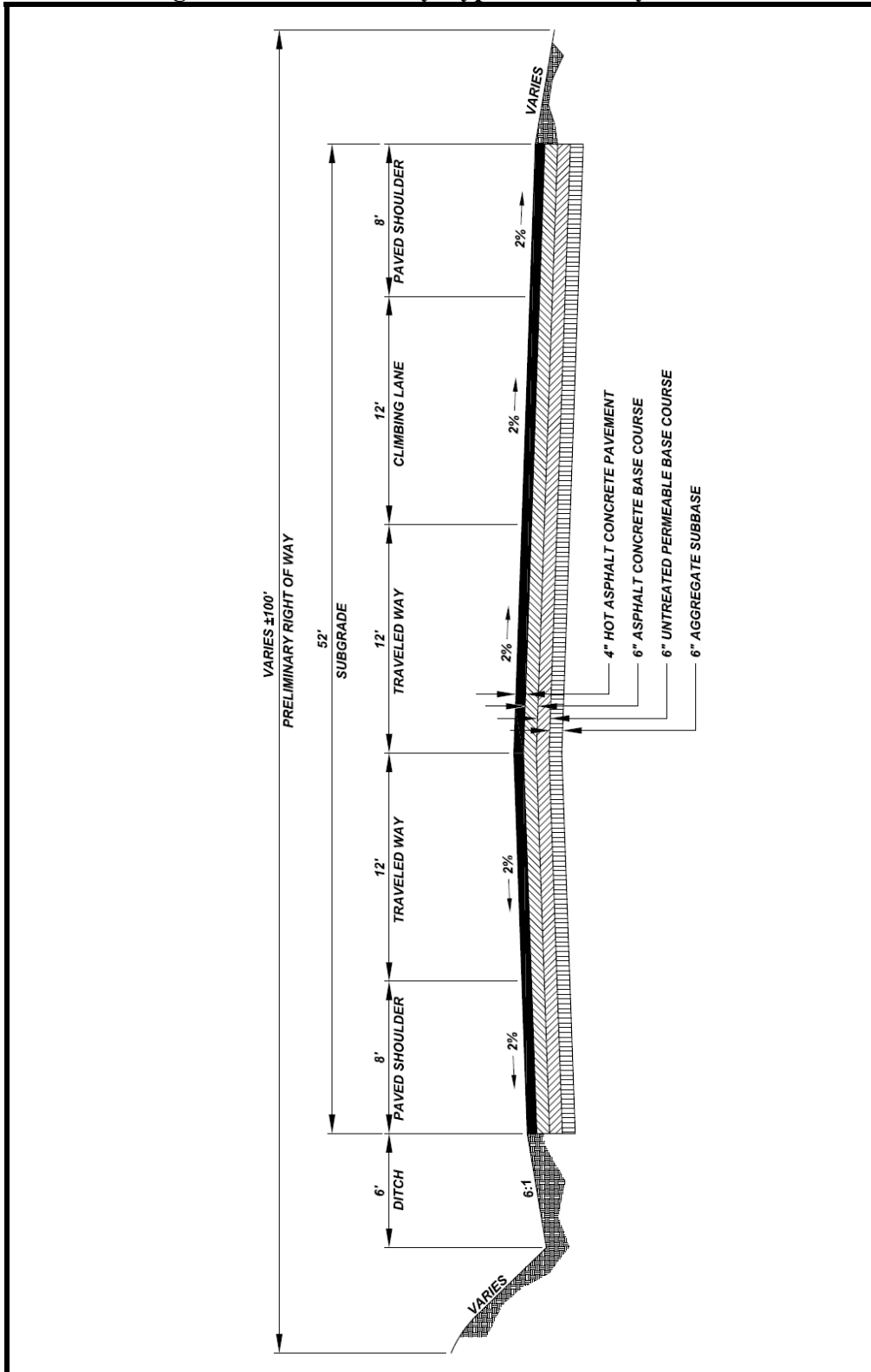
### *Design Specifications*

The proposed design parameters for the arterial highway are (see Figure 1-3 for Typical Section):

- Right-of-way width: Minimum of 100 feet
- Pavement width: Two 12-foot travel way lanes, a 12-foot climbing lane, and 8-foot shoulders (total pavement width of 52 feet)
- Design speed: 50 mph
- Minimum radius curve: 764 feet
- Maximum superelevation: 10 percent
- Maximum grade: 7 percent
- An emergency runaway truck ramp may be warranted depending on slope and length of grades along the alignment that is selected

The Draft EIS will report preliminary engineering studies that may modify the above specifications.

Figure 1-3 Preliminary Typical Roadway Section



### *Timetable and Cost*

The estimated timetable is as follows:

- Complete the EIS phase: May 2013
- Begin design and right-of-way acquisition: 2014
- Begin construction: 2017
- Complete construction: 2019

The Draft EIS will include estimated construction costs for each alternative. The estimated cost will reflect construction of a new two-lane highway with paved shoulders. Where warranted, the following items will also be included in the estimated construction cost: climbing lane, runaway truck ramp, guardrails, scenic/historical pullout, drainage improvements and intersection modifications.

## **1.2 Alternatives**

The Environmental Impact Statement (EIS) will identify and assess alternatives, including the “no action” alternative. A systematic alternatives analysis was conducted in 2000 and analyzed a wide array of potential alternatives including 11 alignments, Transportation Systems Management/Travel Demand Management (TSM/TDM), and Mass Transit. Of these, three Build Alternative Alignments were advanced for study, as shown in Figures 1-1 and 1-2. The Draft EIS will summarize the analysis and determine if the conclusions reached in 2000 are still valid and whether any additional alternatives or revisions to alternatives are appropriate.

