

BENJAMIN J. CAYETANO
GOVERNOR



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



KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

RECEIVED

AUG 2 2000


'00 AUG -4 A11 :42

OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

IN REPLY REFER TO:

HWY-KE 4.000719

TO: GENEVIEVE SALMONSON, DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
DEPARTMENT OF HEALTH

FROM: KAZU HAYASHIDA 
DIRECTOR OF TRANSPORTATION

SUBJECT: FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR
IMPROVEMENTS TO KAUMUALII HIGHWAY LIHUE TO WEST OF
MALUHIA ROAD, ISLAND OF KAUAI, HAWAII
PROJECT NO. 50DE-02-95

The State Department of Transportation (SDOT) has reviewed the comments received on the subject project during the 30-day public comment period that commenced on May 8, 2000. The SDOT has determined that this project will not have significant environmental effects and have issued a FONSI. Please publish this notice in the August 23, 2000 OEQC Environmental Notice.

We have enclosed a completed OEQC publication Form and four copies of the final environmental assessment. Our consultant, Parsons Brinckerhoff Quade & Douglas, Inc., will e-mail the project summary.

If you have any questions, please contact Steven Kyono, Kauai District Engineer, at 808-274-3111.

86

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000686

July 5, 2000

Mr. Robert Springer
Head of School
Island School
3-1875 Kaumualii Highway
Lihue, Hawaii 96766-9597

Dear Mr. Springer:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments, which have been numbered. We would like to provide the following response to these comments.

1. Construction of a north (mauka) leg of Nuhou Street is not part of this project. However, this project does not preclude construction of this road in the future. It should be noted that the planned Lihue-Hanamaulu bypass road would terminate in this vicinity. It is uncertain how this future road would affect your request.

We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es
Encl.

BILL KANE
P.O. BOX 511
LAWAI, KAUAI, HAWAII 96765
(808) 332-8883

June 6, 2000

State of Hawaii
Department of Transportation
Mr. Steve Kyono
3060 Eiwa Street
Lihue, Kauai, Hawaii 96766

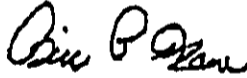
RE: Kaumualli Highway Widening

Dear Mr. Kyono:

It is about time a proposal was made to turn Kaumualli Highway into a four lane road. I am very excited to see this happen. I am in the construction industry and use this roadway quite often. The traffic in these areas at times are horrendous and the situation needs to be taken care of soon.

As our island grows with development, our roads also need to be expand to accommodate the growth. We cannot keep the present roads with all the changes we are expecting in the future. We cannot keep the present roads with all the tourism we are promoting. I support the proposed changes for Kaumualli Highway! Mahalo for allowing me to express my opinion.

Aloha,



Bill P. Kane

2000 JUN -7 P 1:15

RECEIVED
OFFICE - KAUAI

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000655

July 5, 2000

Mr. Bill Kane
P. O. Box 511
Lawai, Hawaii 96765

Dear Mr. Kane,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. OYONO, P.E.
District Engineer

SM:es

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SUZETTE KANE
P.O. BOX 511
LAWAI, KAUAI, HAWAII 96765
(808) 332-8883

June 6, 2000

State of Hawaii
Department of Transportation
Mr. Steve Kyono
3060 Eiwa Street
Lihue, Kauai, Hawaii 96766

RE: Kaumualii Highway Widening

Dear Mr. Kyono:

Please allow me this opportunity to make a few comments about the proposed widening of Kaumualii Highway from two lanes to four lanes extending from Lihue to Koloa's Maluhia junction. I feel it is about time and I am very anxious to see it happen!

I like how your planners are using the existing roadway and widening it with the least amount of disruption to the area. I also like the proposed "bike paths" that are planned. A lot of people are riding their bikes on Kaumualii Highway, and the bike paths makes this safer for them. Personally, as a person who enjoys biking and walking, I was very happy to see the path as part of the plan. It is important to have this path wide enough for the bikers so that they can ride safely, especially during the times of day when the sun in the east and west impairs the vision of drivers on the roadway.

Mr. Kyono, thank you very much for allowing me to express my opinions and I hope to see this plan put into effect.

Sincerely,

Suzette M. Kane

Suzette M. Kane

2000 JUN -1 P 1:42

RECEIVED
OFFICE - KAUAI

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000656

July 5, 2000

Ms. Suzette Kane
P. O. Box 511
Lawai, Hawaii 96765

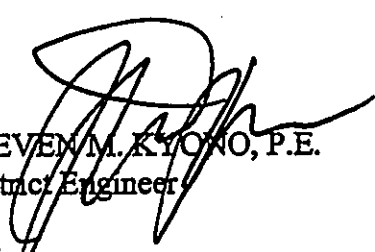
Dear Ms. Kane,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

BENJAMIN J. CAYETANO
GOVERNOR



KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

IN REPLY REFER TO:

HWY-KE 4.000657

July 5, 2000

Mr. Charlie King
4330 Kukui Grove Street
Lihue, Hawaii 96766


Dear Mr. King,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000658

July 5, 2000

Reverend Paul Kirchner
Lihue Lutheran Church
Lihue, Hawaii 96766

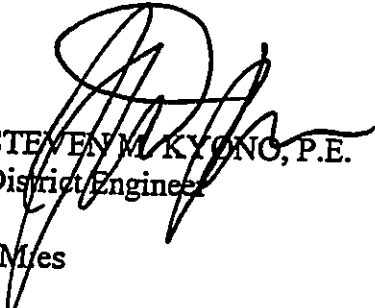
Dear Reverend Kirchner,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONG, P.E.
District Engineer

SM/ies

Public Comment Form
Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: Ernie Lau

Address: P.O. Box 1700

Lihue, HI 96766

Telephone (day): 245-5400

Telephone (eve): _____

Please make any comments below:
(return by June 7, 2000)

Can we provide a ^{better} separation between traffic & bike lanes in the 50mph highway section? (e.g. rail or berm)

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000682

July 5, 2000

Mr. Ernie Lau
P.O. Box 1706
Lihue, Hawaii 96766

Dear Mr. Lau:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments. We would like to provide the following response to these comments.

1. Guardrails will not be placed between the travel lane and the three-meter (10 feet) wide shoulders, which can be used by cyclists, because that would effectively eliminate the use of the wide shoulder. A bike path physically separated from the highway will not be provided because demand for such a facility does not justify its cost.

We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KONO, P.E.
District Engineer

SM:es
Encl.

Public Comment Form
Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: Ann Leighton

Address: 4555 Poluli Rd

Kapaa 96746-1562

Telephone (day): 639-3249

Telephone (eve): 822-7800

Please make any comments below:
(return by June 7, 2000)

Good project - good bicycle lanes. Please don't
forget, however, about Kapaa quiet locks - all day
every day.

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000659

July 5, 2000

Ms. Ann Leighton
4555 Pouli Road
Kapaa, Hawaii 96746

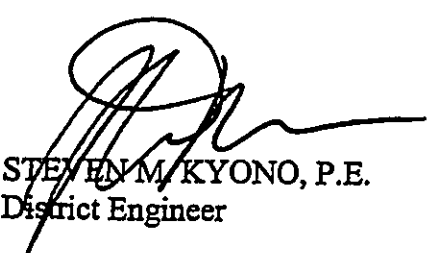
Dear Ms. Leighton,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

MARTIN STEEL CONSTRUCTORS, INC.

P. O. Box 478, Eleele, Kauai, Hawaii 96705
Phone: (808) 335-5844 - Fax: (808) 335-3381

Contr's Lic. No.
BC - 07337

June 7, 2000

Mr. Steve Kyono, District Engineer
Dept. of Transportation
3060 'Eiwa Street
Lihu'e, HI 96766

Dear Steve:

Martin Steel Constructors employs between 15 and 30 people, depending on work available, who are nearly always on the road between our fabrication plant in Port Allen and points East. We use Kaunualii Highway a considerable amount and have done so for over 20 years. As the years go by we have noticed a steady increase in the amount of traffic. The increased traffic translates to a decrease of productivity for our company and a increase in cost to our customers.

A four lane Kaunualii Highway from Lihu'e to Maluhia Road is needed. By the time the studies are done, planning is complete, and funding secured we will have a crisis to rival that of the North bound traffic out of Lihu'e. Then the entire island will be in gridlock.

We encourage your department to complete the Environmental Assessment, discourage the nay-sayers who are calling for a full blown EIS if one is not needed and proceed with the planning and construction of the new highway as soon as possible.

Thank You.

Respectfully yours
Martin Steel Constructors, Inc.

Fel Martin
Fel Martin, President

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SYS - KAUAI
2000 JUN -7 P 1:34

BENJAMIN J. CAYETANO
GOVERNOR



KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3080 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

IN REPLY REFER TO:

HWY-KE 4.000660

July 5, 2000

Mr. Hal Martin, President
Martin Steel Constructors, Inc.
P. O. Box 478
Eleele, Hawaii 96705

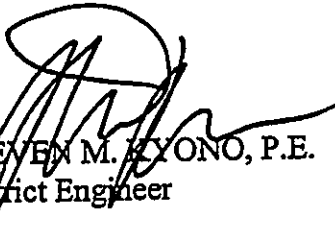
Dear Mr. Martin,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

Public Comment Form
Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

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HYS - KAUAI

2000 JUN -6 P 12: 10

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: Annie McEvety

Address: 4538 HOOMANA ROAD

Telephone (day): 808 246 9056

Telephone (eve): L

Please make any comments below:
(return by June 7, 2000)

Please see attachment:

BELOW ARE COMMENTS PERTAINING TO MY HOME @ 4538 HOOMANA AND THE CONSTRUCTION OF A ROAD REPLACING IT:

ATTN: STEVE

1. WE ALL KNOW THE HOME IS VERY WELL BUILT AND OF HISTORICAL VALUE. NOT TO MENTION MY PERSONAL ATTACHMENT TO IT.

2. THE ROOMS ARE BIG WITH HIGH CEILINGS, WINDOWS ARE ALL DOUBLE HUNG AND PROVIDE OPTIMUM BREEZE WAYS. THE HOUSE IS VERY COMFORTABLE AND SOLID.

3. THE TWO CAR GARAGE AND CARPORT IS A BIG PLUS ALONG WITH PROVIDING GREAT STORAGE IT ALSO PROVIDES PROTECTION FOR OUR CARS

4. THE PLACE IS VERY QUITE AND PEACEFUL.

5. THE LOCATION IS AMAZING. IT IS SO CLOSE TO LIHUE AND TOWN YET YOU FEEL AS IF YOUR IN A COUNTRY LIKE SETTING.

6.. THE PROPERTY THAT SURROUNDS THE HOME IS LUSH WITH FULL MATURE TREES, A NICE BIG LAWN IN THE FRONT AND BACK WITH LOTS OF PRIVACY.

7. HOOMANA ROAD ITSELF IS MAGICAL IN IT'S OWN WAY. IT HAS LOTS OF BEAUTY SEEN NO WHERE ELSE ON THE ISLAND. IT HAS SUCH HISTORICAL VALUE. I WOULD LIKE TO SEE THAT REMAIN THE SAME. I WOULD NOT WANT TO JEOPARDIZE OTHER HOMES IN THE PROCESS OF SAVING ONE.

THANK YOU FOR YOUR TIME AND CONSIDERATION:

Annie McEvety

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000678

July 5, 2000

Ms. Annie McEveety
4538 Hoomana Road
Lihue, Hawaii 96766

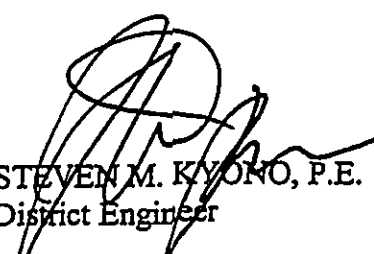
Dear Ms. McEveety:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments about your home. We are deeply sorry that the project will displace your residence. I want to assure you that we considered several alternatives for the re-alignment of Hoomana Road that would avoid any residential displacements, but these other alternatives would have serious disadvantages, as pointed out by the German Hill community. Hopefully, we can come to quick settlement to ease your burden.

Please feel free to contact me at 274-3111 if you have any questions. If you have any questions regarding your rights and benefits as a displaced person, please contact Mr. Cary Hanaoka or Mr. Michael Amuro of our Right-of-Way Branch at 692-7332. We will be in touch at the appropriate time as this project moves forward.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es
Encl.

Richard McSheehy
P.O. Box 458
Kalaheo, HI 96741

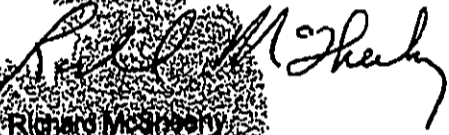
May 31, 2000

Mr. Steve Kyono
State Department of Transportation
3060 Elwa Street
Lihue, HI 96766

Dear Mr. Kyono:

Recently I read in the Garden Island about plans to construct the new four lane divided highway between Lihue and Maluhia Road. After some thought, I wrote a letter to the editor of the Garden Island expressing some alternative ideas. In case you did not happen to see the letter, which was published in today's paper, I am enclosing a copy for your perusal. I would be interested in hearing your comments. I am also sending a copy of the letter to Mayor Kusaka.

Sincerely yours,


Richard McSheehy

RECEIVED
OFFICE - KAUAI
2000 JUN -2 A 10:42

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[Redacted area]

Editor
The Garden Island

Dear Sir:

I recently read that plans are well underway for a four lane divided highway that would extend from Lihue to Maluhia Road. Although I have heard discussion of this from time to time, I had not realized that we were this close to approval of the plans. I would like to offer a few comments on the plans, as I understand them now. I have had the good fortune to travel throughout much of the United States and many foreign countries, yet I have never seen a more beautiful place than Kauai. It is from a desire to maintain and protect this special island that I offer these comments. I realize that these proposals I make may be too costly or for some reason not possible to implement; however, I believe I should at least voice them anyway.

1 Like many other Kauai residents, I am a transplant from the mainland and I grew up in the midst of major road construction projects and have traveled many miles on various superhighways throughout the United States. Very few highways have ever left me with a feeling of appreciation for the countryside as I drove along. However, there are several parkways on the mainland that do preserve the scenic beauty of the environment. Some parkways separate the traffic traveling in opposite directions by as much as several hundred yards, so you are not really aware there is traffic flowing in the opposite direction. This provides a much cleaner looking and scenic environment for the traveler. Also, without the oncoming traffic passing by, there is less sense of speed and commotion. I understand from your article that the current plan for Kauai's divided highway is to separate the opposing lanes by up to 32 feet. While this may seem like a large separation between traffic lanes, in reality it isn't. I believe it would be preferable to consider our road to be a parkway rather than a highway and separate the opposing lanes of traffic by as much as 100 yards or more if possible. This would amount to building an additional two-lane highway, similar to Kaunualii Highway at some distance to the north or south. Kaunualii Highway would then become a one-way road while the new road would be one way in the other direction. Together, these would become the Kaunualii Parkway. Admittedly this is probably not possible within the confines of Lihue town; however, I would hope that between Puihi and Maluhia Road a larger separation than 32 feet could be obtained.

2 The newspaper article also stated that bicycle paths would also be created as part of the highway construction project. Some years ago, I had the good fortune to spend some time in Denmark and I was very impressed with the bicycle paths that have been created there. These paths are completely separate from the highways, although they are more or less parallel to them. They seem to be built 20 to 30 yards from the road and pass through woods and fields, safely removed from the high-speed highway traffic. I would suggest that this sort of bicycle path be considered for Kauai instead of the prevailing concept, which locates bicycle paths immediately adjacent to vehicular traffic lanes. Both tourists and local people would enjoy separate bicycle paths, such as those built in Denmark.

It may seem extravagant to wish for a divided highway with a very wide median strip; and separate bicycle paths are surely more costly than those that are incorporated into a highway. If this project were to be done in another place it might not matter; however, I believe Kauai is a special place and deserves special treatment. The highway and bicycle paths we build tomorrow will likely be in use for a hundred years or more. If we can find a way to build these roads that allows us, and all who follow us, to enjoy the serenity and beauty of this island, then we will have truly been good stewards of the land.

Richard McSheehy,
Kalaheo

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HWY-K 4.000557

July 31, 2000

Mr. Richard McSheehy
P. O. Box 456
Kalaheo, Hawaii 96741

Dear Mr. McSheehy:

Subject: Improvements to Kaunualii Highway, Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on, and concern about the Highways Division's proposal to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway between Lihue and Maluhia Road. The following are responses to your comments:

Your first comment asks us to consider separating the east and west bound travel lanes by a distance of at least 100 yards, which is substantially greater than the proposed 30 feet of separation. This suggestion would require substantially more right-of-way than currently proposed because most of the area between the travel lanes would be unusable, even for agriculture. Therefore, we would have to purchase this land which would substantially increase the cost of the project. The larger project footprint would also potentially increase the environmental impacts of the project.

Your second comment suggests the placement of bike paths 20 to 30 yards off of the highway as part of the proposed project. Similar to our proposal to widen the median strip, placing bike paths away from the travel lanes would substantially increase the cost of the project because additional right-of-way would be required between the roadway and the bike path. The demand for bike paths as you suggest, would not justify the additional project expenditure.

In addition, widening the highway median strip, and/or, placing bike paths substantially away from the travel lanes will lead to increases in highway facilities maintenance costs.

Mr. Richard McSheehy
Page 2
July 31, 2000

HWY-K 4.000557

Again, thank you for your thoughtful comments and appreciate your concern for the future of Kauai. If you have any questions about the Kaumualii Highway project, please contact Mr. Steve Kyono, Kauai District Engineer, at 274-3111.

Very truly yours,



KAZU HAYASHIDA
Director of Transportation

GY:wb

c: Honorable Benjamin Cayetano (00:0606437)
bc: HWY-K

00:0606437

ABEL MEDEIROS
P.O. BOX 563
KOLOA, KAUAI, HAWAII 96756
(808) 742-6718

June 6, 2000

Mr. Steve Kyono
State of Hawaii
Department of Transportation
3060 Eiwa Street
Lihue, Kauai, Hawaii 96766

RE: Kaunualii Highway Widening

Dear Mr. Kyono:

As a long time Kauai resident of 80 years, I would like to tell you that I am FOR the expansion of the Kaunualii Highway, changing it from two lanes to four lanes. I feel this expansion should have happened a long time ago, and I am happy to see that a proposal has been made. As a former Legislator and County Councilman, you have my best wishes for a successful project.

Aloha,



Abel Medeiros

RECEIVED
OFFICE - KAUAI

2000 JUN -7 P 1:42

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000661

July 5, 2000

Mr. Abel Medeiros
P. O. Box 563
Koloa, Hawaii 96756

Dear Mr. Medeiros,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KIONO, P.E.
District Engineer

SM:es

Public Comment Form
Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: Owen Moe

Address: P.O. Box 656
Kekaha Hi 96752

Telephone (day): 8 246-4332

Telephone (eve): 337-1585

Please make any comments below:
(return by June 7, 2000)

There should be a Citizen Advisory Committee
formed ~~for~~ to work with the DOT in solving
the Traffic Problems on Kauai. Similar to
the General Plan Update CAC.

