

**DRAFT ENVIRONMENTAL ASSESSMENT
FOR THE
LAKO STREET EXTENSION PROJECT
Holualoa 3 & 4, North Kona, HI**

SUMMARY

The Lako Street Extension project is part of a long range plan to provide a road network system to distribute and ease traffic in the Kailua to Keauhou sector. The proposed road, 1,855 feet long, will provide another access route from the coastal Alii Drive to Kuakini Highway. The proposed roadway will ease traffic on Royal Poinciana Drive; provide easy access to Alii Drive from Komohana Kai Subdivision; and provide another escape route for the residents along the Alii Drive shoreline in the event of high waves or the threat of *tsunami*.

The general area of the project site is replete with archaeological features. The Keolonahihi State Historical Park, a site on the National Register of Historical Places, is situated in the general area of the project. Above Kamo Point, and in proximity to the road project, is a significant historical area. Ancient history has '*Umi a Liloa*, a ruler said to have unified the island, as having moved the royal court from Waipio Valley to the Kona district. This lasted through the reign of *Kamehameha I*. Within this area is the *Keakealaniwahine* complex, a chiefess who was a descendant of '*Umi*. The complex has been designated as an extension to the Keolonahihi State Historical Park.

The proposed roadway is designed to avoid the 16-acre site that contains the *Keakealaniwahine* complex on Holualoa 4. The proposed roadway will affect a few archaeological remains on Holualoa 3; however, mitigation measures will include data recovery.

The roadway is expected to cost \$2,000,000, more or less; bids for construction will be advertised in the fall of year 2002.

PROPOSING AGENCY AND ACCEPTING AUTHORITY

APPLICANT FOR THE PROJECT:

The applicant for this project, Lako Street Extension, is the Department of Public Works, County of Hawaii. The address is:

Department Public Works
County of Hawaii
25 Aupuni Street, Room 202
Hilo, Hawaii 96720

The person responsible for this project is:

Mr. Dennis Lee, P.E.
Director
Department of Public Works
County of Hawaii
25 Aupuni Street, Room 202
Hilo, Hawaii 96720

APPROVING AUTHORITY:

The approving authority is the Mayor of the County of Hawaii. His address is:

Mayor Harry Kim
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

SUMMARY DESCRIPTION OF AFFECTED ENVIRONMENT

General Description:

The proposed Lako Street Extension project is located in the North Kona district, Island and County of Hawaii. North Kona is one of the nine districts comprising the County of Hawaii. The County has a land area of 4,028 square miles, and is often referred to as the Big Island, with the North Kona district having 489 square miles.

The upland skyline of North Kona is dominated by two mountains - Hualalai (elevation 8,271 feet) and the towering Mauna Loa (13,677 feet). Hualalai lava flows have been recorded in historic times; its last eruption was in 1800-1801. Mauna Loa is considered an active volcano as it erupted last in 1984. Being on an island of volcanic origin, there is the potential threat of new eruptions on the island. When such eruptions will occur, where they will occur and which direction the resulting lava flows will take is a matter of conjecture. This is generally accepted as a way of life on the Big Island, concomitant with living on a volcanic island.

The Komohana Kai subdivision is about 3.2 miles from Kailua Village traveling on Kuakini Highway. The project site is 3.0 miles from Kailua Village as measured along Alii Drive and 2.8 miles from Kamehameha III Road above Keauhou Bay.

Immediately below the project area on the oceanside of Alii Drive is a historic site on Kamo Point. It was in 1980, due to mounting public pressure, that this parcel was purchased by the State in order to prevent urban development on this site that possessed archaeological remains of significant cultural value. The Kamo Point site was given the name Keolonahihi State Historical Park, named after a high Chiefess. Some work has been

done to the park, mostly selective clearing. The historical park potential is still to be realized. A Final Environmental Impact Statement, dated October 1995, was prepared by the State Division of State Parks. In 1998, an additional 16 acres in Holualoa were donated to the State by its owner as an addition to the Keolonahihi State Historical Park. This addition includes the Keakealaniwahine complex and lies above the Keolonahihi State Historic Park.

The discussion during hearings related to the potential urban development of the Kamoia Point parcel resulted in a mass of historical data attesting to the ancient cultural history of this general area. Early legends suggest the use of this site earlier than the 15th century. Another way to view this site in a historical perspective is to understand that this Holualoa area was frequented by the chief who first unified the island of Hawaii, 'Umi a Liloa. About this time, half a world away, in the year 1620, the pilgrims in England prepared to set sail for Massachusetts to establish a colony in North America. Two hundred years later, their descendants would land in Kailua-Kona to carry out their missionary work.