The No Action Alternative is the baseline for comparing how new transportation modifications or improvements would accomplish the purposes related to increasing capacity, improving circulation efficiency, improving traffic safety, and satisfying special needs. It provides a reference base to measure impacts to the social and physical environment, both beneficial and adverse.

## **1.3 Environmental Impact Statement Process**

The use of State funds and possibly State lands trigger environmental review requirements under Hawai‘i Revised Statutes Chapter 343. The proposing agency is the State of Hawai‘i Department of Transportation, and the accepting authority to determine the adequacy of the Final EIS is the Governor of the State of Hawai‘i, or an authorized representative.

The use of Federal funds also triggers environmental review requirements under the National Environmental Policy Act of 1969, as amended (NEPA). The Federal Highway Administration of the U.S. Department of Transportation is the source of federal funds and will be the lead agency for environmental compliance under NEPA. The EIS will be a joint State and federal EIS.

The preparation of the Environmental Impact Statement (EIS) begins with publication of the Notice of Intent (NOI) in the Federal Register, which will be conducted separately, and with publication of the availability of this EIS Preparation Notice/Environmental Assessment (EISPN/EA) in the *Environmental Notice* of the Hawai‘i State Office of Environmental Quality Control (OEQC). This EISPN/EA replaces the document published on August 8, 1999.

**Scoping:** Scoping efforts for the EIS will include widespread distribution of the EISPN/EA, a public meeting to be held in Waikoloa during the EISPN/EA comment period, and small-group meetings with agencies, organizations and individuals.

**Draft EIS:** The Draft EIS will document the scoping outreach effort as well as summarize the comments received at meetings. The Draft EIS will include copies of all written comments, and HDOT responses, to the EISPN/EA. The Draft EIS will analyze the environmental impacts of the proposed alternatives and the No Action Alternative. The public will have a 45-day period to review the Draft EIS and provide comments. A public hearing will be conducted during the comment period to encourage public participation and comments.

**Final EIS:** HDOT and FHWA will review and respond to the comments received on the Draft EIS. The Final EIS will incorporate the comments, and include copies of the comments and responses.

The following entities have received copies of the EISPN/EA or notifications of the availability of the EISPN/EA and are formally invited to participate in the EIS process:

*Federal*

U.S. Army Garrison, Hawai‘i  
U.S. Army Installation Management Command, Pacific Region  
U.S. Army, Pohakuloa Training Area  
U.S. Army Corps of Engineers, Honolulu District  
U.S. Department of Agriculture, Natural Resources Conservation Service  
U.S. Department of the Interior, Fish and Wildlife Service  
U.S. Department of the Interior, Geological Survey, Biological Resources Division  
U.S. Environmental Protection Agency  
U.S. Geological Survey, Hawaiian Volcano Observatory  
U.S. Representative Mazie Hirono and U.S. Senators Daniel Inouye and Daniel Akaka

State

Department of Accounting and General Services  
Department of Agriculture  
Department of Business, Economic Development, and Tourism  
Department of Defense  
Department of Health  
Department of Land and Natural Resources, Land Division  
Department of Land and Natural Resources, Forestry and Wildlife  
Department of Land and Natural Resources, State Historic Preservation  
Office of Planning  
Office of Hawaiian Affairs  
Office of the Governor, West Hawai‘i Liaison  
State Representative Cindy Evans and State Senator Josh Green, M.D.  
University of Hawai‘i at Manoa, Water Resources Research Center  
University of Hawai‘i at Manoa, Environmental Center

County

Civil Defense Agency  
County Council Chair Dominic Yagong and Councilmember Pete Hoffman  
Department of Environmental Management  
Department of Finance  
Department of Parks & Recreation  
Department of Public Works  
Department of Water Supply  
Fire Department  
Mass Transit Agency  
Mayor William P. Kenoi  
Planning Department  
Police Department

Organizations

Association of Hawaiian Civic Clubs  
AT&T Wireless Services of HI LLC  
Big Island Bird Hunters Association  
BIVWR Investment LLC  
Cave Conservancy of Hawai‘i  
E Mau Na Ala Hele  
Hawai‘i Electric Light Company  
Hawai‘i Island Chamber of Commerce  
Hawai‘i Island Contractors Association  
Hawai‘i Leeward Planning Conference

Hawaiian Telcom  
Historic Hawai‘i Foundation  
Hui Malama I Na Kupuna O Hawai‘i Nei  
Kohala Coast Resort Association  
Kona-Kohala Chamber of Commerce  
Malu ‘Aina Center for Non-Violent Education & Action  
Parker Ranch  
Puako Community Association  
Sierra Club, Moku Loa Group  
South Kohala Community Development Plan Action Committee  
South Kohala Traffic Safety Committee  
Waiki‘i Ranch  
Waiki‘i Ranch Homeowners Association  
Waikoloa Dry Forest Preserve  
Waikoloa Mauka LLC  
Waikoloa Village Association  
Waikoloa Village Outdoor Circle  
Waimea Community Association  
Waimea Hawaiian Homesteaders Association  
West Hawai‘i Shooting Range Steering Committee  
WQJ2008 Investment LLC

The above list is a preliminary identification of parties with interests at stake or who may have pertinent information about the area and the proposed project. HDOT and FHWA welcome and appreciate any assistance in identifying others who have special information or might be adversely affected by the proposed project, and who should therefore be consulted in the process of preparing the EIS.

The EISPN/EA has also been made available at the Kailua-Kona, Hilo, and Thelma Parker (Waimea) Public Libraries and was sent to the *Hawai‘i Tribune Herald*, *West Hawai‘i Today*, and the *Honolulu Star-Advertiser*.