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000684

July 5, 2000

Mr. Owen Moe
P.O. Box 656
Kekaha, Hawaii 96752

Dear Mr. Moe:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

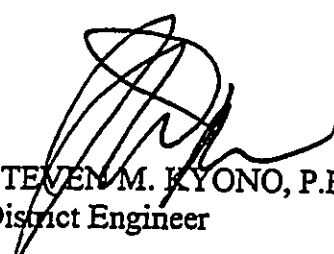
Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments. We would like to provide the following response to these comments.

1. Citizens' Advisory Committee was formed to help prepare the Kauai Long-Range Land Transportation Plan (May 1997). The proposed project was recommended in the Long-Range Plan. A Citizens' Advisory Committee will be re-formed when this transportation plan is updated.

We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es
Encl.

Public Comment Form
Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: LINDA NICHOLS

Address: PO Box 26

Koloa HI 96756

Telephone (day): —

Telephone (eve): —

Please make any comments below:
(return by June 7, 2000)

Cycle lanes are a FANTASTIC IDEA, it's so dangerous to bike anywhere at present, & it may help reduce no. cars on road.

The highway is necessary, any cons are far outweighed by the pros. The consequences of no action are too great to not go ahead with the project.

MY 100% SUPPORT!

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000662

July 5, 2000

Ms. Linda Nichols
Goodfellow Brothers, Inc.
P. O. Box 26
Koloa, Hawaii 96756

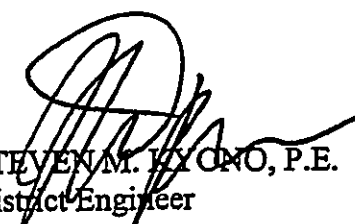
Dear Ms. Nichols,

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. LYONS, P.E.
District Engineer

SM:es

Public Comment Form
Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: MAC NICHOLS

Address: PO Box 26
KOLA HI 96756

Telephone (day): 245 9641

Telephone (eve): _____

Please make any comments below:
(return by June 7, 2000)

Awesome forethought. This is a
necessary increase in roadways for KAUAI.
Pedestrian & Bicycle access a must for such
a beautiful place.

Next will have to be Kapaa town
road closure and bypass construction.

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000663

July 5, 2000

Mr. Mac Nichols
Goodfellow Brothers, Inc.
P. O. Box 26
Koloa, Hawaii 96756

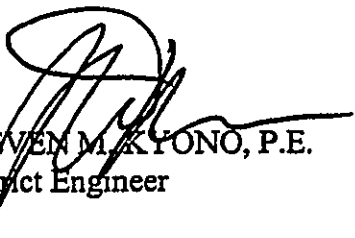
Dear Mr. Nichols,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

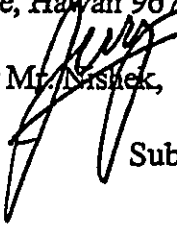
IN REPLY REFER TO:

HWY-KE 4.000664

July 5, 2000

Mr. Jerry Nishek
Kauai Nursery
3-1550 Kaumualii Highway
Lihue, Hawaii 96766


Dear Mr. Nishek,

 Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000675

July 5, 2000

Mr. Leland Nishek
Kauai Chamber
3-1550 Kaumualii Highway
Lihue, Hawaii 96766

Dear Mr. Nishek:

**Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii**

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We have reviewed your oral comments made at the project's public hearing, and would like to provide the following responses. If we have misinterpreted any of your comments, please let us know.

Comment 1. The overhead utility lines should be placed underground. Commentor believes that the project will underground utility lines.

Response. At this time, we do not plan to underground any displaced overhead utility lines along Kaumualii Highway because of its high cost. However, we will revisit this issue during the design phase of the project when we have a clearer understanding of the overall cost of the project. Since the details of utility relocations have not been determined, the relocated utility lines were not shown in the visual simulation of the modified Lihue Mill Bridge. There was no intent to mislead the public.

Mr. Leland Nishek
Page 2
July 5, 2000

HWY-KE 4.000675

Comment 2. The project should include landscaping. Landscaping does not have to be continuous. For example, groupings of trees could be placed at certain locations.

Response. We understand the importance of maintaining the natural beauty of Kauai. Therefore, a substantial portion of the construction budget will be set aside for landscaping. Plants adaptable to the local growing conditions will be used because much of the highway will not have irrigation. When possible, native trees and shrubs will be used. Interested organizations will be consulted for suggestions about plantings. Your suggestion will be considered.

We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,



STEVEN M. IYONO, P.E.
District Engineer

SM:es

Public Comment Form
Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

2000 JUN -7 A 10:39

RECEIVED
KAWAII - KAUAI

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: Tracey and Ric Ochoa

Address: P.O. Box 726

Lauai, HI 96765

Telephone (day): _____

Telephone (eve): 332-7714 leave message

Please make any comments below:
(return by June 7, 2000)

It is about time that we expand Kaumualii Highway to four lanes. Having to fight traffic coming into Lihue from the West Side every morning is not fun and a waste of time, not to mention a waste of gas. In the afternoon, it is even worse. Traffic starts building up right after schools let their students out for the day and continues until after pau hana. What should be a pleasant drive turns into a stressful and dangerous one. Traffic will only get worse with the addition of much needed new communities and the re-opening of renovated hotels. We are already looking at worsening traffic conditions with the Rice Street Reconstruction, the Kaumualii Highway Acceleration Lane at Maluhia Road and the Kaumualii Highway Resurfacing projects. Will we have to wait until we have another Kapaa? By that time, it will be such a hassle coming into and going out of Lihue that people are going to find other options.

Another situation that happens that causes traffic jams is car accidents. How many times has traffic come to a standstill because of an accident. If we had more lanes, the possibility of keeping lanes open to allow for traffic flow is increased. I personally have been stuck in this traffic because I had no other choice. Residents were missing appointments and tourists were missing flights. Not having another route to Lihue is unacceptable and expanding Kaumualii Highway to four lanes could help solve the problem.

Lastly, think about times of disaster. It is not a question of if, it is a question of when another disaster will hit this island. Four lanes means better flowing traffic in times of evacuation or for relief efforts after the fact.

Please do not let traffic between Lihue and the West Side become worse. This is enough already. Let's be proactive, not reactive.

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:
HWY-KE 4.000665

July 5, 2000

Mr. & Mrs. Ric Ochoco
P. O. Box 726
Lawai, Hawaii 96765


Dear Mr. & Mrs. Ochoco,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

Anne E. O'Malley
P.O. Box 1806
Koloa, HI 96756

RECEIVED
MAILS - KAUAI

2000 JUN -6 A 11:51

June 2, 2000

Steven Kyono, District Engineer FAX 274-3116
DOT Room 205
3060 Eiwa St.
Lihue, HI 96766

Dear Steven Kyono:

Mahalo for choosing a career in life that has the power to make others' lives better through the things you design and build. In consideration of DOT plans to develop four-lane highways, I offer the following.

- 1 | Keep the small-town and rural flavor that visitors and residents alike enjoy about Kaua'i. Prohibit the development of four-lane highways now and in the future. Alternative routes with two lanes, such as the Kapa'a bypass make more sense for a community whose number one industry is tourism. Such routing has the added value that when repair is needed, all traffic could be shunted to only one of the roads, thereby minimizing traffic congestion or upset during construction.
- 2 | Another thoroughly underexplored and underutilized yet practical solution to traffic lies in creating reliable, reasonably-priced public transportation--perhaps even a light rail that travels the island. Where good public transportation exists, people use it. And speaking of public transportation, add to each conveyance tracks for backpacks and/or bikes.
- 3 | We have a forgiving climate that allows for all manner of self-propelled transportation. Install more bicycle lanes separate from road shoulders and a minimum of 30 yards from the highway for safety from traffic and exhaust fumes for bicyclists, small motor scooters, roller bladers, skateboarders and even walkers. These are alternative forms of transportation which we ought to encourage.
- 4 | Preserving the rural charm of Kaua'i is a must. Can we do less than our forefathers who planted the swamp mahogany on Maluhia Road, gateway to the South Shore? Trees--lots of them, chosen for their growth and minimal maintenance--should line new Kaua'i roads. Several years ago, Kaua'i was fortunate to have Jeff Lacey in the planning department who introduced us to forward-looking models derived from projects in the Connecticut River Valley. There, highways unfolded past greenways planted with trees. These greenways wrapped around small commercial complexes, preserving the view and reducing the tacky strip-mall look.
- 5 | Traffic lights one block apart seem to be cropping up in Lihue. Are they part of planned growth? Will new roads development take advantage of traffic flows, bypasses or other means to reduce the quantity of stoplights?

In short, I ask that you and the DOT planners give every consideration to preserving beauty and rural charm on Kaua'i. Your decisions on what to do and how to do it are tough ones. It is too easy to sell out this island with the claim that the money isn't there. It happened after 'Iniki when the 60- or 70-foot cement power poles went up instead of putting lines underground. Levy a tax. Write a grant. Set up a charity. Find a donor. Be creative in the problem solving. Unlike many of us whose work isn't seen, yours and that of the DOT is. For generations to come, people will drive, cycle and walk the roads you pour. Make them memorable.

Sincerely,

Anne E. O'Malley

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000685

July 5, 2000

Ms. Anne E. O'Malley
P.O. Box 1806
Koloa, Hawaii 96756

Dear Ms. O'Malley:

**Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii**

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments, which have been numbered. We would like to provide the following responses to these comments.

1. To address the project's purposes and needs, the suggested two-lane alternative route would have to be placed parallel to Kaumualii Highway between Koloa and Lihue. We do not favor construction of a new roadway at this time when the expansion of the existing Kaumualii Highway addresses the project's purposes and needs, without significant environmental and social impacts. Creation of a new highway alignment would probably result in greater adverse impacts than the proposed project.
2. We are highly supportive of public transportation because it leads to more efficient use of the highway system. We would support any improvements to the County's bus system. However, improving public transportation would not address all of this project's purposes and needs. The population of the project area now and in the foreseeable future will not support the construction and operation of a light rail transit system, which is expensive.

Ms. Anne E. O'Malley
Page 2
July 5, 2000

HWY-KE 4.000685

3. We suggest you contact the County Transportation Agency with regards to conveyance of backpacks and/or bikes on the County buses.

With the exception of freeways or similar types of highway, we agree that all State highways be shared by all users, including cyclists and pedestrians. Therefore, the expanded Kaumualii Highway will include three-meter (10 feet) wide shoulders, which can be used for cycling, and sidewalks in the urban sections of the highway. Having a separate parallel bike path several meters from the roadway would substantially increase the cost of the project because right-of-way would have to be purchased between the roadway and the bike path. The demand for such a bike/pedestrian path along the entire length of the project does not justify the cost of such a facility.

4. We understand and agree with the importance of maintaining the natural beauty of Kauai. Therefore, a substantial portion of the construction budget will be set aside for landscaping. Plants adaptable to the local growing conditions will be used because much of the highway will not have irrigation. When possible, native trees and shrubs will be used, and some of the trees displaced by the highway will be relocated to locations along the widened Kaumualii Highway. Interested organizations will be consulted for suggestions about plantings.
5. Traffic lights are installed at roadway intersections for safety reasons. Depending on the type of roadway constructed, it may or may not include traffic signals. Kaumualii Highway has traffic signals because adjacent communities need to have safe access to the highway.

We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN KYONO, P.E.
District Engineer

SM:es
Encl.

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000674

July 5, 2000

Mr. Fred Reyes
5207 Hauaala Road
Kapaa, Hawaii 96746

Dear Mr. Reyes:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We have reviewed your oral comments made at the project's public hearing, and would like to provide the following response. If we have misinterpreted your comments, please let us know.

Comment. Suggests that a westbound to southbound ramp be constructed at the Kaumualii Highway / Maluhia Road intersection because the commentator believes that it will be difficult for motorists to cross two lanes of traffic during the morning peak period.

Response. The projected traffic volumes at the Kaumualii Highway / Maluhia Road intersection do not warrant a westbound to southbound ramp. Nevertheless, we do not favor a ramp at this intersection because it would block views of the Maluhia Road Tree Tunnel, a valuable natural and scenic resource. A preferable solution would be the installation of traffic signals. It will be determined during the design phase whether this intersection warrants traffic signals.

We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,

A handwritten signature in black ink, appearing to read "S. M. Kyono".

STEVEN M. KYONO, P.E.
District Engineer

SM:es

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000673

July 5, 2000

Mr. Joseph Rosa
4611 Ekolu Street
Lihue, Hawaii 96766

Dear Mr. Rosa:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We have reviewed your oral comments made at the project's public hearing, and would like to provide the following response. If we have misinterpreted your comments, please let us know.

Comment. Suggest an alternative be considered that would utilize an existing, but inactive, Grove Farm cane haul road, which passes through Haupu Range via a tunnel.

Response. We do not favor construction of a new highway, even though it follow an existing cane haul road alignment, when the expansion of the existing Kaunualii Highway addresses the project's purposes and needs, without significant environmental and social impacts.

We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,

A handwritten signature in black ink, appearing to read "S. M. Kyono".

STEVEN M. KYONO, P.E.
District Engineer

SM:es

Public Comment Form
Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

2000 MAY 31 A 10

RECEIVED
HHS - KAUAI

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: Roy Takatsuki
Address: Roy Takatsuki Construction Services
5269 Kihei Road
Kapaa, HI 96746
Telephone (day): 639-0388
Telephone (eve): same

Please make any comments below:
(return by June 7, 2000)

The expansion and widening of Kaumualii Highway is a concern and of interest to me because my construction company office is in Koloa and our work is island-wide. It is not unusual for me or my crew to criss-cross the island several times a day during the work week. The west wide traffic is a interesting mix of rental cars, commercial vehicles, agricultural and construction and military vehicles, equipment and the like along with the general publics vehicles. And any one or combination of tchse vehicles can make driving this highay frustrating because of the number of hills and no-passing zones.

An expanded highway is needed and sooner rather than later. I strongly support the department's plans that has been shared in the public meetings and public hearings. Please move forward as soon as possible.



BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000666

July 5, 2000

Mr. Roy Takatsuki
Roy Takatsuki Construction Services
5269 Kihei Road
Kapaa, Hawaii 96746

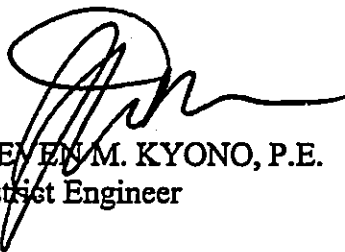
Dear Mr. Takatsuki,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000667

July 5, 2000

Mr. Tom Shigemoto
4090 Puaole Street
Lihue, Hawaii 96766

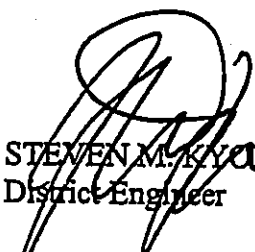
Dear Mr. Shigemoto,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

RECEIVED
DOTS - KAUAI

2000 JUN -6 A 11:49

June 4, 2000

Steven Kyono - District Engineer DOT
3060 Eiwa St. Rm 205
Lihue, HI 96766

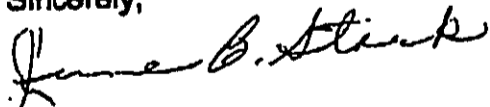
Dear Mr. Kyono:

I know years of studies and preliminary work have gone into the highway plans for a four lane highway from Lihue to the tree tunnel, and I appreciate the difficulties that people like you have in trying to plan for the uncertain future needs of Kaua'i. However, remembering the days when we moved here when the only traffic light was the one in the cane field I can't help but feel that putting in a four lane highway is the ultimate waving of the white flag of surrender to a vision of Kaua'i that most people, residents and visitors, don't want.

I accept that change is inevitable and that regardless of whether those of us who came only twenty some years, or whether our families came generations ago, we all have been part of forcing change on the island. Still in hindsight we can see that some of the changes have been made with lesser impact than others, that the height limit on buildings was a good decision regardless of the fierce opposition to it at the time that decision was made. The Waimea Plantation project to make the workers' homes into vacation cottages is another example of a change that was in keeping with Kaua'i history and beauty and still promoted the visitor industry.

1 | I don't think a four lane highway, as attractive a solution as it appears to be, is in the long
2 | range welfare of the island either for residents or for visitors. I traveled from Kalihiwai to Puhi
every day for fifteen years until I retired from KCC and I welcomed the morning cones and
the bypass road, both sensible improvements, and a bypass road around Kapa'a,
hopefully one that takes full advantage of already existing cane haul roads, may be
warranted. But I urge the DOT to reconsider a four lane highway on Kaua'i. If it absolutely
must be, then I do hope a separated bike path will be an integral part of the plan as well as
appropriate landscaping, not simply grass medians. Anyone who has traveled the Blue
Ridge Parkway appreciates the sensitivity to the lovely landscape of that four lane highway
which separates the opposing lanes completely and makes it a joy for a visitor to drive. I
hope the plans which you promote would be equally sensitive to the beauty of Kaua'i if
the white flag of surrender must be accepted.

Sincerely,



June B. Stark
Box 398
Kilauea, HI 96754

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000687

July 5, 2000

Ms. June B. Stark
P.O. Box 398
Kilauea, Hawaii 96754

Dear Ms Stark:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments, which have been numbered. We would like to provide the following responses to these comments.

1. The expanded Kaumualii Highway will include three-meter (10 feet) wide shoulders, which can be used for cycling, and sidewalks in the urban sections of the highway. Having a separate parallel bike path several meters from the roadway would substantially increase the cost of the project because right-of-way would have to be purchased between the roadway and the bike path. The demand for such a bike/pedestrian path along the entire length of the project does not justify the cost of such a facility.
2. A substantial portion of the construction budget will be set aside for landscaping. Plants adaptable to the local growing conditions will be used because much of the highway will not have irrigation. When possible, native trees and shrubs will be used, and some of the trees displaced by the highway will be relocated to locations along the widened Kaumualii Highway. Interested organizations will be consulted for suggestions about plantings.

We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONG, P.E.
District Engineer

SM:es

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000668

July 5, 2000

Ms. Karen Taketa
4756 Kua Road
Kalaheo, Hawaii 96741

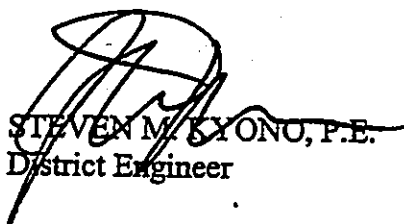
Dear Ms. Taketa,

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

Richard A. Miller
PO Box 1456
6060 Waialea Valley Road
Hanalei, Hawaii 96714-1456
Telephone: (808) 825-4634
Fax: (808) 825-1082
e-mail: dmiller@hawaiian.net

**TREEHOUSE
ENTERPRISES**

RECEIVED
MAY 31 - KAUAI

2000 JUN - 1 A 10: 05

Fax:

To: Steven Kyono - District Engineer DOT From: TREEHOUSE ENTERPRISES
Fax: 274-3118 Pages: Two (2)
Phone: Date: 06/01/00
Re: 4 lane highways on Kauai CC:

Urgent For Review Please Comment Please Reply Please Recycle

Comments:

Regarding your plans for the widening and expansion of the existing roads on this island:

1. No 4 lane highways (or divided roads) on Kauai now or in the future
2. Think in terms of alternative routes with 2 lanes in another place, ^{INSTEAD OF 4 LANES}
separated by at least 100 yards.
Some advantages include:
1. Keeps the country look which is what we and tourists want
2. When repair is needed ALL traffic could go on the other road.
3. No traffic congestion or upset during the construction
- 2 | 3. Trees or bushes along all roads - not just grass (present plan)
- 3 | 4. Underground wires along all widened roads or new roads while it is dug up
- 4 | 5. As few new traffic lights as possible
6. No 4 lane widening in Lihue (in the plans now)

June 1, 2000

5 | 7. Consider the problem — put a limit on cars allowed into the island, BOTH FOR SALE AND RENTAL.
All you will be doing with more lanes of roads is to allow even more
congestion on this little island. LOOK AT OAHU..... LEARN FROM
PAST MISTAKES. THAT PLACE IS A STINKING MESS BECAUSE
OF ALL THE TRAFFIC AND NO RESTRICTIONS.