Climate:

The prevailing tradewinds from the northeast occur about 70% of the time over the Hawaiian archipelago. The rest of the wind pattern is estimated to be equally distributed from the northwest, southeast and southwest. However, due to the mountains of Hualalai, Mauna Loa and Mauna Kea this is tempered somewhat and breezes are gentle (light and variable) rather than brisk in the Kona districts. This condition exists off southwest Hawaii for about 40 miles out. Windless days with hot and humid weather is often referred to as Kona weather. During this uncomfortable period what little breeze there is come from the leeward or "Kona"

side for which it is named.

Fauna Survey:

The field survey and past records of bird counts conclude that introduced species are most likely to be found in this area. Birds such the common mynah, sparrows, cardinals, finches, egrets, doves and others may be sighted in this area over a span of time. The *kiawe* trees can be nesting sites for some of these avian species.

Native birds that may occasionally fly over this area include the Hawaiian Hawk ('Io), Hawaiian Owl (Pueo), Pacific Golden Plover (Kolea), and Ruddy Turnstone (Akeake).

Ground mammals that may probably be found in this general area are all introduced species. These include the mongoose, rat, house mouse, cat, dog, and pig. Cattle once grazed in this general area. The rare Hawaiian Bat may also fly over this area in its nocturnal search for food.

A complete listing of the fauna that may be found or occasionally sighted in this area can be found in **APPENDIX A: FAUNA SURVEY.**

Botanical Survey:

The survey was conducted along the 120-foot corridors of the proposed alternate road alignment. Due to extensive use of the land for grazing of cattle, the area is highly disturbed. The dominant species were the Leucaena glauca (*Ekoa*) or *koa haole*, as it is commonly known; and the Paspalum sp. grass. Both species are forage crops for cattle. The *kiawe* tree, Prosopis chilensis; and *ekoa* shrub, Leucaena glauca; the ivy gourd vine; and the Paspalum grasses are in abundance.

Native species were not found during the survey. This is probably due to the introduction of exotic plants, such as forage crops, which have heavily overgrown the area. The use of the area for grazing undoubtedly led to further decline of native plants.

No endangered or threatened species were found. A listing of the plants to be found in the proposed road corridors is shown in **APPENDIX B: BOTANICAL SURVEY.**

Soils:

The soils of this area are lava lands whose rockiness make them generally untillable. The slopes are generally 6% to 20%; however, the area of the proposed road would have a slope of about 7%. These lands are best suited for grazing. Small areas are used as orchards. Vegetation is heavy in open untended areas. Refer to **APPENDIX B: BOTANICAL SURVEY.** The soils are permeable, runoff is slow and erosion hazard is slight. Pahoehoe outcrops can be found in this area as well as loose rocks that were used for constructing the heiau platforms, house walls, fences, sealing burial caves and the like. These lands are well below the mauka coffee lands that give Kona its reputation for top grade coffee.

Utilities:

Electric, telephone and water services are available in this urbanized area. There is no sewer service at present within the Komohana Kai Subdivision. The present County wastewater system has sewer treatment plants at Kailua Village and Keauhou. There is a 30-inch sewer main on Alii Drive that can service the proposed Alternate A roadway. A 15-inch sewer main fronts the Alternate B proposed roadway. The flow is to the Kailua Wastewater Treatment Plant. It should be noted that the project site is located below the Underground Injection Control (UIC) line.

Since this is a public works road project, no utility services are required except for the street lighting system. It is expected that temporary water connections will be made for work-related purposes such as dust suppression.

APPENDIX A FAUNA SURVEY

FAUNA SURVEY OF LAKO STREET PROPOSED EXTENTSION, KAILUA-KONA, HAWAII July 10' 2001

The observations and known sightings are composed almost entirely of introduced species of birds and mammals. It is also possible that two endemic Hawaiian creatures classified as endangered by the U. S. Fish & Wildlife Service may enter or fly over the project site. These are the Hawaiian Hawk or 10, and the Hawaiian Bat.

The site of the proposed Lako Street extension adjacent to a residential area in Kailua-Kona is primarily covered with lowland vegetation of introduced plants. At the mauka area of the proposed street extension are homesites intermingled with vacant land. The dominant lowland vegetation on and around the site is composed of introduced plants. The dominant tree is the kiawe (Prosopis pallida). The vegetation understory is made up of shrubs including haole koa (Leucaena glauca) and Christmasberry (Schinus terebinthifolius). Along the makai side of the subject property adjacent to Alii Drive are several apartments and vacation rentals with coconut palms and other planted landscaping.

Birds that would be expected to nest in the trees on the proposed site especially the kiawes are the spotted and zebra dove, mynah, house finch, Java sparrow, warbling silverbill, ricebird, red cardinal and yellow-billed cardinal. The Pacific Golden Plover in this area would make use of lawn areas for feeding.