## **PART 2: ENVIRONMENTAL SETTING AND POTENTIAL ISSUES**

The project area is a roughly ten-mile long corridor, which ranges in elevation from about 100 feet to more than 2,600 feet above sea level, between Queen Ka‘ahumanu Highway and Māmalahoa Highway near the district boundaries of North Kona and South Kohala (see Figures 1-1 and 1-2, above). The average slope from Queen Ka‘ahumanu Highway to Māmalahoa Highway is approximately 4.7 percent. The project corridor is roughly bounded by land on or near Waikoloa Road on the north, the Pu‘uanahulu Game Management Area on the south, the Ke‘āmuku portion of Pohakuloa Training Area on the east, and the Waikoloa Resort area on the west. The eastern quarter is lightly grazed, a small portion of one alternative traverses a hunting area, and quarrying takes place in the western end, but there are few active land uses or roads, and no structures.

## 2.1 Physical Environment

### 2.1.1 Climate and Air Quality

The elevational range of over 2,500 feet spans several climates. The average annual rainfall area varies from 10 inches at low elevations to about 20 inches at Māmalahoa Highway (Giambelluca et al 2011). Near the coast the average daily high is about 82 degrees F. and the low is about 72 degrees. Temperatures in the higher elevations are 4 to 7 degrees cooler. Temperatures show definite but moderate seasonal variability. Northeast trades often blow at speeds exceeding 25 miles per hour, with slower speed upslope winds also occurring.

Although the State of Hawai‘i operates a network of air quality monitoring stations around the state, systematic data are not available for South Kohala. It is generally accepted that all criteria pollutants in the State are well within standards, at least on a regional basis. The adequate air quality for pollutants other than particulates is mainly influenced by the isolation of the island from any outside sources of air pollution. However, the Hawai‘i carbon monoxide criteria, which are more stringent than the federal standards, may be exceeded on occasion near high-volume intersections during periods when traffic congestion and poor dispersion conditions coincide.

Volcanic emissions of sulfur dioxide (SO<sub>2</sub>) from Kilauea Volcano convert into particulate sulfate, forming a volcanic haze, locally called vog. Vog becomes trapped in the atmosphere of Kona (to the south of the project area) because of the diurnal wind reversal, which creates a largely closed airshed system. South Kohala receives small quantities of vog from winds blowing north from Kona, although in general it is kept away by dominant trade winds. Air quality is generally excellent, as combustion-derived air pollution in the entire State of Hawai‘i is minimal.

In addition, major manmade air pollution sources on the island of Hawai‘i include oil-fired power plants, which emit SO<sub>2</sub>, nitrogen oxides (NO<sub>x</sub>), and particulate matter (PM), as well as motor vehicles, which emit carbon monoxide (CO), NO<sub>x</sub>, and hydrocarbons (an ozone precursor), plus small amounts of other pollutants.

*Potential Issues.* The Draft EIS will address the following potential issues:

- Construction impacts. The Draft EIS will address development of an effective dust control plan to avoid or mitigate impacts. The plan may include watering of active work areas, wind screens, covering of open-bodied trucks carrying soil or rock, and other elements.
- Long term regional and microscale impacts from motor vehicle emissions from project-related traffic. The Draft EIS will discuss air quality impacts from motor vehicles, including Mobile Source Air Toxics (MSATs). This subset of the 188 air toxics defined

by the Clean Air Act involves compounds emitted from highway vehicles and non-road equipment.

### 2.1.2 Topography and Soils

West Hawai'i is the product of Pleistocene and Holocene lava flows and pyroclastic deposits from four volcanos: Kohala, Mauna Kea, Mauna Loa, and Hualālai. Within the project area, the southern portion consists mostly of 'a'a (clinkery) and pāhoehoe (smooth or ropy) lava from eruptions of Mauna Loa. The northern portion is mostly Mauna Kea lava flows of various ages, in places discontinuously mantled by pyroclastic, windblown or colluvial deposits. A few scoria cones from Mauna Kea are also present, as well as some Hualālai lavas not completely covered by later Mauna Loa flows.

The topography is moderately sloped and irregularly rolling, typical of lava flows. A number of cinder cones of moderate height (mostly less than 100 feet) punctuate this surface. Lava tubes, which are the long cavities left behind by underground channels of lava, are common on pāhoehoe lava flows in the area. Lava tubes may be valuable for scientific, recreational, archaeological, biological and other purposes.

Soil types within the project area consist of pāhoehoe lava flows (rLW), 'a'a lava flows (rLV), Puu Pa, Punaluu, Kamakoa, and Waikoloa soils (Sato et al 1973):

- Puu Pa soils (PVD, PWD) consist of well-drained extremely stony very fine sandy loams that form in volcanic ash. They are located on the uplands at elevations ranging from 1,000 feet to 2,500 feet in elevation. Normal rainfall in these areas is from 20 to 30 inches annually. This soil series is underlain by fragmental 'a'a lava. Permeability is moderately rapid, runoff is medium and the erosion hazard is moderate.
- Punaluu soils (rPYD) consist of well-drained, thin organic soils over pāhoehoe lava bedrock. These soils lay in elevations ranging from gentle slopes to moderately steep areas. The soils are at an elevation ranging from near sea level to 1,000 feet and receive from 60 to 90 inches of rainfall annually. They are underlain by pāhoehoe lava bedrock. The peat is rapidly permeable. The pāhoehoe lava is very slowly permeable, but water moves through the cracks. Runoff is slow, and the erosion hazard is slight.
- Kamakoa soils (KGC) consist of somewhat well-drained very fine sandy loams that form in recent alluvium. These soils range in elevation from 1,000 feet to 4,000 feet and receive 20 to 40 inches of rainfall annually. They occur as long, narrow areas along shallow, intermittent streams. The soils are underlain by alternate layers of fine, medium, and coarse sand and gravel. These soils and Puu Pa and Waikoloa soils are in the same general area. Permeability is rapid, runoff is slow, and the erosion hazard is slight.
- Waikoloa soils (WLC) consist of well-drained very fine sandy loams that formed in volcanic ash. These soils are gently sloping to moderately sloping. These soils are on upland at elevations ranging from 1,500 to 4,000 feet and receive 20 to 30 inches of rainfall annually. The soils appear as a dark reddish-brown very fine sandy loam. Permeability is moderate, runoff is medium, and the erosion hazard is moderate.