6 | 8. Increase public busses. The bus should go to the airport & run more
frequently

7 | 9. No shoulders marked as bike paths. They are death traps not bike paths.
Bike paths should be a minimum of thirty yards from the highway for safety
from the traffic and exhaust fumes

8 | 10. No strip malls or development along new highways

9 | 11. NO advertising along and "clutter" along new roads

12. In addition, when making repairs on the road by the dry caves on the north end
ABSOLUTELY DO NOT WIDEN THAT ROAD.

Leave as is with a culvert under the road.

You are destroying what people love to come here to see and experience.

Leave well enough alone and stop trying to make this island like Oahu.

What we have here now and what this island has to offer, is why people come here and
they do not want to see any more cement poured here. Maybe you people
should get out and talk to the visitors and to the people who live here. They
don't want it and WE don't want it. IT IS TIME YOU LISTENED!!!!!!

Dick Miller

P.O. Box 1455

Hanalei, HI 90714

828-1521

fax: 828-1082

● Page 2

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000683

July 5, 2000

Mr. Richard A. Miller
Treehouse Enterprises
P.O. Box 1458
Hanalei, Hawaii 96714-1458

Dear Mr. Miller:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments, which have been numbered. We would like to provide the following responses to these comments.

1. What is being suggested is a 100 yard wide median, which is substantially wider than the approximately ten-meter (32 feet) wide median being proposed. This suggestion would require substantially more right-of-way than currently proposed because most of the area between the travel lanes would be unusable, even for agriculture. Therefore, SDOT-HWY would have to purchase this land, which would substantially increase the cost of the project. In addition, creating a new roadbed offset so far from the existing highway could cause substantial adverse environmental impacts.
2. A substantial portion of the construction budget will be set aside for landscaping. Plants adaptable to the local growing conditions will be used because much of the highway will not have irrigation. When possible, native trees and shrubs will be used, and some of the trees displaced by the highway will be relocated to locations along the widened Kaumualii Highway. Interested organizations will be consulted for suggestions about plantings.

Mr. Richard A. Miller
Page 2
July 5, 2000

HWY-KE 4.000683

3. At this time, we do not plan to underground any displaced overhead utility lines along Kaumualii Highway because of its high cost. However, we will revisit this issue during the design phase of the project when we have a clearer understanding of the overall cost of the project.
4. The decision to place traffic signals at intersections along Kaumualii Highway will be made during the design phase and will be based on traffic conditions.
5. Limiting the number of vehicles on Kauai is beyond our authority.
6. Although increasing the bus fleet of the County's bus system would improve public transportation on the island, it would not address all of this project's purposes and needs. Nevertheless, we are highly supportive of public transportation because it leads to a more efficient use of the highway system.
7. The expanded Kaumualii Highway will include three-meter (10 feet) wide shoulders, which can be used for cycling. Placing a bike path a minimum of 30 yards from the highway would substantially increase the cost of the project because right-of-way would have to be acquired between the roadway and the path. The demand for such a bike/pedestrian path along the entire length of the project does not justify the cost of such a facility. Additionally, the level of environmental impact would increase.
8. Zoning along the highway is under the jurisdiction of the County.
9. Advertising along the highway is not allowed, other than signage on business establishments per County regulations.

We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. AYONO, .E.
District Engineer

SM:es
Encl



**Unlimited Construction
Services Incorporated**

May 18, 2000

Mr. Steven Kyono, District Engineer
Highways Division, Kauai District
State of Hawaii Department of Transportation
3060 Eiwa Street, Room 205
Lihue, HI 96766

RECEIVED
HIGHWAYS - KAUAI
2000 MAY 22 A 10:44

**Subject: Improvements to Kaunualii Highway
Lihue West to Maluhia Road**

Dear Steve,

I am in favor of the proposed improvements. The benefits of better traffic operations, more capacity, and improved highway safety far outweigh the concerns of the historic significance of some rails on the Lihue Mill Bridge.

Your plan takes care of the environmental concerns by preserving wetlands. The loss of agricultural fields is insignificant given the enormous amount of agricultural land on Kauai, and this land is not currently in use.

Please expedite this project as it will benefit the commuter and reduce exposure to traffic accidents. Thank you for the foresight of the DOT in planning and funding a project like this.

Sincerely,
UNLIMITED CONSTRUCTION SERVICES, INC


Randy Eintay
Vice President

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000669

July 5, 2000

Mr. Randy Finlay
Vice President
United Construction Services Incorporated
P. O. Box 3327
Lihue, Hawaii 96766


Dear Mr. Finlay,

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100

P.O. Box 10558
Honolulu, HI 96816
(808) 737-8410 cmw@aloha.net

Carol Wilcox

June 7, 2000

Mr. Steve Kyono, Kauai District Engineer
State DOT Highways Division
3060 Ewa St, Rm.205
Lihue, Kauai 96766

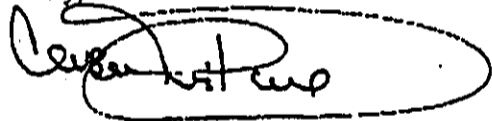
RECEIVED
STATE - KAUAI
2000 JUN 13 A 11:06

RE: Project No. 50DL-02-95 Improvements to Kaunualii Highway, Lihue to Maluhia Road

Dear Steve:

Thank you for the opportunity to comment on the above project. The EIS does not indicate that there will be any long-term impact to the ingress-egress at our historic/commercial property at Kilohana. That being the case, we have no comment on this project. If that is not the case, then the EIS is deficient in that respect.

Sincerely,



Carol Wilcox

Malama Pono

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO

HWY-KE 4.000688

July 5, 2000

Ms. Carol Wilcox
P.O. Box 10558
Honolulu, Hawaii 96816

Dear Ms. Wilcox:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

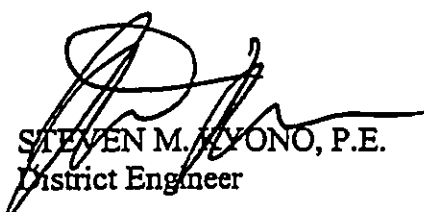
Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments. We would like to provide the following response to these comments.

1. In the vicinity of Kilohana, the proposed widening will occur on the south (makai) side, away from the property. Access to Kilohana will not be affected once the widening is completed. During construction, access will be maintained at all times, but detours may be required.

We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. MYONO, P.E.
District Engineer

SM:es
Encl

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000670

July 5, 2000

Mr. Douglas M. Yoneji
3180 Umi Street
Lihue, Hawaii 96766

Dear Mr. Yoneji,

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

CHAPTER SIX

Finding of No Significant Impact

CHAPTER 6 FINDING OF NO SIGNIFICANT IMPACT

This chapter discusses the basis of the Findings of No Significant Impact (FONSI) for the Proposed Improvements to Kaunualii Highway, Island of Kauai, County of Kauai, Hawaii.

The State of Hawaii Department of Transportation, Highways Division (SDOT) made an early assessment that a FONSI is appropriate based on their understanding of the environmental impacts of the project at that time. Following public release of the project's Draft EA, no new information was provided to indicate that the project would generate a significant environmental impact. Therefore, SDOT and FHWA have prepared this Final EA, and will publicly announce the official FONSI determinations under the Hawaii EIS Law (Chapter 343 Hawaii Revised Statutes--HRS) and the National Environmental Policy Act (NEPA). The official FONSI determinations conclude the environmental review process under these regulations. The environmental and construction-related permits listed in Chapter 4 still need to be obtained, however.

6.1 HAWAII REVISED STATUTES, CHAPTER 343

In accordance with Chapter 343 HRS and Hawaii Administrative Rules (HAR), Sections 11-200-9 and 11-200-11.2, the SDOT, as the approving agency at the State level, has rendered a FONSI assessment for the proposed project. This assessment is based on an evaluation of project impacts in relation to the "Significance Criteria" specified in HAR 11-200-12(b). The nature of the project's impacts is discussed in detail in Chapter 4.

The Significance Criteria appear below in italics, followed by a discussion of the project in relation to the specific criterion. References to the "proposed project" are to the Build Alternative as presented in Chapter 2.

Involves an irrevocable commitment to loss or destruction of any natural or cultural resource - The proposed project will not cause the loss or destruction of any natural, historic or cultural resource. Such resources include the Maluhia Road tree tunnel, the

historic Lihue Mill Bridge, and the German Hill Historic District. No cultural resources were identified in the project area.

The tree tunnel will be unaffected by the proposed project because the widening will occur on the north (mauka) side of Kaumualii Highway at the Maluhia Road intersection, away from the tree tunnel.

The proposed project will replace the railings of the historic Lihue Mill Bridge. However, they are already severely rusted and decrepit, and will eventually be replaced with or without this project because of their poor condition, and they will need to be replaced by new railings that meet current highway safety standards. Therefore, since their replacement will be required in any case, this project is not causing their loss or destruction. Natural processes have largely caused their loss already.

While a house at the southern edge of the German Hill Historic District will be displaced, this loss will be mitigated, and the integrity of the Historic District will be preserved.

Curtails the beneficial uses of the environment - The proposed project will not curtail the beneficial uses of the environment. The many recreational activities and environmental resources available on Kauai will not be adversely affected by the proposed project. Access to recreational and natural resources will be improved, and the filling of a wetland area has been minimized to a substantial degree, and any loss wetland will be replaced.

Conflicts with the State's long-term environmental policies or goals and guidelines expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders - The proposed project is consistent with the environmental goals and objectives of the State.

Substantially affects the economic or social welfare of the community or State - Although the proposed project will require additional right-of-way, the only displacement that will occur is one residence at the extreme southern edge of the German Hill neighborhood in association with the realignment of Ho'omana Road. No neighborhood will be split, and the remaining houses and church in German Hill will remain a cohesive neighborhood unit. Therefore, the proposed project will not adversely affect social or economic activities in any

neighborhood or community along Kaumualii Highway, in the region, or on the island. Improved mobility provided by the capacity enhancement of the roadway will advance economic and social conditions.

Substantially affects public health - The proposed project will not detrimentally affect public health. It will improve the safety of motorists, bicyclists and pedestrians traveling on Kaumualii Highway. Motor vehicle safety will improve by converting the highway from an undivided to a divided configuration, reducing the chance of head-on collisions. Increased laneage will more safely convey existing and future traffic movements. Intersection improvements will enhance the safety of those turning.

Bicycle safety will improve by the widening of roadway shoulders to 3 m (10 feet), which will better accommodate bicycle movement along the Highway. Pedestrian safety will improve with the provision of sidewalks in compliance with the Americans with Disabilities Act, in those sections of the Highway to be provided with the urban cross-section.

Involves substantial secondary impacts - The proposed project will not cause secondary impacts in light of the existing land uses and zoning designations in areas abutting the highway, and County land use plans and policies regarding growth. In the areas nearest Lihue, urban development is occurring, and is forecast to continue. While the widened highway will help convey more travelers, it will not in itself change the land use development pattern now occurring, proposed in County policies, and being planned for in an integrated fashion.

Involves substantial degradation of environmental quality - Studies of air quality, noise, water quality and other environmental disciplines indicate that the proposed project's effect on environmental quality will be minimal.

Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions - The proposed project will not cause urban development or induce development in areas not approved by the County. However, since the area between Puhi and Lihue is planned for urban development, some level of cumulative impacts can be expected. As is its prerogative, the County has determined that this is an appropriate area for urban development to accommodate future population

growth. This land is not being used for agriculture or other productive purpose. Therefore, the cumulative effect to the environment will not be severe as County planning is consistent in encouraging growth and the provision of requisite infrastructure in this area.

Since the section of road proposed for widening connects logical termini from the perspective of the transportation network, the proposed project will not create a commitment to undertake larger actions.

Substantially affects a rare, threatened or endangered species, or its habitat – Although the U.S. Fish and Wildlife Service and the State of Hawaii Department of Land and Natural Resources identified endangered animal species in the project area, the proposed project will not adversely affect their habitat or continued existence.

Detrimentially affects air or water quality or ambient noise levels – With either the No Build or proposed project conditions, some localized areas near intersections will experience carbon monoxide levels that are slightly greater than the stringent State Ambient Air Quality Standard (AAQS) under worst-case conditions. This finding is routine because most intersections in the State with even moderate levels of traffic experience violations of the State AAQS under worst-case meteorological conditions.

With the proposed project, predicted traffic noise levels at noise-sensitive locations along Kaunualii Highway under will not constitute an "impact" according to the SDOT Noise Analysis and Abatement Policy (approved June 26, 1997). Therefore, noise abatement measures need not be considered.

Because construction activities could adversely affect the water quality of streams and ditches crossing Kaunualii Highway and downstream water bodies, Best Management Practices to control erosion and sedimentation will be implemented. The project is not expected to generate long-term water quality impacts because the highway drainage system will maintain existing surface water patterns, and total regional vehicle-miles-traveled (VMT) will be the same with or without the project.

Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a floodplain, tsunami zone, beach, erosion-prone area, geologically hazardous

land, estuary, fresh water, or coastal waters - The setting of the project is not environmentally sensitive. The eastern portion of the project area is mostly urban, and the western portion of the project area is abandoned sugarcane fields that remain viable for agriculture.

Substantially affects scenic vistas and viewplanes identified in county or state plans or studies - The proposed project will not affect existing scenic viewplanes because the improvements will be at ground level along the existing highway alignment. There will be no structures that will rise substantially above grade.

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

6.2 NATIONAL ENVIRONMENTAL POLICY ACT

Unlike State law, a significant impact under NEPA is assessed in terms of an impact's "context" and "intensity". Context refers to the environment and the level or relative abundance of resources in the project area. Intensity refers to the specific impact, or how much of the resource(s) would be used or affected by the project. FHWA rendered a FONSI determination for the proposed project because, based on impact analyses described in Chapter 4, the "intensity" of the project's impacts, or its use of the resources in the study area, would be small in the "context" of the regional environment, or the relative abundance of resources in the study area.

CHAPTER SEVEN

References

CHAPTER 7 REFERENCES

Technical Reports Prepared for this Project

Austin, Tsutsumi & Associates, Inc., Traffic Assessment Report, Kaunualii Highway Widening, Lihue to Maluhia Road, Project No. 50DE-02-95, Kauai, Hawaii, July 1998 and May 2000.

B.D. Neal & Associates, Air Quality Study for the Proposed Improvements to Kaunualii Highway, Lihue to West of Maluhia Road, Kauai, Hawaii, January 2000.

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APPENDIX A

Agency and Public Scoping Comment Letters and Responses

Summaries of Public Information Meetings

March 2, 1999

January 13, 2000

May 25, 2000 Public Hearing

Sign-In Sheets

Informational Handout

Transcript of Oral Comments

September 18, 1998

Mr. Charlie Ice
Hydrologist
Water Resource Branch
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Ice:

Re: Improvements to Kaunualii Highway,
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

The Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigation/studies for the design of highway improvements for Kaunualii Highway. Our scope of work also includes preparing an environmental assessment.

The proposed project is approximately 7.5 miles long starting at Lihue Mill and extending to a point about half a mile beyond the junction of Maluhia Road. A map depicting the location of the project is shown on the enclosed map entitled "Improvements to Kaunualii Highway Lihue to West of Maluhia Road". Under this project, the present highway will be widened from a two lane to a four lane divided highway. In general, the new highway will follow the alignment of the existing highway.

The major construction activities include-

1. Clearing and grubbing of the highway right of way
2. Roadway excavation, embankment and grading
3. Construction of bridges and other drainage improvements
4. Construction of highway pavement and related improvements
5. Installation of highway lighting and traffic control systems

We ask that you advise us of any impact(s) that the project may have on the ground water resources in the vicinity of this project. We will also appreciate any information you can provide as to their location, capacity, etc. that would be meaningful

Mr. Charlie Ice
Improvements to Kaunualii Highway
September 18, 1998
Page 2 of 2

to include in the environmental assessment.

Your earliest attention and response will be appreciated. Should you require additional information about the project, please call us at 531-1676.

Sincerely,

Paran, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President

TC 26 Folder 595

REGINALD SUZUKA
VICE PRESIDENT



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 121
HONOLULU, HAWAII 96808

MICHAEL B. WILSON
DIRECTOR
ROBERT G. ORLANDO
DAVID A. BROWN
LARRY W. HARRIS
RICHARD H. COX
HERBERT H. RICHMOND, JR.
TIMOTHY E. JOHNS
DEPUTY DIRECTOR

September 30, 1998

Mr. Reginald Suzuka, Vice President
Park Engineering
567 S. King Street
Honolulu, Hawaii 96813

Dear Mr. Suzuka:

SUBJECT: Kaunualii Highway Improvements (Kauai), Project No. 50DE-02-95
Thank you for the opportunity to comment on this project at this early stage. Our comments related to water resources are marked below.

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available. feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas which are important for the maintenance of streams and the replenishment of aquifers.

- We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan, which is subject to regular updates.
- We recommend coordination with the Lead Division of the State Department of Land and Natural Resources to incorporate this project into the 20-year State Water Project Plan, which is subject to regular updates.
- We are concerned about the potential for ground or surface water depletion/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any remaining requirements related to water quality.
- A Well Construction Permit and a Pump Installation Permit from the CWRM would be required before ground water is developed as a source of supply for the project.
- The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the CWRM would be required prior to use of this source.
- Groundwater withdrawals from this project may affect streamflow. This may require an increase in streamflow supplementation.
- If the proposed project diverts additional water from streams or if new or modified stream diversions are planned, the project may need to obtain a stream diversion works permit and provision to amend the stream diversion flow standard for the affected stream(s).
- As the proposed project creates several streams and gulches, the project may need to obtain a stream channel alteration permit and a permit to amend the stream diversion flow standard for the affected stream(s).
- We recommend the stream care where the project may affect highly erodible slopes which drain into stream beds or adjacent to the project.
- OTHER:** We do not anticipate ground water impacts from this project. Further road cutting at the end of its term may cause erosion and stream bank impacts. If ground water is present, it is recommended that monitoring be conducted in such locations. It is recommended to install exposed temperature. Please notify this office if this occurs.