FAUNA LIST

Birds that may be found, though rarely, or that may fly over the proposed project site are:

<u>Common Name</u>	<u>Hawaiian Name</u>	<u>Scientific Name</u>
Hawaiian Hawk	Io	<u>Buteo solitarius</u>
Hawaiian Owl	Pueo	<u>Asio flammeus sandwichensis</u>
Pacific Golden Plover	Kolea	<u>Pluvialis fulva</u>
Ruddy Turnstone	Akekeke	<u>Arenaria interpres</u>

INTRODUCED BIRDS

<u>Common Name</u>	<u>Scientific Name</u>
Barn Owl	<u>Tyto alba</u>
Black Francolin	<u>Francolinus francolinus</u>
Gray Francolin	<u>Francolinus pondicerianus</u>
Ring-Necked Pheasant	<u>Phasianus colchicus</u>
Spotted Dove	<u>Streptopelia chinensis</u>
Zebra Dove	<u>Geopelia striata</u>
Japanese White-Eye	<u>Zosterops japonicus</u>
Common Mynah	<u>Acridotheres tristis</u>
House Sparrow	<u>Passer domesticus</u>
House Finch	<u>Carpodacus mexicanus</u>
Saffron Finch	<u>Sicalis flaveola</u>
Java Sparrow	<u>Padda oryzivora</u>
Warbling Silverbill	<u>Lonchura malabarica</u>
Spotted Munia (Ricebird)	<u>Lonchura punctulata</u>
Yellow-Fronted Canary	<u>Serinus mozambicus</u>
Lavender Waxbill	<u>Estrilda caerulescens</u>
Red Cardinal	<u>Cardinalis cardinalis</u>
Yellow-Billed Cardinal	<u>Paroaria capitata</u>
Cattle Egret	<u>Bubulcus ibis</u>

MAMMALS

The Hawaiian Bat, the State's only native land mammal, is widely distributed on the Island of Hawaii. It could possibly inhabit or fly over the project site from time to time.

Other mammals that could be present are all introduced by humans. It is probable that the following list of mammals could be found at the project site:

NATIVE MAMMAL

<u>Common Name</u>	<u>Scientific Name</u>
Hawaiian Bat	<u>Lasiurus cinereus semotus</u>

INTRODUCED MAMMALS

<u>Common Name</u>	<u>Scientific Name</u>
Mongoose	<u>Herpestes auropunctatus</u>
Roof Rat	<u>Rattus rattus</u>
House Mouse	<u>Mus musculus</u>
Cat	<u>Felix catus</u>
Dog	<u>Canis familiaris</u>
Pig	<u>Sus scrofa</u>
Cattle	<u>Bos taurus</u>

APPENDIX B

BOTANIC SURVEY
LAKO STREET EXTENSION, KAILUA-KONA, HAWA'I
July 6, 2001
Conducted by Bunichi Usagawa

Section A: Lako Street to Alii Drive

	<u>Status</u>
Apocynaceae:	
<i>Catharanthus roseus</i> - Periwinkle	X
Cucurbitaceae:	
<i>Coccinea cordifolia</i> - Ivy gourd	X
Euphorbiaceae:	
<i>Breynia nivosa</i> - Snowbush	X
Gramineae:	
<i>Paspalum</i> sp. - Paspalum grass	X
Leguminosae:	
<i>Leucaena glauca</i> - Ekoa	X
<i>Prosopis pallida</i> - Kiawe	X
Malvaceae:	
<i>Sida fallax</i> - Ilima	I
Mimosoideae:	
<i>Pithecellobium dulce</i> - Opiuma	X
Palmae:	
<i>Cocos nucifera</i> - Coconut palm	P
Verbenaceae:	
<i>Lantana camara</i> - Lantana	X

Section B: Lako Street to Alii Drive

Cucurbitaceae:	
<i>Coccinea cordifolia</i> - Ivy gourd	X
Euphorbiaceae:	
<i>Breynia nivosa</i> - Snowbush	X

	<u>Status</u>
Gramineae:	
Paspalum sp. - Paspalum grass	X
Guttiferae:	
Clusia rosea - Scotch attorney	X
Labiatae:	
Leonotis nepetaefolia - Lions ear	X
Leguminosae:	
Leucaena glauca - Ekoa	X
Prosopis pallida - Kiawe	X
Malvaceae:	
Sida fallax - Ilima	I
Mimosoideae:	
Pithecellobium dulce - Opiuma	X
Verbenaceae:	
Lantana camera - Lantana	X

I did not see any rare or endangered species. Dominant species are Ekoa and paspalum grass.

References:

In Gardens of Hawaii by Marie C. Neal
Hortus Second by L.H. Bailey and Ethel Zoe Bailey
Handbook of Hawaiian Weeds by E.L. Hoselwood and G.G. Mottei

Status/Symbols of Species:

I - Indigenous, native to the Hawaiian Islands and elsewhere
P - Polynesian introduction, not native to the Hawaiian Islands
X - Introduced or alien
E - Endemic, native only to Hawaiian Islands (none found during survey)

Respectfully submitted,

Bunichi Usagawa
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