*Potential Issues.* The Draft EIS will include best management practices to control soil erosion during construction. The Draft EIS will also map lava tube caves and skylights, and evaluate avoidance and mitigation measures. Operational (post-construction) impacts and mitigation measures are discussed in Section 2.1.4.

### **2.1.3 Geologic Hazards**

The Waikoloa area is rated Lava Flow Hazard Zone 8 on a scale of ascending risk 9 to 1. Zone 8 areas have had only a few percent of their surfaces covered by lava within the past 10,000 years.

South of Waikoloa, but still within the project area, are Mauna Loa surfaces classified as Zone 3 Hazard Zones. During the past 750 years, lava flows have covered about 15 to 20 percent of Zone 3 on Mauna Loa. As such, there is variable risk of lava inundation in the project area over relatively short time scales (Heliker 1990). In terms of seismic risk, the entire Island of Hawai‘i is rated Zone 4 Seismic Hazard (Uniform Building Code, Appendix Chapter 25, Section 2518). Zone 4 areas are at risk from major earthquake damage, especially to structures that are poorly designed or built, as the 6.7-magnitude (Richter) quake of October 15, 2006, demonstrated. It should be noted that ground shaking during a strong earthquake may vary substantially within a small area because of the nature of the substrate.

*Potential Issues.* The Draft EIS will discuss the probability of lava flows within the studied alternative alignments and conformance of the highway design to seismic standards.

### **2.1.4 Water Resources and Drainage**

There are no wetlands, special aquatic sites or perennial streams within the project area. There are several intermittent streams in the uplands that appear to drain into confined basins and cease to channelize. The lower area contains several lava flow channels that have been incorrectly mapped on topographic maps as streams.

Several drinking water wells are present in the Waikoloa area, although none are present in any of the currently planned alternative alignments. No Principal or Sole Source Aquifers designated under Section 1424(e) of the Safe Drinking Water Act are present on the Island of Hawai‘i.

Flood Insurance Rate Maps (FIRM) have not been prepared for any locations within the project area, which is thus located entirely within Zone X, areas not known to be within the 500-year flood plain. Local ephemeral drainages may overflow after very heavy rains.

*Potential Issues.* Highway projects have the potential, if not mitigated, to adversely affect existing natural and man-made drainage systems. Highways also increase the proportion of impervious surface in an area, adding to total runoff, which may necessitate additional drainage facilities. Potential impacts to water quality in streams and other water bodies can also result from highway construction and operation. Sources include soil erosion during construction and highway utilization; contaminants associated with heavy equipment and other sources during

construction; chemical pollutants during utilization of highway, including hydrocarbons (gas, grease, oil, etc.) and heavy metals; solids from tire and pavement wear, brake shoe and drum wear, rust, car exhaust, mud and dirt from vehicle bodies, erosion from highway right of way, pavement maintenance, litter, and spilled loads; and herbicides applied along highway verges.

The Draft EIS will:

- Report the determination by the U.S. Army Corps of Engineers as to whether waters of the U.S. are present and will be affected by any advanced alternative. If so, the EIS will provide a discussion of impacts, alternatives, and mitigation related to waters of the U.S. in the context of Section 404 of the Clean Water Act. Any fill in waters of the U.S. could require a Section 404 Permit for Dredge and Fill in the Waters of the U.S. from the U.S. Army Corps of Engineers and a Section 401 Water Quality Certification from the Department of Health. If streams are present, a Stream Channel Alteration Permit may also be required from the Department of Land and Natural Resources (DLNR).
- Assess the extent of runoff from the increased area of impervious paved surfaces and discuss the drainage improvements that will be required in order to ensure that there are no adverse impacts and that all highway runoff is handled appropriately.
- Discuss best management practices to minimize erosion and polluted runoff that are expected to be implemented as part of a Stormwater Pollution Prevention Plan, in keeping with the requirements of the National Pollutant Discharge Elimination System (NPDES) permit that will be sought prior to initiating major grading activities.
- Discuss development of “Good Housekeeping” and Spill Prevention plans for emergency spill treatment, storage, and disposal of all hazardous materials, both within construction limits and at staging areas, in accordance with the most recent version of FHWA’s Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, Federal Acquisition Regulations, and appropriate EPA regulations.
- Evaluate and propose mitigation for secondary impacts to water quality as applicable.
- Discuss the characteristics and quality of existing aquifers and assess impacts, proposing mitigation if appropriate.