If there are any questions, please contact Charley Ice at 587-0251.

Sincerely,
Timothy E. Johns
TIMOTHY E. JOHNS
Deputy Director

Cliss

December 21, 1998

Mr. Rick Egged, Director
Office of State Planning
P.O. Box 2359
Honolulu, Hawaii 96804

Dear Mr. Egged:

Re: Coastal Zone Management Program
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

The State Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigation/studies for the design of highway improvements for Kaunualii Highway. As part of this assignment, we will be preparing an Environmental Assessment.

The project is approximately 7.5 miles long starting at the Lihue Mill and extending west to a point about a half mile beyond the Maluhia Road Junction. The enclosed map entitled "Improvements to Kaunualii Highway, Lihue to West of Maluhia Road" shows the extent of this project.

We hereby request that you advise us of any concern(s) that we should be aware of relative to the Coastal Zone Management Program. If you need more information, please contact us at 531-1676.

Your earliest response will be appreciated.

Sincerely,
Park En, Inc.
dba PARK ENGINEERING
Reginald Suzuka
Reginald Suzuka
Vice President

TC 26 Folder 595



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

OFFICE OF PLANNING

235 South Beretania Street, 6th Flr., Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

BENJAMIN J. CATELANO
DIRECTOR
REGINALD SUZUKA
DEPUTY DIRECTOR
DIRECTOR, OFFICE OF PLANNING

Tel: (808) 587-2646
Fax: (808) 587-2824

Ref. No. P-7868

December 24, 1998

Mr. Reginald Suzuka
Vice President
Park Engineering
567 South King Street, Suite 300
Honolulu, Hawaii 96813-3036

Dear Mr. Suzuka:

Subject: Improvements to Kaunualii Highway, Project No. 50DE-03-95

Insofar as the project is about improving an existing highway, our primary interest is the prevention or mitigation of polluted runoff and coastal water quality degradation that may result during and after construction. Therefore, we recommend that effective mitigation measures to combat polluted runoff be incorporated into the project design. In this regard, you may wish to consult our Coastal Nonpoint Pollution Control Management Plan which contains a number of management practices and related mitigation measures.

If you have any questions about this, please feel free to contact Steve Olive of our Coastal Zone Management Program at 587-2877.

Sincerely,

Bradley J. Mossman
Bradley J. Mossman
Director
Office of Planning

March 24, 1998

Mr. Dee Crowell
Director
Department of Planning
444 Rice Street
Lihue, Hawaii 96766

Dear Mr. Crowell:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preparation of Environmental Assessment

The State Department of Transportation has engaged our firm to conduct preliminary engineering investigations/studies for the design of highway improvements for Kaunualii Highway. This work also includes the preparation of an Environmental Assessment (EA). In accordance with the Guidebook of the Office of Environmental Quality Control on Environmental Review Process, we are hereby informing you about this project.

The proposed project is approximately 7.5 miles in length starting at the Lihue Hill and extending to a point about half a mile beyond the junction of Maluhia Road (See attached map). The project will replace the present two lane highway with a four lane divided highway. In general, the new highway will follow the alignment of the existing highway.

To help us with the preparation of the EA, we ask that you provide us with one copy each of the current Maui County Plan, the Community Plan, the Development Plan and the Zoning Map for the project area.

We also request and will appreciate any other information and/or assistance you can provide to facilitate our work on the EA.

Sincerely,

ParEn, Inc.
dba PAR ENGINEERING

R. J. Par

Reginald Suzuka
Vice President

TC 26 Folder 595

MARYANNE W. KUSAKA
MANAGER



DEE M. CROWELL
PLANNING DIRECTOR
JAN K. COSTA
DEPUTY PLANNING DIRECTOR
TELEPHONE (808) 241-4477
FAX (808) 241-4499

PLANNING DEPARTMENT

March 31, 1998

Reginald Suzuki
Park Engineering
Suite 300, Kawaihāo Plaza
567 South King St.
Honolulu, Hawaii 96813-3036

SUBJECT: Environmental Assessment for Kaunualii Highway
Improvements at Kauai, Hawaii

We are enclosing copies of the information which you requested which includes the following:


Kauai County General Plan (maps are included in the document)
400 scale zoning maps of Puhī and Lihue (zoning within the Urban Districts)

1,000 scale zoning map of the lands along the project area (zoning within the Agricultural District)

Please understand that most of the project area does not fall into our Development Plan areas. Also, the zoning maps are reflective of our Development Plans which means that the zoning maps are the Development Plan maps. It should be noted that the project falls into two Development Plan areas: Lihue and Koloa. Both plans have not been updated since 1977 and 1983 respectively.

Because we have limited copies of the Development plan texts, you may wish to visit our office and review the texts.

Should you have any questions, please feel free to contact Keith Nitte of my staff at 241-6677.


IAN K. COSTA
Deputy Planning Director

April 15, 1998

Mr. Cesar Portugal
Chief Engineer
Department of Public Works
4444 Rice Street
Lihue, Kauai, Hawaii 96766

Dear Mr. Portugal:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preliminary Engineering Study and Environmental Assessment

The State Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigations/studies for the design of highway improvements for Kaunualii Highway. The scope of our work also includes the preparation of an Environmental Assessment(EA). The purpose of this letter is to inform you about this project and to solicit any help that you can provide.

The proposed project is approximately 7.5 miles in length starting at the Lihue Mill and extending to a point about half a mile beyond the junction of Maluhia Road(See attached map). The project will replace the present two lane highway with a four lane divided highway. In general, the new highway will follow the alignment of the existing highway.

Among the information we are trying to compile are aerial contour maps of the Lihue/Koloa area. Do you have such maps in your possession? If so, can we obtain copies? If you do not have any maps, can you direct us to someone who does? We will be most appreciative of any assistance you can provide. We will also appreciate receiving any other information that may be relevant to and helpful to us in the preparation of the Environmental Assessment.

Your earliest response will be appreciated.

Sincerely,

PerEn, Inc.
dba PARK ENGINEERING


Reginald Suzuki
Vice President

TC 26 Folder 595

May 8, 1998

Mr. Cesar Portugal
Chief Engineer
Department of Public Works
4444 Rice Street
Lihue, Kauai, Hawaii 96766

Dear Mr. Portugal:

Subject: Design Impacts to Hoomana Road
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)

We are presently investigating two alignment alternatives for the new highway in the vicinity of Lihue Mill. Prints of these alternatives are enclosed. Alignment "A" shows the highway widening on the makai side of the existing highway. Alignment "A-1" shows the widening on the mauka side.

Alignment "A" will impact some of the facilities within Lihue Mill while Alignment "A-1" will impact Hoomana Road and the residents who live on this road. Because the project will impact AMFAC or the County, we are scheduling a meeting with representatives of AMFAC Sugar and the State Highways Division to discuss these alternatives and their impacts. Your presence at this meeting is requested.

We would like to schedule the meeting during the last week of June. A tentative meeting date has been set for Wednesday morning, July 1, 1998 at the State Highway District Office. The time will be set at a later date.

Your earliest response will be appreciated.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President

cc: DOT-Kauai, attn: Steve Morikawa

TC 26 Folder 595

August 17, 1998

Mr. Cesar Portugal
Chief Engineer
Department of Public Works
4444 Rice Street
Lihue, Hawaii 96766

Dear Mr. Portugal:

Re: Improvements to Kaunualii Highway &
Conceptual Designs for Hoomana Road
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

As you know, a meeting was held with representatives of your Department, Lihue Plantation (L.P.) and the State Highway Division on July 1, 1998. The items discussed are documented in Paren's memo of July 6, 1998. Subsequent to said meeting, Paren, Inc. engaged in further discussions with L.P. and the State on the design alternatives for Hoomana Road. The purpose of this letter is to advise and apprise you on the status of these discussions.

First, we wish to inform you that the State has reviewed all of the information on the impacts of Alignment "A" and Alignment "B". Based on this review, the State has decided to discard Alignment "A" from further consideration. As such, the designs for the highway improvements in the vicinity of Lihue Mill will be based on Alignment "B" which calls for widening the highway on the mauka side of the existing highway.

Second, L.P. had expressed several concerns relative to the realigned Hoomana Road as depicted on CONCEPTUAL PLAN "A-1" and the impact that it has on L.P.'s mill operations. In response to these concerns, the State and Paren, Inc. investigated/studied two additional design alternatives for Hoomana Road (Refer to the enclosed plans entitled CONCEPTUAL PLANS A-2 and A-3). Please note that these plans are still very preliminary and that a feasibility study must still be made. Please also note that a feasibility study is contingent upon the impacted parties agreeing to one of these plans, the parties being L.P., the Department of Public Works, the owner of parcel TMK:3-8-16:20, and all of the residents on Hoomana Road. The following describes

the features of each plan:

CONCEPTUAL PLAN A-2

1. The realigned Hoomana Road passes under the existing cane conveyor bridge. The grade for Hoomana Road at the bridge is controlled by the minimum vertical clearance required for L.P.'s trucks.
2. The existing ground supporting a portion of the cane conveyor system will be excavated and removed. Additional structural supports will therefore be required for this section.
3. The realigned road crosses an existing 40 feet wide electrical easement. The existing power pole(s) located within the realigned roadway must be relocated.
4. The major items of work that will affect L.P.'s use of the mill road are significantly less than PLAN A-1. For PLAN A-2, the major work will be (1) the roadway excavation in the vicinity of the mill road and (2) the construction of additional supports for the cane conveyor bridge (item 2 above).

CONCEPTUAL PLAN A-3

1. Because the intersection of Hoomana Road and Kaunualii Highway is located to the west of the existing cane conveyor bridge, Hoomana Road does not cross the cane conveyor bridge. Therefore, the work in items 2 and 3 above are not necessary if retaining walls are constructed.

2. The only major work that will affect the mill road is the roadway excavation in the vicinity of the mill road.

The following is a comparison of PLAN A-2 and PLAN A-3:

1. PLAN A-2

- a. The stopping sight distance is slightly more than PLAN A-3 (Refer to enclosed road profiles).

- b. The westbound acceleration lane is longer than PLAN A-3.
- c. The eastbound deceleration lane is longer than PLAN A-3.
- d. The disruption to hauling mill wastes (during the grinding season) can be avoided through proper coordination with L.P. This also applies to PLAN A-3.
- e. Temporary access (through the cane field) by the residents of Hoomana Road can be avoided through proper scheduling and coordination by the contractor. This also applies to PLAN A-3.

2. PLAN A-3

- a. The relocation of the existing power pole(s) can be avoided by constructing retaining walls.
- b. The construction of additional structural supports for the cane conveyor system can be avoided by constructing retaining walls.
- c. The length of time that the mill road must be closed (once construction starts) is less than PLAN A-2.
- d. Same as 1e above.
- e. Same as 1e above.

Your review and comments on these plans are requested. Your earliest response will be appreciated.

Sincerely,

Reginald Suzuka
Vice President
dba PARK ENGINEERING

cc: DOT-Kauai, attn: Steve Morikawa *Faxed*

TC 26 Folder 595

MARYANNE W. KUSAKA
MAYOR



CESAR C. PORTUGAL
COUNTY ENGINEER
TELEPHONE 241-5800

RUSSELL SUGAHO
ACTING DEPUTY COUNTY ENGINEER
TELEPHONE 241-8831

AN EQUAL OPPORTUNITY EMPLOYER
COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
4444 RICE STREET
MOKOEA BUILDING, SUITE 278
LIHUE, KAUAI, HAWAII 96766

PWB.187

August 27, 1998

Mr. Reginald Suzuka
Vice President
ParEn, Inc. dba Park Engineering
567 South King Street
Honolulu, Hawaii 96813

Dear Mr. Suzuka:


RE: IMPROVEMENTS TO KAUMUALII HIGHWAY

Reference is made to your letter dated August 17, 1998 which request our review and comments for the improvements to Kaumualii Highway and the conceptual realignment of Hoomana Road. We concur with you that impacted parties should agree with the plans. The Department of Public Works will provide review and recommendations to the County Council for the preferred alignment. The County Council is the legislative branch that authorizes the abandonment and disposal and acquisition of lands for roadways.

Both alignment A-2 and A-3 meet our roadway standards for a minor street with a design speed of 20 MPH. Street profile grade for alignment A-2 may be flatter due to its longer length. However, grades for both alignment should not be a problem if slopes are 12 percent or flatter.

The Department's preference is alignment A-2. Final selection and authorization requires County Council approval.

Very truly yours,


CESAR C. PORTUGAL
County Engineer

KK/cu

September 18, 1998

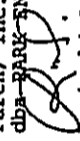
Mr. Cesar Portugal
Chief Engineer
Department of Public Works
4444 Rice Street
Lihue, Hawaii 96766

Dear Mr. Portugal:

Re: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

We hereby request your assistance in preparing the environmental assessment for this project. Specifically, we ask that you advise us of any impact(s) that the project may have on the Department's "wastewater treatment/disposal" and "solid waste collection/disposal" facilities. If there are impacts, we ask that you provide us with pertinent information that we can include in the assessment documents. Map, Plans, etc. would also be helpful.

Your earliest attention and response will be appreciated. Should you questions about this request, please call us at 531-1676.

Sincerely,
Paren, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President

TC 26 Folder 595

ARYANNE W. KUSAKA
MAYOR



CESAR C. PORTUGAL
COUNTY ENGINEER
TELEPHONE 241-6800

RUSSELL SUGANO
ACTING DEPUTY COUNTY ENGINEER
TELEPHONE 241-6831

AN EQUAL OPPORTUNITY EMPLOYER
COUNTY OF KAUAI

DEPARTMENT OF PUBLIC WORKS
MALUAH ROAD, SUITE 278
LIMUPE, KAUAI, HAWAII 96768

PW8.262

September 16, 1998

Mr. Reginald Suzuka
Vice President
ParEn, Inc. dba Park Engineering
567 S. King St., Suite 300
Honolulu, Hawaii 96813

Dear Mr. Suzuka:

RE: PRELIMINARY ENGINEERING STUDY
IMPROVEMENTS TO KAUMUALII HIGHWAY
LIHUE TO WEST OF MALUHIA ROAD
PROJECT NO. 50DE-02-95

Reference is made to your letter dated August 26, 1998 with preliminary alignment plans for the captioned project. We are offering the following comments on the alignment plans.

1. We will be developing plans to improve Maluhia Road in the near future. Federal monies will be programmed in the financing of the improvement. We believe that the State and FHWA will require the County to widen pavement and shoulders to meet AASHO standards. Since the existing swamp mahogany trees are designated as exceptional and cannot be removed in accordance to the law, the County will need to develop a new northbound or southbound travelway. While no studies have been initiated it is probable that a new northbound travelway will be developed since an existing reservoir is located just west of Maluhia Road.

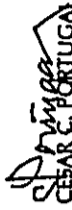
The development of the new Maluhia Road need to be coordinated with the Kaumualii Highway improvement. Plans for Kaumualii Highway improvements may need to be revised especially if construction timetable for Maluhia Road will precede Kaumualii Highway improvement.

Mr. Reginald Suzuka
ParEn, Inc. dba Park Engineering
September 16, 1998
Page 2

2. Nuhou Street intersection improvement should at least match the geometrics for those provide for Kalepa Road. Nuhou Street is planned to be a major traffic carrier for the Grove Farm Lihue-Puhi development. Nuhou Street is considered a major arterial.
3. We are recommending that a typical minor road intersection improvement as shown in conceptual plan H be developed for Nani Street at the Puhi Subdivision. The access will provide alternate circulation pattern for the residents in the subdivision.
4. We concur that the Hala Road intersection to Kaumualii Highway can be eliminated. However, the County Council need to approve the abandonment of the roadway.

Please contact Kenneth Kitabayashi at (808) 241-6622 if there are questions.

Very truly yours,


CESAR C. PORTUGAL
County Engineer

KK/cu

MARYANNE W. KUSAKA
MAYOR



CESAR C. PORTUGAL
COUNTY ENGINEER
TELEPHONE 241-6600

RUSSELL SUGANO
ACTING DEPUTY COUNTY ENGINEER
TELEPHONE 241-6600

AN EQUAL OPPORTUNITY EMPLOYER
COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
4444 RICE STREET
KOHOLA BUILDING, SUITE 275
LILUOUE, HAWAII 96766
September 28, 1998

September 23, 1998

Mr. Cesar Portugal
Chief Engineer
Department of Public Works
4444 Rice Street
Lilue, Hawaii 96766

Dear Mr. Portugal:

Re: Your Letter of September 16, 1998
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

Mr. Reginald Suzuka Vice President
Paren, Inc. dba Park Engineering
Kawaihiao Plaza, Suite 300
567 South King Street
Honolulu, Hawaii 96813-3036

Dear Mr. Suzuka:

Thank you for your comments on the preliminary alignment plans. We have forwarded a copy of your letter to our traffic consultant and the DOT-Kauai for their review.

It appears likely that the designs for Maluhia Road will affect the designs for the intersection at Kaunualii Highway. We therefore ask that you keep us closely advised of any design developments that may impact our project. If there's anything we can do to facilitate the coordination of the two projects, please feel free to contact us.

Sincerely,
Paren, Inc.
dba PARK ENGINEERING

[Signature]

Reginald Suzuka
Vice President

TC 26 Folder 595

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

This is in response to your request of September 18, 1998 for any impact that the project may have on the Department's wastewater treatment/disposal facilities.

The improvements to Kaunualii Highway will have no significant impact to the County's Wastewater System and Facilities. Our comments are:

1. At present, the Lihue Wastewater Treatment Plant located near Vidinha Stadium does not service the Puhii area. The wastewater system servicing Puhii is owned by Grove Farm Company.
2. There are no County sewer service lines along Kaunualii Highway from Lihue to Koloa (west of Maluhia Road).

If you have any questions, please contact Alfonso Afos of the Division of Wastewater Management at 241-6642.

Comments on the Solid Waste facilities will be forwarded separately.

Very truly yours,
[Signature]
CESAR PORTUGAL
County Engineer

AA
AUGUSTIN
cc: Troy Tanigawa

Maluhia Road Intersection
Improvements to Kaunualii Highway
October 28, 1998
Page 2 of 2

October 28, 1998

Mr. Cesar Portugal
Chief Engineer
Department of Public Works
4444 Rice Street
Lihue, Hawaii 96766

Dear Mr. Portugal:

Re: Maluhia Road Intersection
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

The Department of Transportation has just approved Phase I of this project and has authorized us to proceed with Phase II, the preliminary design investigation phase.


Your letter [PW8.262] of September 16, 1998 indicated that the County has not yet initiated the studies for the improvements to Maluhia Road. Since our work is presently proceeding as scheduled, it appears likely that State's project will precede that of the County's. The DOT has therefore asked that we initiate the work of coordinating the designs for the two projects. As the first step in this effort, we have developed two additional intersection plans, CONCEPTUAL PLANS D-5 and D-6, for Maluhia Road. PLAN D-5 depicts the widening of the highway on the makai side of the existing highway. PLAN D-6 shows the intersection for the widening on the mauka side. The number and location of the existing trees shown are only approximate and must be verified by field survey. The location of the new northbound lanes is also an approximation and one which the County will establish upon completing its engineering study.

You will notice that the plans depict the ultimate conditions for the intersection, eg. the condition with the future Maluhia Road "in-place". The obvious choice from the standpoint of minimizing impacts to the "tree tunnel" is CONCEPTUAL PLAN D-6. However, another environmental concern is the impact of the project on the existing wetlands along the mauka side of the highway. CONCEPTUAL PLAN D-5 will have less impact on the wetlands (than PLAN D-6).

We are transmitting two prints each of these plans for your review and comments. In reviewing these plans, please be mindful of the fact that the plans are only conceptual. Our present contract with the State calls for performing preliminary engineering studies and investigations only and does not include preparing construction documents. The final construction plans for the intersection will be prepared at a later date. If the State's project precedes the County's, the State will construct an interim intersection and the County will design/construct the ultimate road connection. The reverse will occur if the County's project precedes that of the State.

Your earliest response to the above request will be appreciated. Should you have questions or wish to discuss this matter, please contact us.

Sincerely,
Paren, Inc.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

cc: DOT-Kauai, attn: Steve Morikawa

TC 26 Folder 595

MARYANNE W. KUSAKA
MAYOR



AN EQUAL OPPORTUNITY EMPLOYER

COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
4444 RICE STREET
MOTONOA BUILDING, SUITE 275
LAWA'I, HAWAII 96766

November 9, 1998

Mr. Reginald Suzuka
Vice President
ParEn, Inc. dba Park Engineering
567 South King Street
Honolulu, Hawaii 96813

Dear Mr. Suzuka:

RE: MALUHIA ROAD INTERSECTION IMPROVEMENTS
TO KAUMUALII HIGHWAY

Reference is made to your letter dated October 28, 1998 which request our comments on conceptual plan D-5 and D-6 for the improvements at the Kaumualii Highway/Maluhia Road Intersection.

We prefer conceptual plan D-6 which show the intersection improvement to be mauka of the existing highway. This alternative preserves the existing swamp mahogany trees which have been designated as exceptional trees. Enclosed is a copy of Article 5, Preservation of Exceptional Tree, in the Kauai Code of Ordinances. The removal of exceptional trees for the project requires approval from the Kauai County Council.

We are not sure if the construction schedule to improve Maluhia Road will occur before the State's improvement to Kaumualii Highway. However, in the event Kaumualii Highway is improved earlier, we are requesting that the State consider making all or most of the improvements to Kaumualii Highway to accommodate the future Maluhia Road. These improvements could include the northbound and southbound acceleration and merging lanes along Kaumualii Highway that is shown by the conceptual plans.

CESAR C. PORTUGAL
COUNTY ENGINEER
TELEPHONE 241-6800

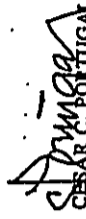
RUSSELL SUDANO
ACTING DEPUTY COUNTY ENGINEER
TELEPHONE 241-6831

PW11.008

Mr. Reginald Suzuka
Vice President
ParEn, Inc. dba Park Engineering
November 9, 1998
Page 2

Please contact Kenneth Kiyabayashi at 241-6622 if there are questions.

Very truly yours,


CESAR C. PORTUGAL
County Engineer

KK/cu

attachment

DEPARTMENT OF WATER

County of Kauai

"Water has no Substitute - Conserve It!"

April 16, 1998

Mr. Reginald Suzuka, Vice President
ParEn, Inc.
567 S. King Street Suite 300
Honolulu, HI 96813

Dear Mr. Suzuka:

SUBJECT: Improvements to Kaunualii Highway, Lihue to west of Maluhia Road
(Koloa) - Preliminary Engineering Study and Environmental
Assessment (EA), Kauai

The Department of Water (DOW) has transmission mains located in and along certain portions of Kaunualii Highway from Lihue to just west of Puhi. Our transmission mains are located within certain portions of your proposed project.

Attached is a copy of a portion of the map you sent delineating the project area. Crosshatched on this map are the areas where the DOW has existing waterlines along Kaunualii Highway.

The DOW would like to review, comment and approval all construction drawings that contain any of the Department's water system facilities and/or where construction may be done on or around our water system facilities to determine whether or not our facilities will be impacted.

If you have any questions, please call Edward Doi at (808) 245-5417.

Sincerely,



Ernest Y. W. Lau
Manager and Chief Engineer

ED:ls
Attachment
CA:\M\ezuka.doc

4118 Puu Lake Street, Lihue, Kauai, Hawaii or P. O. Box 1704, Lihue, HI 96746-3704 -
Phone No. (808) 245-5400 - Administration FAX No. (808) 244-4421 - Engineering/Fiscal/Shop FAX No. (808) 245-5413

March 24, 1998

Mr. Ernest Lau
Manager and Chief Engineer
Department of Water
4398 Pualoke Street
Lihue, Kauai, Hawaii 96766

Dear Mr. Lau:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preliminary Engineering Study and Environmental Assessment

The State Department of Transportation has engaged our firm to conduct preliminary engineering investigations/studies for the design of highway improvements for Kaunualii Highway. This work also includes the preparation of an Environmental Assessment (EA).

The proposed project is approximately 7.5 miles in length starting at the Lihue Hill and extending to a point about half a mile beyond the junction of Maluhia Road (See attached map). The project will replace the present two lane highway with a four lane divided highway. In general, the new highway will follow the alignment of the existing highway.

Please let us know if any of your existing water system facilities may be impacted by this project. If so, please provide us with information about such facilities.

Your earliest response and your cooperation will be appreciated.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING



Reginald Suzuka
Vice President

TC 26 Folder 595

September 9, 1998

Mr. Ernest Y.W. Lau
Manager & Chief Engineer
Department of Water
4398 Pua Loke Street
Lihue, Hawaii 96766-5706

Dear Mr. Lau:

Re: Improvements to Kaunualii Highway,
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

In your letter of April 16, 1998, you informed us about the Department's existing transmission mains in the Lihue to Puhī area. We ask that you provide us with prints of the construction plans for these mains. We will gladly pay for any printing cost you may have.

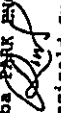
As part of our effort to keep you informed about the project, we are sending you a set of our latest plans dated August 13, 1998 for the project from Lihue to Puhī (sheets 1 to 3 and 18 to 25). You will notice that the plans for the portion between Lihue Hill to Nawiliwili Road are based on ALIGNMENT "B" (the alignment for widening the highway on the mauka side). There are, unfortunately, some problems associated with this alignment.

One problem (with ALIGNMENT "B") is that the residents of Hoomana Road will not have access to their homes. This is because the existing Hoomana Road bridge must be abandoned. At the present time, we are investigating the possible realignment of Hoomana Road. The realignment may affect an existing 18" pipeline believed to be located along Hoomana Road. The people at Lihue Plantation have said the line does not belong to them. They believe it belongs to the Department of Water. Please confirm this for us. If it does belong to DOW, please provide us with prints of the construction plans for this line also.

Your earliest response to the above requests will be appreciated.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

TC 26 Folder 595

April 20, 1998

Mr. Ernest Lau
Manager and Chief Engineer
Department of Water
4398 PuaLoke Street
Lihue, Kauai, Hawaii 96766

Dear Mr. Lau:

Attention: Mr. Edward Doi


Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preliminary Engineering Study and Environmental
Assessment

Thank you for your letter of April 16, 1998 and the information provided in your letter about your water system.

We are presently completing the topographic survey work for the area shown on the enclosed map. Upon the completion of this work, we will prepare a preliminary highway alignment plan for this portion of the project. A set of this plan will be sent to you hopefully sometime in May.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

TC 26 Folder 595

DEPARTMENT OF WATER
County of Kauai

"Water has no Substitutes - Conserve It!"

APR 21 11 31 AM '98

April 16, 1998

Mr. Steve Kyono, Kauai District Chief
Dept. of Transportation - Highways Division
3060 Ewa Street
Lihue, HI 96766

Dear Mr. Kyono:

SUBJECT: Widening of Kaunualii Highway in the Vicinity of the Department of Water's
Liftus Facility

We have obtained from the County Public Works Department a preliminary map detailing the old Newillwill Road right-of-way, in which the Department of Water has an interest. The map shows that the right-of-way for Kaunualii Highway at the old Newillwill Road intersection will be widened in the southern direction. A portion of the preliminary map is attached for your reference.

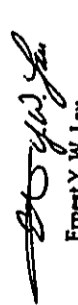
We are concerned that the proposed widening of Kaunualii Highway in the vicinity of the Department's Liftus facility will conflict with our present and planned facility operations. As shown on the attached map, if the highway right-of-way is extended along the proposed line, it will cut through a portion of our facility and possibly intersect the Garage.

The Department has plans to make improvements to our Liftus facility, including completely restructuring the Garage in its present location. We are in the final stages of design for the facility improvements, and plan to begin construction in five to six months. Any plans to extend the highway right-of-way into our facility would greatly impact our facility improvement plans.

Please inform us if the Highways Division's plans to widen Kaunualii Highway will affect the Department of Water's plans.

If you have any questions, please call William Eddy at 245-5412. Thank you for your assistance in this matter.

Sincerely,


Ernest Y. W. Lau
Manager and Chief Engineer

WE:ls
Attachment
C:\Alyp\yoc.doc

Phone No. (808) 245-5400 - Administration FAX No. (808) 244-4438 - Engineering/Fiscal/Shop FAX No. (808) 245-5813

HWY-KE 4.980378

April 27, 1998

Mr. Ernest Y. W. Lau
Manager-Chief Engineer
Department of Water
County of Kauai
4398 Pua Loke Street
Lihue, Hawaii 96766

Dear Mr. Lau:

Subject:

Kaunualii Highway Improvements, Lihue to West of Maluhia Road. (Kaunualii Highway Widening to 4-Lanes)
Project No. 50DE-02-95

This is in response to your letter dated April 16, 1998, regarding widening of Kaunualii Highway in the vicinity of the Department of Water baseyard in Lihue.

A copy of your letter (with the map), has been forwarded to ParEn Inc., the DOT planning consultant for the highway widening project.

ParEn Inc. is developing alignment alternatives for the widening project, and in the vicinity of the DOW baseyard in Lihue, ParEn Inc. will be assessing both makai and mauka alignment alternatives for widening of Kaunualii Highway.

We have requested ParEn Inc. to consider your Department's facilities in assessing the various highway alignments. Until ParEn Inc. completes the alignment alternatives study, we cannot confirm to you whether your garage/storage facility, if constructed where shown on the map, will be impacted by the highway widening project.

Besides the DOW facilities, ParEn, in assessing feasible and reasonable alternatives, will be considering impacts to the Lihue Plantation mill buildings, cane flume, and Hoomama Road and Hoomama Road Bridge.

Mr. Ernest Y. W. Lau
Page 2
April 27, 1998

HWY-KE 4.980378

As soon as we are able to, we will provide you with more concrete information regarding the alignment alternatives in the vicinity of the DQW baseyard.

If you have any questions, please call Steve Morikawa at 274-3118.

Sincerely,



STEVEN KYONO, P.E.
District Engineer

SM:cs
cc: ParEn Inc.
Attn: Mr. Reg Suzuki

DEPARTMENT OF WATER

County of Kauai

"Water has no Substitute -- Conserve It!"

May 12, 1998

Mr. Steven Kyono, District Engineer
Dept of Transportation, Highways Division
3060 Ewa Street, Room 205
Lihue, HI 96766

Dear Mr. Kyono:

SUBJECT: Kaunualii Highway Improvements, Lihue to west of Maluhia Road,
Project No. 50DE-02-95

Thank you for your letters of April 27 and May 1, 1998 regarding the highway widening in the vicinity of the Department of Water's facility in Lihue. It is understood that the new Kaunualii Highway right-of-way may encroach into our property if a new mekal alignment is selected. It is also understood that the final alignment has not been determined.

In your May 1, 1998 letter, you stated that should we reconstruct our Garage building in its present location, the State may consider constructing a retaining wall or increase the ground slope to avoid encroachment into our property. Based upon these considerations, we will continue with our plans to reconstruct the Garage building in its present location.

We tentatively plan to advertise for bids on our building reconstruction and site improvement project mid-June, and begin construction in October, 1998. Unless we are advised by your agency that the highway widening will definitely impact the Garage building, we will continue with schedule and building plans.

Thank you for your cooperation on these matters. If you have any questions, please call William Eddy at 245-5412.

Sincerely,



Ernest Y. W. Lau
Manager and Chief Engineer

WE:ls
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Mr. Ernest Y. W. Lau
Page 2
May 1, 1998

HWY-KE 4.980406

HWY-KE 4.980406

May 1, 1998

Mr. Ernest Y. W. Lau
Manager-Chief Engineer
Department of Water
County of Kauai
4398 Pua Loke Street
Lihue, Hawaii 96766

Dear Mr. Lau:

Subject: Kaunualii Highway Improvements, Lihue to West of Maluhia Road. (Kaunualii Highway Widening to 4-Lanes)
Project No. 50DE-02-95

Enclosed is a copy of ParEn Inc.'s comments regarding possible impacts to your facilities if a makai alignment is selected for the widening of Kaunualii Highway.

If the makai alignment is selected, it appears that the top of the slope (2:1) for the roadway section will encroach into DOW property. (Refer to the attached cross-section sketch). If your garage/storage facility is constructed per your map, a retaining wall may have to be constructed in conjunction with our project. The adjacent cemetery parcel will be impacted in a similar manner as the DOW parcel and we may have to construct a continuous retaining wall along the makai side of the highway. It may also be possible for us to increase the ground slope to avoid the encroachments into the DOW and cemetery parcels.

Per ParEn Inc.'s letter, a mauka alignment will not impact the makai side of the highway and your facilities and the cemetery parcel will not be affected. However, as mentioned in our April 27, 1998 letter to you, there are other considerations that have to be investigated before we select a final alignment.

We will keep you informed as to the progress of our alignment studies and if you have any questions, please contact Steve Morikawa or Ramon Acob at 274-3118.

Sincerely,

STEVEN KYONO, P.E.
District Engineer

SM:cs
Encl.

cc: ✓ ParEn Inc. (w/o encl)
Attn: Mr. Reg Suzuki

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MARYANNE W. KUSAKA
MAYOR



VIRGINIA M. KAPALI
TRANSPORTATION DIRECTOR

COUNTY OF KAUAI
TRANSPORTATION AGENCY

MEMORANDUM

TO: Steve Kyono
DOT - Kauai

FROM: Reg Suzuka

DATE: April 27, 1998

Subject: Kaunualii Highway Improvements- MM 0.0 to 7.5
New Department of Water Supply Garage/Storage Facility

This is in response to your memo of April 24, 1998 concerning the Department of Water Supply's (DWS) letter dated April 16, 1998.

The DWS's parcel is in an area where we are considering two highway alignments, one on the makai side of the existing highway and one on the mauka side. We can only make general comments at this time because our topographic survey work is on-going in this area and the alignments/designs are still preliminary. Our comments are as follows:

1. The excavation/grading work for the makai side alignment will encroach into the area of the proposed garage/storage facility as well as along the frontage area of Hala Road. The amount of encroachment will depend on the final vertical alignment and the maximum "cut-slope" in this area.

A rough estimate of the encroachment was made from as-built cross sectional plans of the TERRITORIAL HIGHWAY DEPARTMENT, "HAWAII PROJECT NO. 24-A, U.S. WORKS PROGRAM GRADE CROSSING PROJECT NO. W.P.G.S. 24-A". The profile of the existing ground was approximated by extrapolation and by using 5 foot aerial contour map information. Refer to attached cross sections.

The mauka side alignment should have little or no impact on the proposed DOW facility.

2. We have estimated the existing ground at the proposed garage/storage site to be between 20 and 25 feet higher than Kaunualii Highway. We can reduce or eliminate the above-mentioned encroachment by constructing retaining walls or by using steeper stabilized slopes. This will, of course, add additional cost to the project.

Please call if you have questions or wish to discuss any of the above.

TC #26 FOLDER #595

October 5, 1998

Mr. Reginald Suzuka
Vice President
Park Engineering
567 South King Street Suite 300
Honolulu, Hawaii 96813

RE: Information on County of Kauai - The Kauai's Bus System

Dear Mr. Suzuka:

In response to your inquiry about Kauai's public transportation system and the paratransit services (aka, ADA, Handivan, Senior Citizen bus), we have enclosed for your information:

- Historical Briefing
- Copy of the FY 97 CTA Annual Report
- CTA Agency Brochure
- Executive Summary from KAKU Associates
- Inventory of Vehicle Fleet
- Bus Schedules

In our day to day operations, an average of 28 vehicles are used to service 45 public runs and an average of 52 paratransit runs with two shifts from 4:00 am to 9:00 pm. Monday through Friday and a modified schedule for Saturday. We are closed on Sundays and all County holidays.

We appreciate your inquiry in preparation for your project Environmental Assessment. If we could be of any further assistance, please contact me at 241-6410.

Sincerely,

(Ms.) Virginia M. Kapali
Transportation Director

THE KAUAI BUS

4396 Rice Street, Suite 104 • Lihou, HI 96766 • Telephone: 241-6410 Fax: 241-6417

April 16, 1998

Ms. Doty Bekeart
AMFAC Sugar
Lihue Plantation
2970 Kele
Lihue, Kauai, Hawaii 96766

Dear Ms. Bekeart:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preliminary Engineering Study

As you know, the Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigations/studies for the design of highway improvements for Kaunualii Highway.

The proposed project is approximately 7.5 miles in length starting at the Lihue Mill and extending to a point about half a mile beyond the junction of Maluhia Road (See attached map). The project will replace the present two lane highway with a four lane divided highway. In general, the new highway will follow the alignment of the existing highway.


Our work will be greatly facilitated if we had aerial contour maps of the Lihue/Koloa area in which our project lies. We are hoping that you may have such maps in your possession. If so, can you provide us with copies? We are willing to pay for the cost of the prints including mailing. If you do not have any maps, can you direct us to someone who does? We will be most appreciative of your assistance in this matter.

As part of our work, we will also be preparing an environmental assessment. If you should have environmental concerns and/or information that we should know about, we will appreciate you making them known to us.

Your earliest response to the above will be appreciated.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING


Reginald Suzuki
Vice President

TC 26 Folder 595

May 8, 1998

Ms. Doty Bekeart
AMFAC Sugar
Lihue Plantation
2970 Kele
Lihue, Kauai, Hawaii 96766

Dear Ms. Bekeart:

Subject: Design Impacts to Lihue Mill
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)

We are presently investigating two alignment alternatives for the new highway in the vicinity of Lihue Mill. Prints of these alternatives are enclosed. Alignment "A" shows the highway widening on the makai side of the existing highway. Alignment "A-1" shows the widening on the mauka side.

Alignment "A" will impact some of the facilities within Lihue Mill while Alignment "A-1" will impact Hoomana Road and the residents who live on this road. Because the project will impact AMFAC or the County, we are scheduling a meeting with representative(s) of the Department of Public Works and the State Highways Division to discuss these alternatives and their impacts. Your presence at this meeting is requested.