### 2.1.5 Biological Resources

The natural vegetation of the project area is made up of various Lowland Dry communities including forests, woodlands, shrublands and grasslands (Gagne and Cuddihy 1990). These original communities, however, have been destroyed or heavily degraded throughout much of the project area and the surrounding region. The current vegetation of the project area, which has been used mainly for ranching, is dominated by the drought-resistant, introduced fountain grass (*Cenchrus setaceus*) and buffel grass (*Cenchrus ciliaris*). Areas that have not been as heavily grazed may support a few sparse stands of native trees and shrubs. The Lowland Dry Forests and Lowland Dry Woodlands were once highly diverse in terms of ecosystem types and number of tree species. These ecosystems include simple 'ohi'a (*Metrosideros polymorpha*) forests, especially on younger lava flows, and more developed types including lama (*Diospyros sandwicensis*) forests and wiliwili (*Erythrina sandwicensis*) forests. Throughout Hawai'i, most of these ecosystems have been severely degraded by human activity and many of their species are now rare and/or endangered. Remnants of these three ecosystem types occur in general South Kohala/North Kona area, especially on the young lava flows. However, fountain grass has also invaded many of these less-disturbed shrub and woodland communities, becoming the dominant ground cover and promoting fire that further degrades the natural vegetation.

Few endangered or threatened plant species are known to occur within the project area. At least one halapepe (*Pleomele hawaiiensis*) and one uhiuhi (*Caesalpinia kawaiiensis*), both of which are listed endangered trees, were previously known in the area. At the present time, it is believed that no endangered or threatened plant species are present in the area that would be affected under any alignment alternative. However, the surrounding region of leeward Hawai'i contain many endangered and other rare species. These include numerous species found at higher elevations to the east in the Pohakuloa Training Area (Arnett 2002), several species to the south in the dry forests of Pu'u Wa'awa'a, Kaupulehu and further south (Terry et al 2005; Hart 2003), and a scattering of species to the north found in the Waikoloa Dry Forest Preserve and on the pu'u and other rugged sites of Parker Ranch (Cuddihy et al 1982). It is possible that some of these could occur in the project area. The botanical research performed for the Draft EIS will include special attention to surveying once again for such species.

Hawai'i's sole extant endemic terrestrial mammal, the Hawaiian Hoary Bat (*Lasiurus cinereus semotus*), or ope'ape'a, is listed as endangered by both the USFWS and the DLNR. It may forage or nest in the project area. All other mammal species found on the island are alien species (introduced to Hawai'i by man). In the project area these may include feral goats, donkeys, dogs, cats, rats, mice and mongooses.

The birds found within the project area are mostly introduced species, which is typical in most of the ecologically disturbed lowland areas of Hawai'i. It is likely that the Hawaiian Hawk (*Buteo solitarius*), known locally as the 'Io, can be observed at least occasionally within the project area. This hawk is listed as an endangered species by both the USFWS and the DLNR. Additionally it is probable that the site is overflown by the threatened Newell's Shearwater (*Puffinus newelli*), or A'o, as well as the endangered Dark-rumped Petrel (*Pterodroma*

*phaeopygia sandwichensis*), or *Ua'u*. In addition, the endangered Nene (*Nesochen sandvicensis*) has colonized the Waikoloa Village Golf Course since 2005, and may have resting habitat within the project area.

The invertebrate fauna of the project area, or for that matter of most of the Island of Hawai'i, has not been studied scientifically or completely described. In general, native invertebrate species are associated with native vegetation. However, the endangered Blackburn's Sphinx Moth (*Manduca blackburnii*) utilizes non-native host plants in the Solanaceae family, especially tree tobacco (*Nicotiana glauca*), a common alien that is present in the general area. Lava tubes may also provide habitat for certain native invertebrates, even when under alien dominated vegetation.

*Potential Issues.* The Draft EIS will include the results of botanical and faunal surveys that will focus especially on the presence of species listed as endangered, threatened, or proposed by the USFWS and/or DLNR that are likely to occur in the project area. The Draft EIS will discuss, and compare by alternative, direct impacts to specific biotic components as well as secondary and cumulative impacts, such as wildfire hazard and import of fill, and will propose minimization and mitigation measures as necessary.

## **2.2 Socioeconomic and Cultural Characteristics**

### **2.2.1 Social and Growth-Inducing Impacts**

Population on the Big Island doubled from about 92,000 in 1980 to over 185,000 in 2010 (Hawai'i DBEDT 2010). Although East Hawai'i still has most of the island's residents, much growth over the last 15 years has been concentrated in West Hawai'i, where most tourist resorts and hotels are located. On any given day, visitors account for over 5 percent of the de facto population – and most are in West Hawai'i.

Kona's largest population center, and the area most directly affected by increased traffic and economic opportunity associated with the Saddle Road, is found in Kailua-Kona (2010 pop. 11,975) (see Figure 1-1). The settlement nearest the project area in North Kona is Pu'uanahulu, located on Māmalahoa Highway. In South Kohala, Waimea (pop. 9,212) and Waikoloa (pop. 6,362) are the largest towns. Waiki'i (est. pop. 50) is located directly adjacent to Saddle Road just east of the project area. There are no homes within several miles of any of the alternative corridors except at the far western end, where resort homes are present within 1,500 feet, but located across Queen Ka'ahumanu Highway.

*Potential Issues.* New or improved transportation systems or highways can increase population because new or better access creates development opportunities, and more indirectly through increased tourism jobs or other factors that expand the economy. Various social effects often ensue, such as population increases. Analysis of the direct and indirect effects of the project alternatives will be undertaken in the EIS. The Draft EIS will identify the location of minority

and low-income populations and analyze project effects on them in accordance with the federal requirements relating to environmental justice.

### 2.2.2 Economic

Starting in the late 1990s, the economy of the Big Island emerged from a slump that began with the Persian Gulf War of 1991, when tourism fell off dramatically and sugar plantations closed. This was temporarily interrupted by the terrorist attacks of September 11, 2001, along with the Afghanistan and Iraq wars that followed. After 2003, the economy again grew strongly until 2007, fueled by proliferation of luxury resort residential subdivisions and the rise of real estate values. The State of Hawai‘i appears to be in the early stages of emerging from the worldwide recession that was caused by the mortgage and real estate problems that began in 2008, although unemployment on the Big Island remains stubbornly high.

Economic diversification in West Hawai‘i is evidenced by technology industries centered around the Natural Energy Laboratory Hawai‘i and astronomical base facilities in Waimea, diversified agriculture, and various services industries. East Hawai‘i’s economy is centered on agriculture, retail and wholesale businesses, services, and particularly the government and educational functions headquartered in Hilo. In addition, hundreds of workers commute in private vehicles or buses to the resort areas of South Kohala for jobs, and traffic involving sales and services between East and West Hawai‘i continues to grow. Increasingly congested conditions on SR 19 through Honokaa and Waimea, exacerbated by steady growth in Waimea and maintenance work on the highway, have led many motorists to use the Saddle Road more frequently.

*Potential Issues.* Construction of the project would create jobs and increase purchases of materials and equipment, raising incomes and generating revenues to the State of Hawai‘i and the federal government through income and excise taxes. Large construction projects, in some cases, may lead to in-migration of workers. Direct construction jobs typically consist of on-site laborers, tradesmen, equipment operators, supervisors, etc. Jobs associated with the design and construction management work typically consist of surveyors, geologists, engineers, inspectors, and administrative staff. It is likely that most project-related jobs would be filled by residents from the island of Hawai‘i already employed within the engineering and construction fields. Through potential increases in population, the project also has the potential to generate various other State and County expenditures and revenues. Tertiary effects include potentially increased or decreased labor availability, and changes for highway-based businesses. The Draft EIS will evaluate whether the construction and operation of the Saddle Road Extension project would have adverse impacts on local employment, housing and highway-based businesses in Waikoloa and Waimea.

### 2.2.3 Historic and Cultural Resources

The project area extends through various elevational and environmental zones. Within most of the area in the upper elevations, expected archaeological features would include *mauka/makai* trails, temporary habitations, and post-Contact features such as walls and cattle related

structures. Less likely are utilized lava tubes, shrines, burials, or resource exploitation areas (such as rock quarries).

At lower elevations near Queen Ka‘ahumanu Highway, the frequency of pre-Contact sites may be expected to increase. Abrader depression and scoria quarry areas might also occur. An archaeological preserve has been proposed near the quarry on Waikoloa Road in order to protect a cluster of already documented sites. The Draft EIS will discuss the relationship of the project to the archaeological sites and will propose measures to avoid or mitigate impacts.

Various parts of inland North Kona and South Kohala are known to have value and meaning for traditional, ceremonial, and gathering purposes. A Traditional Cultural Property, as defined by National Register Bulletin 38 (National Park Service, 1990), is any historic property associated with the traditional practices and beliefs of an ethnic community or members of that community for more than fifty years. Traditional Cultural Properties may not be archaeologically visible. Discovery of such places often relies on archival research and interviews with knowledgeable residents and cultural practitioners. Cultural practices that should be properly assessed may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs (Hawai‘i State OEQC, 1997).

*Potential Issues.* The Draft EIS will document compliance with federal requirements set forth in Section 106 of the National Historic Preservation Act and Section 4(f) of the U.S. DOT Act, as well as State requirements set forth in Hawai‘i Revised Statutes Chapter 6E. In identifying cultural issues and impacts, the Draft EIS will include a Cultural Impact Assessment consistent with Chapter 343, HRS, and OEQC’s Guidelines for Assessing Cultural Impacts (November 1997). This EISPN/EA is one of a number of outreach techniques for identifying such people and encouraging their involvement. The archaeological and cultural investigations that will be performed for the Draft EIS will include intensive surveys of all affected areas, investigation of records, and discussions with appropriate experts, residents and practitioners.

#### **2.2.4 Noise**

Noise-sensitive receptors in the project area are limited to the urban uses contained within Waikoloa Village, which is a minimum of two miles from any currently proposed alternative alignments, and the far western end, where resort homes are present within 1,500 feet, but across Queen Ka‘ahumanu Highway.

*Potential Issues.* An analysis of noise impacts in accordance with FHWA and HDOT policy will be conducted if any alternatives directly or indirectly have the potential to increase noise levels in these areas. Noise during construction will be mitigated through compliance with the Department of Health Community Noise Control Rules which define maximum permissible noise levels for construction equipment and prescribe mitigation measures to achieve these levels.

### 2.2.5 Scenic Resources

The County of Hawai‘i General Plan identifies sites and vistas of natural beauty. In general, the scenic values here are derived from the wide vistas of volcanoes, grasslands, and coastal waters, and the high contrast between the moist uplands and arid lowlands, and between the stark lava flows and the windswept grasslands. In particular, the General Plan identifies the viewplane looking *mauka* and *makai* from the Queen Ka‘ahumanu Highway. There are two prominent cinder cones within the project area: Pu‘u Hinai and Pu‘u Anahulu.

*Potential Issues.* The Draft EIS will include an evaluation of the scenic impacts of the project, including the opportunities to provide new scenic vistas and the impacts on *pu‘u* (cinder cones) within the project area.