As I mentioned in our telephone conversation, I will try to schedule the meeting for the last week of June. Since you indicated Tuesdays are not good (for you), I have tentatively scheduled the meeting for Wednesday morning, July 1, 1998 at the State Highway District Office. I will set the time when I confirm the meeting date with the Department of Public Works.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING


Reginald Suzuki
Vice President

cc: DOT-Kauai, attn: Steve Morikawa

TC 26 Folder 595



AMFAC LAND COMPANY, LTD.
2970 Kele Street
Lihue, HI 96766

Facsimile

Date: July 9, 1998

To: Reggie Suzuki, Park Engineering

Fax: 808 536-5996

From: Dottie Bekteart

Phone: (808) 245-7887

Fax: (808) 246-9549

Subject: Widening of Kaunualii Highway

Remarks:

Page(s): 2

Here are comments in response to your memorandum summarizing our meeting of July 1 from Lyle Tabata, present plantation manager and former manager of the mill. Please give me a call if there is anything you would like to discuss.

Amfac Sugar Kauai
2970 Kele Street
Lihue, Hawaii 96766

To: Dottie Bekteart

From: Lyle Tabata

Re: Park Engineering Memo of July 6, 1998 Kaunualii Highway Improvements

July 8, 1998

In response to the Park Engineering Conceptual plans A and A-1, I have prepared the following comments.

Plan A: There are several items that need further addressing. Item b, reconstruction of the cane conveyor lower structure is not the main obstacle item faced. The headshaft will have to be moved towards the mill and will then require the extension of the conveyor belt. In my estimate looking at the layout drawings, a considerable length. If this were to happen the drive would have to be re-engineered for the extra capacity required, the take-up tower for belt tensioning will need engineering, the spline of the horizontal curves will have to be re-examined, and finally if lengthening of the belt is required the age of the present belt a splice would not be sufficient so total replacement would be necessary. This would be over 3000 feet of conveyor belt. I estimate maybe \$500K would cover the work required. Item c, removal and reconstruction of the mill bagasse storage building. This also has a conveyor system installed inside of the building that would make redesign very complicated. To cut and splice a section of the belt at the age of our belts is not feasible. We would look to replace the entire belt as the cane conveyor belt at a considerable cost. I do not have the total length available at this time.

Plan A-1 This seems to require a minimal modification of our operational equipment of the two plans. Item d, is not and will not be an option while we are operating our grinding season. We need full time access to haul our mill mud press and boiler ash from our waste handling systems hourly. Via truck this material to land fill sites on the farm for disposal. The exact yardage per day can be calculated by establishing a counting procedure of truck loads per day now. We do not want to use public highway because of the variable stages of wetness the ash and mud press will hold. Sometimes the mud is so wet it flows all over the road. We do not want this to happen on a public highway. Our truck tailgates too do not seal very well and adds to this problem.

I do not think that the Hoomana road residents who are not plantation people would like to use our road, especially during rainy periods. The under sides of their cars will turn to wrecks. The acid of rotten cane juice mixed with the water is a deadly combination. I do not use my own personal car on cane roads if I can help it.

Lastly the road crossings that the state will limit us to would be totally dependent of whether we would still be farming the area or not. This is on the Grove farm land that I presume they are talking about. So this may or not be an issue. We would however like to propose stop lights be placed at these key crossings to help insure safety and prompt continued travel of our units. As I see it there may be only two crossings required. One at the intersection of Brewer Chemical and Kauai Nursery and Haiku 15, then the other at the bottom of the Haiku airstrip above the New Humane Society and top of Haiku 22. It may be the right thing to do for all parties for insured safety.

Confidential: This fax is intended only for the person to whom it is addressed, and may contain a confidential economy-client communication or other confidential information. If you are not the intended recipient or an agent delivering it to the intended recipient, then you have received this fax in error, and any review, distribution or copying of this fax is strictly prohibited. If you receive this fax in error, please telephone us immediately, and return this fax to us by mail.

July 9, 1998

Mr. Lyle Tabata, Manager
Amfac Sugar Kauai
2970 Kele Street
Lihue, Hawaii 96766

Dear Mr. Tabata

Attention: Dottie Bekeart

Rc: Park Engineering Memo of July 6, 1998
Improvements to Kaunualii Highway &
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

Thank you for your memo of July 8, 1998 relative to the items discussed at our meeting on July 1, 1998. Your memo addresses and clarifies a number of questions we had concerning Plan A and Plan A-1. The information you provided will be helpful in making our assessment of the impacts of the two alternatives.

We will be transmitting your memo to the State Highways Division with a copy of this letter. We look forward to working with you in the future on this project.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING


Reginald Suzuki
Vice President

cc: DOT-Kauai, attn: Steve Morikawa
w/enclosure

TC 26 Folder 595

August 17, 1998

Mr. Lyle Tabata, Manager
Amfac Sugar Kauai
2970 Kele Street
Lihue, Hawaii 96766

Dear Mr. Tabata:

Re: Improvements to Kaunualii Highway &
Conceptual Designs for Hoomana Road
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

This is in further response to the concerns raised in your memo of July 8, 1998 to Dottie Bekeart. First and foremost, we wish to inform you that the State has reviewed all of the information on the impacts of Alignment "A" and Alignment "B". Based on this review, the State has decided to discard Alignment "A" from further consideration. As such, the designs for the highway improvements in the vicinity of Lihue Mill will be based on Alignment "B" which calls for widening the highway on the mauka side of the existing highway.

In response to your comments on CONCEPTUAL PLAN "A-1", the State and Paren, Inc. have investigated/studied two additional design alternatives for Hoomana Road (Refer to the enclosed design entitled CONCEPTUAL PLANS A-2 and A-3). Please note that these plans are still very preliminary and that a feasibility study must still be made. The study is contingent upon all impacted parties agreeing to one of these plans, the parties being Lihue Plantation (L.P.), the Department of Public Works, the owner of parcel TMK:3-8-16:20, and all of the residents on Hoomana Road. The following describes the features of each plan:

CONCEPTUAL PLAN A-2

1. The realigned Hoomana Road passes under the existing cane conveyor bridge. The grade for Hoomana Road at the bridge is controlled by the minimum vertical clearance

Improvements to Kaunualii Highway &
Conceptual Designs for Hoomana Road
August 17, 1998
Page 3 of 3

coordination with L.P. This also applies to PLAN A-3.

- e. Temporary access (through the cane field) by the residents of Hoomana Road can be avoided through proper scheduling and coordination by the contractor. This also applies to PLAN A-3.
2. PLAN A-3
- a. The relocation of the existing power pole(s) can be avoided by constructing retaining walls.
 - b. The construction of additional structural supports for the cane conveyor system can be avoided by constructing retaining walls.
 - c. The length of time that the mill road must be closed (once construction starts) is less than PLAN A-2.
 - d. Same as 1d above.
 - e. Same as 1e above.

Your review and comments on these plans are requested. Your earliest response will be appreciated.

Sincerely,

Paren, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President

cc: DOT-Kauai, attn: Steve Morikawa *fixed*

TC 26 Folder 595

Improvements to Kaunualii Highway &
Conceptual Designs for Hoomana Road
August 17, 1998
Page 2 of 3

required for L.P.'s trucks.

2. The existing ground supporting a portion of the cane conveyor system will be excavated and removed. Additional structural supports will therefore be required for this section.
3. The realigned road crosses an existing 40 feet wide electrical easement. The existing power pole(s) located within the realigned roadway must be relocated.
4. The major items of work that will affect L.P.'s use of the mill road are significantly less than PLAN A-1. For PLAN A-2, the major work will be (1) the roadway excavation in the vicinity of the mill road and (2) the construction of additional supports for the cane conveyor bridge (item 2 above).

CONCEPTUAL PLAN A-3

1. Because the intersection of Hoomana Road and Kaunualii Highway is located to the west of the existing cane conveyor bridge, Hoomana Road does not cross the cane conveyor bridge. Therefore, the work in items 2 and 3 above are not necessary (This is assuming retaining walls will be constructed).

2. The only major work that will affect the mill road is the roadway excavation in the vicinity of the mill road.

The following is a comparison of PLAN A-2 and PLAN A-3:

1. PLAN A-2
 - a. The stopping sight distance is slightly more than PLAN A-3.
 - b. The westbound acceleration lane is longer than PLAN A-3.
 - c. The eastbound deceleration lane is longer than PLAN A-3.
 - d. The disruption to hauling mill wastes (during the grinding season) can be avoided through proper



Amfac Land Company, Limited • Kauai Division

2970 Kele Street • Lihue, Kauai, Hawaii 96766

September 8, 1998

Reggie Suzuka
ParEn, Inc.
587 S. King Street, Suite 300
Honolulu, HI 96813-30366

Re: Improvements to Kaunualii Highway and conceptual designs for Hoomana Road,
Project No. 50DE-02-96

Dear Mr. Suzuka:

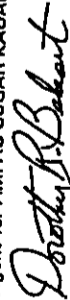
Thank you for your letter of August 17. We are glad that you have decided on an alignment that will add the new lanes in the vicinity of the Lihue Mill mauka of Kaunualii Highway.

We have reviewed Conceptual Plans A-2 and A-3. We would prefer A-3 for two reasons: 1) It would not interfere with the conveyor bridge, and 2) it would minimize the amount of time that the road to the Mill would be closed. However, please be advised that if an alternate route for our Mill traffic is not available during construction, we would require that the construction be done when the Mill is not operating. This would typically be during the winter months; the specific shut-down time differs from year to year.

As to the concerns I expressed regarding the old Hoomana Bridge, we have determined that this is not a significant problem, since the only traffic affected is moving large machinery and equipment. We now are required to have a controlled crossing using police; this would not change with a four-lane highway.

Thank you for the opportunity to review your proposals. Please feel free to call me at 245-7887 if there is anything you would like to discuss.

Very truly yours,
AMFAC LAND COMPANY, LTD.,
Agent for AMFAC SUGAR KAUAI


Dorothy R. Gekart
Land Manager

c: Lyle Tabata.

Telephone: 808-245-8786 • Facsimile: 808-246-9549

HWY-KE 4.980688

July 10, 1998

Mr. Angel Madrid
Amfac Sugar Kauai
Lihue Plantation Co., Ltd.
2970 Kele Road
Lihue, Hawaii 96766

Dear Mr. Madrid:

Subject: Kaunualii Highway Improvements, M/M 0.00 to 7.5
Project No. 50DE-02-95

Enclosed, for review, is one set of PRELIMINARY alignment plans for the project.

Prior to finalizing the alignments, we are requesting LP Co.'s review/comment on the plans, specifically, with regards to identifying existing cane haul road crossing Kaunualii Highway that could be eliminated. For increased public safety, wherever possible, we would like to eliminate existing cane haul road crossings if they are not absolutely required for your operations.

Please mark the plans with your comments, and return the marked set to this office. We will forward your comments, and the plan set, to the DOT consultant, ParEn, Inc.

Your input regarding this matter is important and if you have any questions, please call Steve Morikawa at 274-3118.

Sincerely,



STEVEN KYONO, P.E.
District Engineer

SM:cs
Encl.

cc: ParEn, Inc. (w/o enclosures)



Amfac Land Company, Limited • Kauai Division

2870 Kele Street • Lihue, Kauai, Hawaii 96786

September 29, 1998

Steve Kyono
District Engineer
3080 Ewa Street, Room 205
Lihue, HI 96786

Re: Kaunualii Highway Improvements
Project No. 80DE-02-95

Dear Mr. Kyono:

This is in response to your letter dated July 10 to Angel Madrid requesting Amfac's input on cane haul crossings of Kaunualii Highway. Enclosed is a plantation field map showing Kaunualii Highway with the five cane haul intersections marked. Crossings 1, 2 and 3 are one-way crossings for hauling cane to mill. Numbers 4 and 5 are not crossings but are intensively-used interactions that should be accounted for in the design of the highway. It would decrease the efficiency and increase the sugar plantation's operating costs if any of these interactions were to be eliminated. Therefore, we ask that they be retained in the development of the plans to widen Kaunualii Highway.

All of the roads except no. 4 are on land owned by Grove Farm. Therefore, we suggest that Grove Farm be consulted for their input, if you have not done so already.

Thank you for requesting our input. These comments reflect current patterns. Any number of changes could occur between now and the implementation of the plans to widen Kaunualii Highway. I can be reached at 245-7887 should you need anything further.

Very truly yours,
AMFAC LAND COMPANY, LTD.,
Agent for AMFAC SUGAR KAUAI

Dorothy K. Bekeart
Land Manager

c: Lyle Tabata

Telephone: 808-245-8786 • Facsimile: 808-245-9549

April 16, 1998

Mr. Alan Smith
Grove Farm
3-1850 Kaunualii Highway
Lihue, Kauai, Hawaii 96786

Dear Mr. Smith:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preliminary Engineering Study

As you know, the Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigations/studies for the design of highway improvements for Kaunualii Highway.

The proposed project is approximately 7.5 miles in length starting at the Lihue Mill and extending to a point about half a mile beyond the junction of Maluhia Road (See attached map). The project will replace the present two lane highway with a four lane divided highway. In general, the new highway will follow the alignment of the existing highway.

Our work will be greatly facilitated if we had aerial contour maps of the Lihue/Koloa area in which our project lies. We are hoping that you may have such maps in your possession. If so, can you provide us with copies? We are willing to pay for the cost of the prints including mailing. If you do not have any (maps), can you direct us to someone who does? We will be most appreciative of your assistance in this matter.

As part of our work, we will also be preparing an environmental assessment. If you should have environmental concerns and/or information that we should know about, we will appreciate you making them known to us.

Your earliest response to the above will be appreciated.

Sincerely,
ParEn, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President

TC 26 Folder 595



Suite 203, Kihuna Road, P.O. Box 1850, Lihue, Hawaii 96766
Telephone (808) 531-1678 FAX (808) 536-5995

PAREN, INC. dba park engineering

September 23, 1998

Mr. Alan Smith
Grove Farm
3-1850 Kaunualii Highway
Lihue, Hawaii 96766

Dear Mr. Smith:

Re: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. SODE-02-95

We are presently gathering information to prepare an environment assessment for this project. We are hoping you have information such as average annual temperatures and rainfall and records of flood and hurricane damages. If you have information on earthquake damages, that information will be useful also.

Does Grove Farm record/keep such information? If so, can you provide the above information for the lands owned by Grove Farm in the vicinity of our project, eg. the area from Lihue to Kalahao?

Any information and/or assistance you can provide will be greatly appreciated.

Sincerely,

Paren, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President

TC 26 Folder 595

October 5, 1998

Mr. Alan Smith
Grove Farm
3-1850 Kaunualii Highway
Lihue, Hawaii 96766

Dear Mr. Smith:

Re: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. SODE-02-95

We have been contacting the various utility companies to provide them with updated information about our project. We have also been soliciting/requesting information to assist us in the planning and the designs for this project.

We understand that Grove Farm owns and operates the wastewater system for Puhi. Enclosed are the latest preliminary plans for the Puhi area (sheets 18, 19 and 20) showing the general alignment of the highway. Please advise us if any of your facilities lie within or are in close proximity of the project. If so, please provide us with construction plans of those facilities.

If you need additional information, please let us know. Your earliest response will be appreciated.

Sincerely,

Paren, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President

TC 26 Folder 595

October 7, 1998

Mr. Alan Smith
Grove Farm
3-1850 Kaunualii Highway
Lihue, Hawaii 96766

Dear Mr. Smith:

Re: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95


At the present time, there are a number of existing private roads that have access to Kaunualii Highway. When the State improves Kaunualii Highway to a four lane divided highway, the State will be imposing restrictions on access for public safety reasons. This means eliminating or restricting turning movements at some of the existing road intersections. To minimize adverse impacts to Grove Farm, we ask that you identify for us the existing accesses that are absolutely essential to your operation(s).

Enclosed is a map of the project which extends from Lihue to a point beyond Maluhia Road. Please indicate the information we are requesting on this map. If you have more suitable map(s) to show this information, please do so.

Your earliest response to this request will be appreciated.

Sincerely,

Parren, Inc.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

cc: DOT-Kauai, attn: Steve Morikawa

TC 26 Folder 595

October 26, 1998

Mr. Mike Furukawa
Vice President
Grove Farm
3-1850 Kaunualii Highway
Lihue, Hawaii 96766

Dear Mr. Furukawa:

Re: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95


Reference is made to Mr. Henry Morita's facsimile memo of October 23, 1998. Mr. Morita was good enough to provide us with some additional information via telephone but he was not able to provide much information about Grove Farm's future development plans. We will appreciate it if you would provide us with information on:

1. Future mauka extension of Nuhou Street into the Wilcox property [to serve Gaylord's, KKC and Island School].
2. Future development for the area between Village West and Nuhou Street.
3. Future shopping area west of Puhi Road
4. Future plans for the existing cane haul road currently used by Lihue Plantation Co. Refer to attached MAP "A" for location. What is Grove Farm's master plan as far as maintaining or removing this road?

Any maps and/or plans showing these kinds of information will be most helpful.

Sincerely,

Parren, Inc.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

TC 26 Folder 595

Grove Farm Properties, Inc.

November 3, 1998

Mr. Reginald Suzuka
Vice President
PartEn, Inc.
Suite 300, Kawalahaio Plaza
567 South King Street
Honolulu, HI 96813-3036

Dear Mr. Suzuka:

Subject: Improvements to Kaunuaui Highway; Lihue to West of Maluhia Road
(Koloa); Kauai Environmental Studies; Project No. 50DE-02-95

Reference is made to your October 26, 1998 letter on the subject matter. Following are responses to the four items mentioned in your letter.

1. The future extension of Nuhou Street into the Wilcox property would be determined by the mauka property owners, Wilcox Trust, Kauai Community College and Island School. Grove Farm is currently constructing the Nuhou Street-Kaunuaui Highway Improvements project. During the project's planning the owners were contacted as to their interest in a cross intersection. However, the timing was too early for them. It would make sense that the extension into the Wilcox property is made when Kaunuaui gets widened. I would suggest contacting the owners directly on their intentions. Wilcox Trust - Fred Atkins, 245-3608; KCC - Gary Nikka, 245-8230; Island School - David Pratt, 246-0233.
2. Development of the area between Village West and Nuhou Street, zoned commercial, would be dictated by market forces. The parcel would have access off Nuhou when that project is completed early next year. The parcel could be sold as bulk or finished lots but the timing is uncertain.
3. Regarding the future shopping area west of Puhi Road, a small plaza-type development at the corner of Kaunuaui and Puhi Road, with an office/retail mix, is planned. Construction should begin next year. The former Fisherman's Galley restaurant space is available for leasing. A restaurant or retail use would seem to be appropriate. Heading further west, the Stigmeier and Grove Farm office buildings will remain in those uses for the foreseeable future.
4. In regards to the cane haul road in question, the portion makai of Kaunuaui, owned by Grove Farm, is located in the commercial area described in 2 above. It is no longer a through road and is not part of the master plan. When the commercial parcel gets developed or sold the cane haul road will be eliminated. The portion

A subsidiary of



P.O. Box 2069 Puhi Rural Branch Lihue, Hawaii 96765-7069
Phone (808) 245-3878 FAX (808) 246-9470

Mr. Reginald Suzuka
November 2, 1998
Page 2

mauka of the highway is owned and used by Antiac/Lhuc Plantation. You should contact them regarding their plans for this portion. You can try John Higham in their Honolulu office or Richard Edsall in Lihue, 245-7325.