### 2.2.6 Recreational Resources

Although there are no public parks within the project area, the State Pu‘uanahulu hunting area is at the far south of the project area and is crossed by a short extent of one of the three alternative alignments identified to date. Recreational areas along the coast outside the project area are prime trip destinations that will generate traffic along the proposed corridor. These coastal recreational resources include: Spencer Beach Park (County park), Kauna‘oa (Mauna Kea Resort) Beach (public access, privately maintained), Hāpuna Beach Park (State park), and ‘Anaeho‘omalua Bay (public access, privately maintained). The State is also developing a State Park at Kīholo Bay. Of critical importance is a public shooting range in Pu‘uanahulu near the West Hawai‘i Sanitary Landfill that is being planned by the State Division of Forestry and Wildlife, with County cooperation and potential federal hunter education match-funding.

*Potential Issues.* The Draft EIS will analyze the impacts on hunting areas. The Draft EIS will also analyze any direct or indirect impacts on parks and other recreational resources, including the future shooting range, in accordance with the federal Section 4(f) of the U.S. DOT Act requirements.

### 2.2.7 Hazardous Substances/Conditions

No sources of industrial hazardous materials or toxic substances are currently known to be present in the project area, which has been lightly used for grazing over the last century. The distribution of such materials or substances on or flanking the existing highways is currently unknown. However, military training activities have left several types of hazards in the general region.

Much of South Kohala is known to contain unexploded ordnance that resulted from training during World War II. The U.S. Navy utilized 91,000 acres in Waikoloa in December of 1943 for an artillery firing range and troop maneuvers. Property comprising the Waikoloa Maneuver Area was surrendered back to Parker Ranch in September 1946. At least two ordnance clearing efforts were conducted, one in 1946 just prior to the departure of the 5th Marine Division, and

the other in 1954 following accidental detonation of a dud fuse or shell killing two civilians and seriously injuring three others. Ordnance and explosives (OE) continue to be discovered at the former Waikoloa Maneuver Area as land development progresses.

In order to address this problem, the U.S. Army Engineering and Support Center, Huntsville, and the U.S. Army Corps of Engineers, Honolulu District, teamed to produce a Phase II Engineering Evaluation/Cost Analysis for the Former Waikoloa Maneuver Area and Nansay Sites, Island of Hawai‘i, Hawai‘i (U.S. Army Corps of Engineers, 2002). The report documented the decision process to determine the most appropriate OE response actions for the former Waikoloa Maneuver Area and Nansay Sites. The project has been expanded from 123,000 acres to 135,000 acres in recognition of concern over OE between Queen Ka‘ahumanu Highway and the sea, where resorts continue to develop. A program of OE removal was developed and is currently being implemented. The U.S. Army Corps of Engineers has overseen completion of ordnance clearing on several thousand acres. There have been no reported discoveries of OE within the actual project area (U.S. Army COE, 2002: 2-18).

*Potential Issues.* The Draft EIS will include evaluation of the potential for the presence of hazardous material and toxic substances in the project area. The Draft EIS will also discuss the issue of OE and the appropriate procedures to respond to this situation prior to and during construction.

### **2.2.8 Agricultural Value of Land**

Of the three categories of valuable agricultural land identified in Hawai‘i through the *Agricultural Lands of Importance to the State of Hawaii* (ALISH) map series (Baker 1976), Ke‘āmuku contains some Other Important Agricultural Lands but no Prime or Unique Agricultural Lands. Other Important Agricultural Lands are those lands of statewide or local importance for agricultural use, other than those classified as Prime or Unique. They make up roughly 18 percent of the county’s land area.

*Potential Issues:* The Draft EIS will evaluate the agricultural value of the land through map data, including soil types, ALISH, and Land Study Bureau, and also through consultation with federal, State, and local agricultural officials and organizations.

## **2.3 Public Facilities, Utilities, and Services**

### **2.3.1 Highways, Roads and Traffic**

Existing facilities in the project area include Saddle Road (SR 200), Māmalahoa Highway (SR 190), Waikoloa Road (a County facility), and Queen Ka‘ahumanu Highway (SR 19). Inter-regional traffic has increased and reoriented with greater use of Saddle Road.

*Potential Issues:* The Draft EIS will discuss the results of a Traffic Impact Analysis Report (TIAR) that will assess traffic conditions that would result from implementation of the project



using each of the three alternatives conceptualized to date, or any other alternatives that might be advanced for study, and the No Action Alternative. Appropriate intersection configurations, issues related to access for private properties, and mitigation measures will also be identified. The Draft EIS will include analysis of secondary and cumulative impacts relative to traffic redistribution, along with a discussion of the status of the various regional highway projects and the potential interaction they would have with the Saddle Road Extension.

### **2.3.2 Water Supply and Electric Utilities**

Electrical power on the island of Hawai‘i is supplied by Hawai‘i Electric Light Company (HELCO), a privately owned utility company regulated by the State Public Utilities Commission. Hawaiian Telcom and Sandwich Isles Communications, Inc., provide telephone and telecommunications services. There is no County water supply in the project area, but private water companies serve Waikoloa Village.

*Potential Issues.* Since there are no electrical and water utilities along the proposed right-of-way, no streetlights or landscaping is planned for the project. There is a possibility that the eastern and western termini intersections at Queen Ka‘ahumanu Highway and Māmalahoa Highway will require electrical utility, and currently there are existing utility lines in these areas. The Draft EIS will identify the proposed highway’s effects on utilities, including utility relocation or system expansion, and propose mitigation measures if appropriate.

### **2.3.3 Solid Waste**

Solid waste generated in West Hawai‘i is disposed of at the West Hawai‘i Sanitary Landfill, a 300-acre facility that is situated directly south of the project area in Pu‘uanahulu, North Kona. This landfill is expected to be able to serve the County’s needs well into the future. The County Department of Environmental Management is planning substantial recycling facility enhancement over the next five years that will include facilities to deal with green waste and a variety of other materials.