Hopefully this information will be helpful. If there are further questions please feel free to contact me at (808) 245-3878.

Sincerely,

GROVE FARM PROPERTIES, INC.

Michael H. Furukawa
Vice President and Project Manager

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

February 12, 1999

Mr. Allen A. Smith
Vice President & C.E.O.
Grove Farm
3-1850 Kaunualii Highway
Lihue, Hawaii 96766

Dear Mr. Smith:

Re: Access Road to Huleia Quarry
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

We are investigating several design alternatives for the Quarry Access Road intersection. An important consideration in our evaluation and comparison of these alternatives is the time period that the quarry will be in operation. If you already have this information, we will appreciate you letting us know what it is. If not, an "educated guess" will suffice. This "guess" could be as approximate as 5 years, 10 years, 15 years, etc.

Your earliest response will be appreciated.

Sincerely,

Paren, Inc.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

cc: DOT-Kauai, attn: Steve Morikawa

TC 26 Folder 595

November 13, 1998

Mr. David Pratt
Island School
3-1875 Kaunualii Highway
Lihue, HI 96766

Dear Mr. Pratt:


Re: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

We understand Island School uses the existing Kauai Community College road for access. Since this project will affect Island School, we are enclosing a copy of our letter to the college [including a print of the plan] about the improvements to the existing intersection.

Should you have question(s) or need additional information, please feel free to contact the undersigned or the State Highways Division on Kauai.

Sincerely,

Paren, Inc.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

cc: DOT Kauai, attn: Steve Morikawa

TC 26 Folder 595



Monday, December 14, 1998

Mr. Reginald Sumika, Vice President
Park Engineering
Suite 300, Kawahao Plaza
567 South King Street
Honolulu, Hawaii 96813-1036

RE: Improvements to Kaunualii Highway

Dear Mr. Sumika:

Thank you for your letter and schematic on proposed improvements to the access to Kauai Community College. This improvement long has been needed, and we are pleased to be kept informed. Afternoon, especially Tuesdays and Thursdays, between say 3:00 p.m. to 3:30 p.m., there has been congestion and delays in leaving the campus. A particular problem has been a corner which has impeded the departure of cars going to the West side. Your plan indicates that this is to be modified, thereby allowing cars going to the West side to exit more quickly than at present.

Some mornings there is a problem with entering the campus. Two factors contribute to this: 1) the left-turn lane is short. When it fills, cars behind must wait the movement of those ahead before proceeding in any direction, either straight ahead or to the left; 2) the green light following a left turn into the campus comes and goes quickly. Only a few cars can make it through the intersection before the light changes.

For our part, we have temporarily changed our school schedule so that students may leave campus before the rush hits at 3:00 p.m. to 3:15 or 3:20 p.m. Also, the length of light for exiting the Kauai Community College Campus has been lengthened - between 3:00 p.m. to 3:30 p.m. The improvements shown on your schematic should be of assistance as well.

Thank you, again, for contacting us. Please let us know if there might be anything we could do to ensure success of this worthwhile project.

Yours very truly,

David W. Pratt
David W. Pratt, President
Board of Directors
Island School

cc: Gary Niina
Steve Morikawa

BOARD OF DIRECTORS
1996-1999

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Accredited by the Western Association of Schools and Colleges

May 14, 1998

Ms. Peggy Cha, Provost
Kauai Community College
3-1901 Kaunualii Highway
Lihue, Kauai, Hawaii 96722

Dear Ms. Cha:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preliminary Engineering Study
and Environmental Assessment

The State Department of Transportation has engaged our firm to conduct preliminary engineering investigations/studies for the design of highway improvements for Kaunualii Highway. The purpose of this letter is to inform about the project and to provide you with preliminary information that's relevant to Kauai Community College. Accordingly, we are enclosing a conceptual plan of the proposed highway at the entrance (road) to the college.

In general, the proposed project will be approximately 7.5 miles in length starting at the Lihue Mill and extending to a point about a half mile beyond the junction of Maluhia Road (see attached map). The project will replace the present two lane highway with a four lane divided highway. In general, the new highway will follow the alignment of the existing highway.

If you have comments and/or concerns about this project, please contact us (preferably by letter) at your earliest convenience.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING

Reginald Suzuki

Reginald Suzuki
Vice President

cc: DOT- Kauai, attn: Steve Morikawa

TC 26 Folder 595

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

November 13, 1998

Mr. Gary Nitta
Administrative Service Director
Kauai Community College
3-1901 Kaunualii Highway
Lihue, HI 96766

Dear Mr. Nitta

Re: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

The State Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigation/studies for the design of highway improvements for Kaunualii Highway.


The purpose of this letter is to provide you with advance information about the project. The total project is roughly 7.5 miles long, starting at the Lihue Mill and extending to a point about half a mile beyond the junction of Maluhia Road. In general, the Department plans to improve the present highway from a two lane to a four lane divided highway.

At the present time, Kauai Community College has one access located at the intersection of Kaunualii Highway and Puhi Road. The Department plans to maintain this access and improve it to a full service intersection as shown on the enclosed preliminary plan (sheet 19).

Should you have question(s) or need additional information, please feel free to contact the undersigned or the State Highways Division on Kauai.

Sincerely,

Patren, Inc.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

cc: Mr. David Pratt
(print of sheet 19 included)

DOT Kauai, attn: Steve Morikawa

TC 26 Folder 595

August 20, 1998

Kauai Electric
Engineering Department
4463 Pahee Street
Lihue, Hawaii 96766

Gentlemen:

Re: Improvements to Kaunualii Highway/
Conceptual Designs for Hoomana Road
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

The State Department of Transportation has engaged Paren, Inc. to conduct preliminary engineering investigation/studies for the design of highway improvements for Kaunualii Highway. The purpose of this letter is to inform you about this project and to provide you with some advance information relevant to your facilities in the vicinity of Hoomana Road.

The project is approximately 7.5 miles long starting at Lihue Mill and extending to a point about half a mile beyond the junction of Maluhia Road. A map of the project is on the enclosed title sheet plan, sheet 1. The project will replace the present two lane highway with a four lane divided highway.

At Lihue Mill, the two new additional lanes will be constructed on the mauka side of the existing highway. This will include the construction of a new bridge next to the existing Lihue Mill Bridge. Because of the close proximity of the new bridge to the existing Hoomana Road bridge, access via the existing Hoomana Road will not be possible. A new access (road) will therefore be provided for the residents of Hoomana Road. We are presently studying two plans, Conceptual Plan A-2 and Conceptual Plan A-3, as possible designs for realigning Hoomana Road. Enclosed are prints (each one) of these plans. Please note that these plans are still very preliminary and that we must still conduct a study to determine their feasibility.

Plan A-2 will require that two of the existing power poles,

Improvements to Kaunualii Highway/
Conceptual Designs for Hoomana Road
August 20, 1998
Page 2 of 2

Pole "A" and Pole "B", be relocated. Plan A-3 will require that Pole "B" and possibly Pole "A" be relocated, said relocation depending on the design of retaining walls for the realigned road. Please review these plans and provide us with any comments you may have.

Before making a final decision (on these plans), the State and Paren, Inc. will contact all parties impacted by the realignment and review their comments and/or concerns. The impacted parties include Lihue Plantation, the Department of Public Works, the owner of parcel TMK:3-8-16:20 and all of the other residents of Hoomana Road.

If you have question or require additional information, please feel free to contact us by telephone or letter. Our telephone number is 808-5311676. Your earliest response will be appreciated.

Sincerely,

Paren, Inc.
dba PARK ENGINEERING



Reginald Suzuka
Vice President

cc: DOT-Kauai, attn: Steve Morikawa

TC 26 Folder 595

May 12, 1998

The Kauai Humane Society
P.O. Box 530
Hanapepe, Kauai, Hawaii 96716

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preliminary Engineering Study and Environmental Assessment

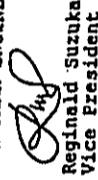
The State Department of Transportation has engaged our firm to conduct preliminary engineering investigations/studies for the design of highway improvements for Kaunualii Highway. The purpose of this letter is to inform you about this project and to solicit information you may have that we should be aware of.

The proposed project is approximately 7.5 miles in length starting at the Lihue Hill and extending to a point about a half mile beyond the junction of Maluhia Road (See attached map). The project will replace the present two lane highway with a four lane divided highway. In general, the new highway will follow the alignment of the existing highway.

If you have information and/or concerns about this project, please contact us (preferably by letter) at your earliest convenience.

Sincerely,

Paren, Inc.
dba PARK ENGINEERING



Reginald Suzuka
Vice President

cc: DOT-Kauai, attn: Steve Morikawa → faxed 5/15/98

TC 26 Folder 595

November 16, 1998

Mr. Robert Steputis
Landscape and Planting Chairman
Outdoor Circle
P.O. Box 921
Lihue, Hawaii 96766

Re: Existing "Tree Tunnel" along Maluhia Road
Improvements to Kaunualii Highway,
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

The State Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigation/studies for the design of highway improvements for Kaunualii Highway. The project is approximately 7.5 miles long, starting at the Lihue Mill and extending to a point about half a mile beyond the junction of Maluhia Road. In general, the Department plans to improve the present highway from a two lane to a four lane divided highway.

We are currently considering two highway alignment alternatives in the vicinity of the Maluhia Road/Kaunualii Highway intersection. One alignment, ALIGNMENT "A", is a design that will widen the highway on the makai side of the existing highway. The other alignment, ALIGNMENT "B", is a design that will widen the highway on the mauka side. The designs for the Maluhia Road intersection are shown on the enclosed CONCEPTUAL PLAN D-5 and CONCEPTUAL PLAN D-6, respectively. We are also enclosing a print of sheets 9 and 26 for the two highway alignments, ALIGNMENT "A" and ALIGNMENT "B", on which the two existing wetlands in the vicinity of the intersection are shown.

As indicated on these plans, ALIGNMENT "A"/CONCEPTUAL PLAN D-5 will have a greater impact on the existing trees and less on the Wetlands. The opposite is true for ALIGNMENT "B"/CONCEPTUAL PLAN D-6. Please note that these are conceptual plans that must still be coordinated with the Kauai County Department of Public Works, the agency responsible for the future improvements to Maluhia Road.

Existing "Tree Tunnel" along Maluhia Road
Improvements to Kaunualii Highway
November 16, 1998
Page 2 of 2

Your review, comments and/or suggestions on these plans are requested. Your earliest response will be appreciated.

Sincerely,

Paren, Inc.
dba PARK ENGINEERING



Reginald Suzuka
Vice President

cc: DOT- Kauai, attn: Steve Morikawa

TC 26 Folder 595



P.O. BOX 921
LHAUE, HAWAII 96766

THE KAUI OUTDOOR CIRCLE

December 5, 1998

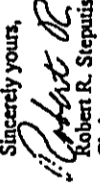
Mr. Reginald Suzuka, Vice President
ParEn, Inc./Park Engineering
Suite 300, Kawaiahao Plaza
567 South King Street
Honolulu, HI 96813-3036

Dear Mr. Suzuka:

Thank you for your letter and blueprints dated November 16, 1998, informing the Kauai Outdoor Circle about the planned road widening at the Maluhia Road-Kaunualii Highway intersection.

The Circle supports Alignment B, which proposes to widen the highway on the mauka side. It is our view that the importance of the trees outweighs the importance of the "wetlands" in this case.

Thank you for inviting us to comment at this early stage. It is noted that these are conceptual plans which will later be coordinated with the Kauai County Department of Public Works.

Sincerely yours,

Robert R. Stepulis
Chairman
Landscape and Planning

100% Recycled Bond



P.O. BOX 921
LHAUE, HAWAII 96766

THE KAUI OUTDOOR CIRCLE

January 5, 1999

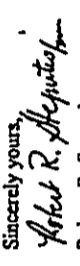
Mr. Reginald Suzuka, Vice President
ParEn, Inc./Park Engineering
Suite 300, Kawaiahao Plaza
567 South King Street
Honolulu, HI 96813-3036

Subject: My letter dated December 5, 1998 - changes thereto

Dear Mr. Suzuka,

Thank you again for your invitation to The Kauai Outdoor Circle to provide input about the widening at the Maluhia Road - Kaunualii Highway intersection. After a careful personal site inspection and evaluation, it now appears we should favor alignment A, endeavoring to save as many trees as possible, mauka. Perhaps those trees could form a lane separation?

We request that mature trees which are removed be replaced to maintain the tunnel of trees appearance. This would be a good stewardship step to offset the ever-declining number of trees as development encroaches everywhere. The replanting should be part of the road project completion, along with final grading and grassing.

Sincerely yours,

Robert R. Stepulis
Chairman
Landscape and Planning

100% Recycled Bond

May 12, 1998

Kaunualii Investment Co. and Koamalu Associates
c/o Kauai Realty Co.
2970 Kress Street
Lihue, Kauai, Hawaii 96766

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preliminary Engineering Study and Environmental Assessment

The State Department of Transportation has engaged our firm to conduct preliminary engineering investigations/studies for the design of highway improvements for Kaunualii Highway. The purpose of this letter is to inform you about this project and to solicit information you may have that we should be aware of.

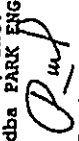
The proposed project is approximately 7.5 miles in length starting at the Lihue Mill and extending to a point about a half mile beyond the junction of Maluhia Road (See attached map). The project will replace the present two lane highway with a four lane divided highway. In general, the new highway will follow the alignment of the existing highway.

We are studying two alignment alternatives for the project from Rice Street to Nawiliwili Road. ALIGNMENT "A" is an alternative with the highway widen on the makai side of the existing highway. ALIGNMENT "A-1" depicts the widening on the mauka side. Schematic plans for these alternatives are provided for your information.

If you have information and/or concerns about this project, please contact us (preferably by letter) at your earliest convenience.

Sincerely,

PAREN, INC.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

cc: DOT- Kauai, attn: Steve Morikawa faxed 5/13/98

TC 26 Folder 595

November 12, 1998

Mr. Fred Atkins
Kloehana/Wilcox Trust
P.O. Box 3121
Lihue, HI 96766

Dear Mr. Atkins

Re: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

The State Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigation/studies for the design of highway improvements for Kaunualii Highway.


The purpose of this letter is to provide you with advance information about the project. The total project is roughly 7.5 miles long, starting at the Lihue Mill and extending to a point about half a mile beyond the junction of Maluhia Road. In general, the Department plans to improve the present highway from a two lane to a four lane divided highway.

At the present time, access for the parcel of land own by the Wilcox Trust (TK 3-4-0511) to Kaunualii Highway is via the existing paved road along the western boundary. The Department plans to maintain this access by providing a modified full service intersection. A print of the plan [sheet 20] that shows the new intersection is enclosed.

Should you have question(s) or need additional information, please feel free to contact the undersigned or the State Highways Division on Kauai.

Sincerely,

PAREN, INC.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

cc: Mr. Wally Wallace
(print of sheet 20 included)

DOT Kauai, attn: Steve Morikawa

TC 26 Folder 595



November 16, 1998

Mr. Reginald Suzuki
Vice President
Park Engineering
Suite 300, Kawalahao Plaza
567 South King Street
Honolulu, Hawaii 96813-3036

Dear Mr. Suzuki:

Thank you for taking the time to answer my questions pertaining to the proposed 4-lane highway. The layout looks good in regards to entering the property from the highway. In regards to turning left from the property, it is critical to have, at least, an "island" area/merging lane that can accommodate two vehicles.

At the present time, we have an island area, but it is not clearly designated and our visitors don't realize it is usable. They will wait for both lanes to clear, which backs up those cars trying to leave Kilohana.

If you have any questions, please don't hesitate to give us a call. Please send us any new information as it becomes available.

Sincerely,


Fred Atkins
General Partner

P.O. Box 3121, Uluhe, Island of Kauai, Hawaii 96766 / (808) 245-5608

April 16, 1998

Mr. Allan Zawtcocki/Trustee
Knudsen Trust
Real Estate Management
P.O. Box 3200
Honolulu, Hawaii 96847

Dear Mr. Mr. Zawtcocki:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preliminary Engineering Study

As you know, the Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigations/studies for the design of highway improvements for Kaunualii Highway.

The proposed project is approximately 7.5 miles in length starting at the Lihue Mill and extending to a point about half a mile beyond the junction of Maluhia Road (See attached map). The project will replace the present two lane highway with a four lane divided highway. In general, the new highway will follow the alignment of the existing highway.

Our work will be greatly facilitated if we had aerial contour maps of the Lihue/Koloa area in which our project lies. We are hoping that you may have such maps in your possession. If so, can you provide us with copies? We are willing to pay for the cost of the prints including mailing. If you do not have any (maps), can you direct us to someone who does? We will be most appreciative of your assistance in this matter.

As part of our work, we will also be preparing an environmental assessment. If you should have environmental concerns and/or information that we should know about, we will appreciate you making them known to us.

Your earliest response to the above will be appreciated.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING


Reginald Suzuki
Vice President

TC 26 Folder 595

LIHUE PUBLIC CEMETERY ASSOCIATION

PUHI RURAL BR. 2099
LIHUE, HAWAII 96766

Mr. Reginald Suzuki
Vice President

ParEn, Inc.

DbA Park Engineering
Suite 300, Kawaihāo Plaza
567 South King Street
Honolulu, Hawaii 96813-3036

Re: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)

We have looked over the maps enclosed with your letter and are appalled that you are using a map dated 1936. There have been many changes in the last 62 years, including the property that now belongs to the Lihue Cemetery. Our property now runs up to the Kaunualii Hwy, and does include a 20 foot set back for highway improvement.

Obviously we prefer Alignment "A-1".

For your further information, the 20 foot setback includes provision for a 100 year flood. The "A" configuration would necessitate the partial removal of the Lihue Plantation's bagasse house, therefore we highly recommend the "A-1" configuration.

We expect to hear from you again.

Very truly yours:

Maureen W. Morrison
Maureen W. Morrison, President

W. D. Goodale 5/20/98
Holbrook Goodale, Treasurer

May 13, 1998

Lihue Community Cemetery Association
P.O. Box 2099
Lihue, Kauai, Hawaii 96766

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preliminary Engineering Study and Environmental Assessment

The State Department of Transportation has engaged our firm to conduct preliminary engineering investigations/studies for the design of highway improvements for Kaunualii Highway. The purpose of this letter is to inform you about this project and to solicit information you may have that we should be aware of.

The proposed project is approximately 7.5 miles in length starting at the Lihue Hill and extending to a point about a half mile beyond the junction of Maluhia Road (See attached map). The project will replace the present two lane highway with a four lane divided highway. In general, the new highway will follow the alignment of the existing highway.

We are studying two alignment alternatives for the project from Rice Street to Nawiliwili Road. ALIGNMENT "A" is an alternative with the highway widen on the makai side of the existing highway. ALIGNMENT "A-1" depicts the widening on the mauka side. Schematic plans for these alternatives are provided for your information.