*Potential Issues.* Highway construction would involve excavation, filling and grading. Engineers attempt to balance cut and fill to the extent feasible so that minimal fill material will require disposal. Highway construction also generates solid waste in the form of packaging for building materials, detergents, paint, metals, and solvents, as well as demolition of existing materials at intersections, etc. The Draft EIS will assess the nature of the waste that will be generated by construction of the proposed highway and will propose “Good Housekeeping” plans that minimize generation of solid waste, emphasize full use of materials and recycling, and specify proper disposal of all solid waste.

### 2.3.4 Emergency Services

Highway accidents, wildfires, and medical and police emergencies within Waikoloa Village are among the emergency situations within the project area that currently rely on Waikoloa Road for access.

*Potential Issues.* The Draft EIS will analyze the benefits to emergency response for police, fire, and medical purposes, as well as the increased areas of responsibility and risk of wildfires.

### 2.4 Secondary and Cumulative Impacts

Cumulative impacts may be defined as impacts on the environment which result 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 the action (Council on Environmental Quality [CEQ] 1997:v).

The Draft EIS will contain a list of other projects – development, transportation, recreation and others – and an analysis of how the impacts of the proposed Saddle Road Extension relate to the cumulative impacts of the other projects.

Transportation projects sometimes have the potential to induce secondary physical and social impacts that are only indirectly related to the particular project. The Draft EIS will address secondary impacts within each individual resource area under discussion, and then present a summary of these impacts and proposed mitigation measures.

### 2.5 Consistency With Government Plans and Policies

The Draft EIS will contain a discussion of the consistency of the project with a number of County and State plans and policies. Among those discussed will be:

*The Hawai‘i State Plan.* Adopted in 1978 and last revised in 1991 (Hawai‘i Revised Statutes, Chapter 226, as amended), the Plan establishes a set of themes, goals, objectives and policies that are meant to guide the State’s long-run growth and development activities. The three themes that express the basic purpose of the *Hawai‘i State Plan* are individual and family self-sufficiency, social and economic mobility, and community or social well-being.

*Hawai‘i State Functional Plans.* The *Hawai‘i State Plan* provides for the preparation of Functional Plans by the State agencies responsible for certain program areas. There are twelve Functional Plans dealing with specific areas of concern, and each contains objectives, policies, and implementing actions necessary to accomplish the goals of the plan. State Functional Plans cover the program areas of agriculture, transportation, conservation lands, housing, tourism, historic preservation, energy, recreation, education, health, human services and employment. Applicable Functional Plans will be discussed.

*Hawai'i State Land Use Law.* All land in the State of Hawai'i is classified into one of four land use categories – Urban, Rural, Agricultural, or Conservation – by the State Land Use Commission, pursuant to Chapter 205, HRS. Highways are permissible uses in all State Land Use Districts. The Draft EIS will include a map depicting State Land Use Districts in the project area.

*Coastal Zone Management.* The purpose of Chapter 205A, HRS, is to preserve, protect, develop and where possible, enhance the resources of the coastal zone. The Draft EIS will address the conformity of the project with the relevant sections of Chapter 205A, HRS.

*Hawai'i County General Plan.* The *General Plan* for the County of Hawai'i is a policy document expressing the broad goals and policies for the long-range development of the Island of Hawai'i. The plan was adopted by ordinance in 2005. The *General Plan* itself is organized into thirteen elements, with policies, objectives, standards, and principles for each. There are also discussions of the specific applicability of each element to the nine judicial districts comprising the County of Hawai'i. Section 4 of the *General Plan* includes a discussion of general goals. In Section 5, courses of action for individual districts are proposed, and the Land Use Pattern Allocation Guide (LUPAG) map component guides development of various areas. The Draft EIS will address the goals, objectives, standards, and courses of action in the General Plan. It will also discuss the South Kohala Community Development Plan, which was developed under the framework of the General Plan. Community Development Plans are intended to translate broad General Plan Goals, Policies, and Standards into implementation actions as they apply to specific geographical regions around the County. CDPs are also intended to serve as a forum for community input into land-use, delivery of government services and any other matters relating to the planning area.

*West Hawai'i Regional Plan.* This plan (Hawai'i OSP, 1989) represents an attempt to coordinate planning efforts among State agencies that have programs, facilities and other interests in the region. The basic purposes are to respond more effectively to emerging needs and critical problems, to coordinate Capital Improvements within a regional planning framework, and to provide guidance in State land use decision-making processes. The Draft EIS will discuss the proposed action in the context of the entire plan.

## **2.6 Required Permits and Approvals**

The following permits and approvals are known at this time to be required or potentially required:

- U.S. Army Corps of Engineers: Section 404 Clean Water Act Permit (potential)
- U.S. Fish and Wildlife Service: Section 7 Endangered Species Act Concurrence
- State Department of Land and Natural Resources (DLNR), Historic Preservation Division: Chapter 6e HRS and Section 106 National Historic Preservation Act Concurrence
- State DLNR: Stream Channel Alteration Permit (potential)

- State Department of Transportation: State Highways Permit
- State Department of Health (DOH): Section 404 Water Quality Certification (potential)
- State DOH: National Pollutant Discharge Elimination System (NPDES)
- State Coastal Zone Management (CZM) Program: CZM Federal Consistency
- County Planning Department: Subdivision Approval
- County Dept. of Public Works: Grading, Grubbing, Excavating and Stockpiling Permits

During the preparation of the Draft EIS, coordination with various government agencies to research permit requirements will occur. A full list of permits necessary for the various stages of the project will then be provided.

### **PART 3. DETERMINATION**

The State Department of Transportation has determined that the project may cause significant impacts and therefore has decided to prepare an Environmental Impact Statement.

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