If you have information and/or concerns about this project, please contact us (preferably by letter) at your earliest convenience.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING

Reginald Suzuki
Reginald Suzuki
Vice President

cc: DOT- Kauai, attn: Steve Morikawa ← faxed 5/13/98

TC 26 Folder 595

CONTRACTORS ASSOCIATION OF KAUAI
4231 AHUKINI ROAD
LIHUE, HI 96766
PHONE: (808) 246-2662 FAX: (808) 246-8642



FAX TRANSMISSION

May 22, 1998

Lihue Community Cemetery Association
P.O. Box 2099
Lihue, Kauai, Hawaii 96766

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preliminary Engineering Study and Environmental Assessment

This is to acknowledge the receipt of your letter of May 20, 1998. We will be sending a copy (of your letter) to the State Highways Division.

Our current assignment is to conduct a preliminary engineering investigation/study for the design of highway improvements for Kaunualii Highway. The final designs and the preparation of contract documents for construction are not a part of our present scope of work.

The two reasons for our letter of May 13, 1998 were (1) to inform you about the project and (2) to solicit information and comments. As you are probably aware, there are other land owners who may be impacted by this project. Accordingly, we have written to them also (this includes Lihue Plantation). You can be assured that the comments and concerns of all respondents will be carefully reviewed and considered in selecting the final alignment.

With respect to your comment about the 100 year flood, we will be investigating and studying the impact(s) of the new highway improvements on the existing highway drainage facilities and will be making recommendations on drainage improvements to the State Highways Division in accordance with their design requirements.

Sincerely,
ParEn, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President

cc: DOT- Kauai, attn: Steve Morikawa
(copy of LFCA's letter enclosed)

TC 26 Folder 595

If you do not receive ___ pages (including cover page), please call 246-2662.

RECEIVED
MAY 19 1998 - KAUAI
2000 JAN 11 11:48

Date: January 14
TO: Steve Kyono
FROM: Karen Taketa
RE: INFORMATIONAL MEETING ON KAUNUALII HWY IMPROVEMENTS...

MESSAGE:

Steve, just wanted to send you a note thanking you and congratulating you for facilitating one of the best informational meetings I have ever been to. It was so refreshing. So positive. So constructive. And all done with humor, finesse and good taste!! I know you are frequently on the receiving end of complaints, complaints and more complaints so wanted to let you know that you had many of us impressed. Thank you so very much.

I think you would appreciate a comment John Romanowski of Jas. W. Glover was sharing with me. He had been to several informational meetings your department has held in his Honolulu neighborhood because of proposed work and it has turned adversarial. He was impressed with the homework you and your consultants and staff had to do to prepare for the meeting and it showed. You, your staff and the consultants made him feel better that your entire department was not like your colleagues in town. He left Kauai feeling pretty upbeat and feeling good that you folks are going to make sure those businesses in the quarry will not be overlooked in the improvement process.

Thank you again Steve for a job well done. You worked hard to make this look easy. We know.

Nov.. please go get those lands in front of Coco Palms!

Public Comment Form

Improvements to Kaunualii Highway

Lihue to West of Maluhia Road

County of Kauai, Hawaii

State of Hawaii Department of Transportation

Highways Division

RECEIVED

DEPT. OF TRANSPORTATION - KAUAI

JAN 18 A 10 09

The information you provide in this form will help the State Department of Transportation in planning the improvements to Kaunualii Highway project. We appreciate any comment you may have.

Name: James Davis Mayfield
Address: 4651 Hoomana Road, Lihue, HI. 96766

Telephone (day): 808-246-0411
Telephone (eve): 808-245-1860

Please make any comments below:

The only acceptable plan is one of the "B" plans. C,D,E would radically change the traffic flow on the road in an unsatisfactory manner. The heaviest users are the church and the pre-school and if C,D or E were chosen, those people would have to drive to their church from the rear of Hoomana creating a substantial traffic flow on a road not designed for that level of traffic.

In regards to the "B" plans, the concern is that some allowance must be made to allow the children who live on Hoomana to be able to walk and bicycle to both Kukui Grove (south) and McDonalds on the north. If a tunnel is chosen, sufficient lighting must be installed so that the tunnel is not pitch dark without the lighting being so bright as to bother the neighboring homeowners.

In any case, "B" must be landscaped in some manner consistent with the neighborhood. Bananas trees require little maintenance and fit with the neighborhood.

You should also have the next meeting regarding Hoomana Road at the Lutheran Church on Hoomana. It helps to develop community spirit - Pastor Paul Firschner 245-2145.

Public Comment Form

Improvements to Kaunualii Highway

Lihue to West of Maluhia Road

County of Kauai, Hawaii

State of Hawaii Department of Transportation

Highways Division

RECEIVED

DEPT. OF TRANSPORTATION - KAUAI

JAN 18 A 10 09

The information you provide in this form will help the State Department of Transportation in planning the improvements to Kaunualii Highway project. We appreciate any comment you may have.

Name: Robin K. Robinson
Address: P. O. Box 3633
4730 Hoomana Road
Lihue, HI 96766

Telephone (day): (808) 338-8300 ext. 110 or (808) 635-6846
Telephone (eve): (808) 635-6846 or (808) 635-5385

Please make any comments below:

Kaunualii Highway Improvement Project - Access to German Hill; Scheme B

Mr. Kyono,

I would like to urge you to please consider Scheme B as the most logical alternative to providing access to Hoomana Road. Of the three options within Scheme B, it would seem option 1 would be the most cost effective. Option 2 will cost more and option 3 will have a height limit on vehicles and will be the most costly.

I believe the best possible alternative are being considered on all phases of this project. I commend you and all associated with this project for the superior work being performed.

Sincerely,

Robin K. Robinson

Robin K. Robinson

Public Comment Form

Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

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SYS - KAUAI
2000 JAN 19 A 10:33

Public Comment Form
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the improvements to Kaunualii Highway project. We appreciate any comment you may have.

Name: Shanti Cassidy
Address: 2829 N. H. Kono
Salon, HI 96756

Telephone (day): 742-9367
Telephone (eve): "

Name: Nadine P. Robinson
Address: P. O. Box 3633
4730 Hoomana Road
Lihue, HI 96786

Telephone (day): (808) 245-6467
Telephone (eve): Same

Please make any comments below:

I thought breadth of information was good. Due to large turnout for Hoomana Rd concerns, I did not stay to show comments. Very glad to see median still planned. I did not see information with specific plans for agricultural & planting. That is important! I strongly support sub alternatives in last segment, approaching Maluhia Rd. As you know, EPA recommends NO from lanes beyond Maluhia. It is wise to preserve 2 lane segments. It is quite rural by this section of the highway. The sooner the split lanes, the better.

Please make any comments below:

Kaunualii Highway Improvement Project - Access to German Hill; Scheme B
Mr. Kyono,
Please consider Scheme B as the best option to provide access to Hoomana Road. Scheme C, D & E all impact Lihue Plantation and their operations negatively. Hoomana road and the community along it is unique to Lihue and should be preserved. Scheme B provides optimum safety and has minimal impact on the community. Of the three options under Scheme B, I prefer option 1 or 2.

Thank you,
Nadine P. Robinson
Nadine P. Robinson

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COUNTY OF KAUAI
2000 JAN 21 A 10:45

Public Comment Form
Improvements to Kaunuaʻali Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

January 20, 2000

Mr. Steven M. Kyono
District Engineer
Department of Transportation
Highways Division
State of Hawaii
3060 Elwa Street, Room 241
Lihue, HI 96768

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaunuaʻali Highway project. We appreciate any comment you may have.

Name: LYNN A. GAZELA
Address: 4135 HOOMANA RD
LIHUE, HI 96768
Telephone (day): 246-3356 (ext 3)
Telephone (eve): 245-8457

Dear Steve:

Subject: Improvements to Kaunuaʻali Highway; Lihue to West of Maluhia Road
We attended last Thursday's public informational meeting on the subject matter and have reviewed the preliminary plan materials distributed. At this time we don't see any major issues regarding Grove Farm's lands that couldn't be easily resolved. We concur with your proposed expansion plans for makuai or mauka, depending on the segment.

As you develop more detailed plans we would be happy to discuss issues as they arise. As the island's economy improves more traffic can be expected and we encourage the State to expedite implementation of these improvements. We look forward to working with you on this project.

Sincerely,
GROVE FARM COMPANY, INCORPORATED
Michael H. Furukawa
Michael H. Furukawa
Vice President and Project Manager

Please make any comments below:

This is with regard to access to German Hill. My home is situated near what is now the end of Hoamana Road. Mine is the last house on the right side before the empty lots.

I am opposed to accessing German Hill by way of Ehiku Street (either Schemes E or D) or by way of the cane haul road that runs behind German Hill and directly behind my home (Scheme C). I am opposed to access by these means, above all, because of added traffic, dust, and noise. Also, with more cane trucks using the cane haul road designated as Scheme E due to the closing of the Kekaha Sugar Mill, this would make for very hazardous driving conditions. Adding to the hazardous conditions is the fact that Ehiku Street has already been designated as the access road for the Lihue Energy Service Center site (for the KE power plant).

With regard to Schemes A and B, the route in Scheme B appears more direct and less treacherous, however, the most feasible of either of these alternatives (Scheme A or B) would be acceptable.

Thank you very much for allowing me the opportunity to voice my concerns. I look forward to hearing from you in the next phase of the planning/development process.

P.O. Box 2069 Puna Rural Branch Lihue, Hawaii 96766-7069
Phone: (808) 245-3678 FAX (808) 246-9470

Public Comment Form

RECEIVED
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road

2800 JUN 28 A 11: 25

County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the improvements to Kaunualii Highway project. We appreciate any comment you may have.

Name: William A. & Aileen Jim's Sr.
Address: 4696 HOOMANA RD.
LIHUE, HI 96766

Telephone (day): 337-1491 (Bus.) Page: 1 of 654-1936
Telephone (eve): 245-9163 (Home phone)

Please make any comments below:

Steven: Thank you for having the info meeting on our road. My wife & I have lived in the same house on Homan Hill for 27 years. Five years ago I purchased our home from AMFAC Sugar. I have worked for L.P.C. & AMFAC for 27 years. We do not want Schemes C, D, & E. We do not want Scheme A. Too much curve in a new road.
You see - Scheme B is the best. As for the 3 options we are undecided. We would need more detail to make a selection.

Thank you -
Bill Jim's Sr.

MICHAEL I. BELLES
DAVID W. CLAWSON, II
DAVID W. WILSON
DONALD H. WILSON
P.O. BOX 110, LIHUE, HI 96746

BELLES GRAHAM
PROUDFOOT & WILSON
ATTORNEYS AT LAW

WATUMULL PLAZA
4334 RICE STREET, SUITE 202
LIHUE, KAUAI, HAWAII 96766-1388
TELEPHONE NO: (808) 245-4705
FACSIMILE NO: (808) 245-3777
E-MAIL: mb@baw-w.com

February 2, 2000

Mr. Steven M. Kyono, P.E.
District Engineer
Department of Transportation
Highways Division--Kauai District
3060 Ewa Street, Room 205
Lihue, Kauai, Hawaii 96766

Re: Hoomana Road, Project No. 50DE-02-95

Dear Mr. Kyono:

I am writing on behalf of our clients Barnes and Helen Riznik. The Rizniks are property owners and residents of 4767 Hoomana Road in Lihue. We wish to thank you for holding the public information meeting on January 13, which both Mr. Riznik and I attended. We found it very informative and helpful to our understanding of the Kaunualii Highway widening project and the options for providing continued access to Hoomana Road.

The Rizniks have lived on their property for 25 years and are hopeful that future access to Hoomana Road will be resolved in a manner that is fair for all of the present property owners and others who use the street to go to and from those properties.

After listening to the presentation on January 13, it seems that three of the alternative access plans (options C, D and E) would result in the re-routing of all traffic through what is now open or agricultural land behind Hoomana Road and placement of a new road immediately in front of the Rizniks' property to handle this traffic. Use of the new road and traffic routing would include all daily traffic to and from the Lutheran Church and its pre-school. Such a scheme would have a serious negative impact on the value of the Rizniks' property, and would create an unsafe situation for them and the general public in that (a) because there is virtually no front yard on the Rizniks' property, the road intersection would be located immediately next to their existing house, and the Rizniks would be forced to enter and leave their carport right where the new intersection would be located. Also, by placing an intersection in such close proximity to the Riznik house, their visitors would have to park some ways down Hoomana Road and walk to the

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... KAUI
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Mr. Steven M. Kyono, P.E.
District Engineer
Department of Transportation
February 2, 2000
Page 2

house, thus causing increased danger to those pedestrians and the vehicular traffic on Hoomana Road.

In addition to the effect of options C, D and E on the Rizniks' property and interests, those options appear to be undesirable for at least two other reasons:

1. What is currently the "upper" portion of Hoomana Road is a narrow, neighborhood street that does not currently handle large volumes of traffic and is in regular use by children and adults on bicycles and on foot. There would be obvious safety concerns with a re-routing of all Hoomana Road traffic through the upper part of the neighborhood.


2. The re-routing of access to Hoomana Road would result in significant delays in fire, police and ambulance response times in the event of emergencies.

It appeared to be the consensus of those in attendance at the January 13 meeting that options C, D and E were not acceptable alternatives, and we hope that this opinion is shared by the planners of the project and will therefore focus attention on the other alternatives that were presented for future access to Hoomana Road.

Thank you again for sharing the preliminary plans for this project. Please add the Rizniks and our office to the list of recipients of the draft Environmental Assessment for this project when it is completed.

Very truly yours,

BELLES GRAHAM
PROUDFOOT & WILSON



Donald H. Wilson

DHW:dhw

cc: Mr. And Mrs. Riznik

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MINUTES OF PUBLIC INFORMATIONAL MEETING

KAUNUALII HIGHWAY IMPROVEMENTS
LIHUE TO WEST OF MALUHIA ROAD

MEETING TIME: March 2, 1999; 7:00 pm to 9:00 pm

LOCATION: Wilcox Elementary School Cafetorium

LIST OF ATTENDEES: See attached sheet

1. INTRODUCTION BY MR. STEVE KYONO:

The meeting was convened at 7:00 pm by Mr. Steve Kyono, District Engineer for the State Highways Division. Mr. Kyono introduced his staff, Messrs. Glenn Yamamoto and Steve Morikawa, and Mr. Reginald Suzuki, project manager for Park Engineering, the prime design consultant. Mr. Kyono noted that the State is not required by rule regulation or law to hold this meeting. However, the State has chosen to do so as a matter of its commitment to inform the public. He also explained the purposes for the meeting as being (1) to share information on the work in progress in the planning process, (2) to answer questions about the project and (3) to provide an opportunity for the public to offer information, the State may not be aware of. Mr. Kyono then gave a brief overview of the project and the format for the meeting.

2. PRESENTATION BY MR. REGINALD SUZUKA:

Mr. Suzuka began his presentation with a brief description of the project. He then identified (with the aid of drawings) the existing improvements and environmental resources that could be impacted by the project. This was followed by a description and explanation of the alignment proposed for the project. The following is a summary of Mr. Suzuka's presentation:

Project Description-

- The project is approximately 7.5 miles long.
- It begins at the intersection of Rice Street and Rubio Highway and extends westward to about a half mile beyond Maluhia Road.
- The existing two lane highway will be widened to a four lane divided highway.
- The typical highway section will have two westbound lanes and two eastbound, 10 foot shoulders and bike lanes. Sidewalks will be provided within the Urban Areas.
- Sight-distances will be increased to current federal design standards.

Existing Improvements and Resources- They include the following:

- Lihue Plantation Cane Conveyor system and mill storage building.
- Existing Koomana Road Bridge and Lihue Mill Bridge.
- Lihue Public Cemetery.
- Department of Water Supply Baseyard Facilities
- Puhia Businesses
- Kauai Community College
- Kauai Nursery
- Brewer Environmental, Inc.
- Wetlands (Total of three)
- Haiku Airstrip

- Halenahahu Reservoir
- Swamp Mahogany Trees along Maluhia Road and Kaunualii Highway.

Proposed Alignment- The proposed alignment is intended to minimize potential impacts to the existing improvements and resources. The alignment and the impacts are as follows:

▪ FROM THE RICE STREET/KURIO AVENUE INTERSECTION TO NAWILIWILI ROAD, WIDEN THE HIGHWAY ON THE MAUKA SIDE. THE POSITIVE IMPACTS ARE:

- (1) Major reconstruction of the cane conveyor system and the storage building and disruption to mill operations will be avoided.
- (2) Encroachment into the Lihue Public Cemetery will be minimized.
- (3) Impacts to the Department of Water Supply baseyard facilities will be avoided.

A NEGATIVE IMPACT IS THAT THE HOOMANA ROAD BRIDGE WILL BE CLOSED TO VEHICULAR TRAFFIC.

▪ BETWEEN NAWILIWILI ROAD & NANI STREET, WIDEN THE HIGHWAY ON THE MAUKA SIDE. THE REASONS ARE:

- (1) The State has already acquired the right-of-way along the Kukui Grove Shopping Center.
- (2) The Rubou Street Extension has been designed for widening on the makai side.

▪ BETWEEN NANI STREET & THE VICINITY OF KIPU ROAD, WIDEN THE HIGHWAY ON THE MAUKA SIDE. THE POSITIVE IMPACTS ARE:

- (1) Impacts to the existing businesses in Puhia will be minimized.
- (2) Impacts to Kauai Nursery and Brewer Environmental will be minimized.

THE NEGATIVE IMPACTS ARE:

- (1) The alignment will encroach into Kauai Community College.
- (3) The alignment will encroach into a Wetland area.

▪ FROM KIPU ROAD TO THE VICINITY OF MALUHIA ROAD, WIDEN THE HIGHWAY ON THE MAUKA SIDE. THE POSITIVE IMPACTS ARE:

- (1) The deep ravine on the mauka side of the Kipu Road intersection will be avoided.
- (2) The relative location/position of the highway to the Halenahahu Reservoir and the Haiku Airstrip will be maintained.
- (3) The design and construction of the Kuleia Bridge and Quarry Road will be more economical.
- (4) The impact to the Wetland will be minimized.

▪ AT MALUHIA ROAD AND BEYOND, MORE DETAIL STUDIES WILL BE CONDUCTED TO DETERMINE WHETHER THE HIGHWAY SHOULD BE WIDENED ON THE MAUKA SIDE OR THE MAUKA SIDE. FOR THIS STUDY, THE CONSULTANTS WILL COORDINATE AND CONSULT WITH THE CORPS OF ENGINEERS, THE OUTDOOR CIRCLE AND THE KAUALI COUNTY DEPARTMENT OF PUBLIC WORKS.

3. QUESTIONS (Q) AND ANSWERS (A):
COMMENT BY MR. KYONO ABOUT THE PROJECT-

Timing is important in all of this. A rough estimate of the project is 150

million dollar. It's a large sum of money and may mean constructing the project in phases, perhaps three phases. We will be competing with the other Counties for funds. Funding is set by a prioritization process. We're hoping the priority for this project will be very high. Where we stand state-wide is not known yet. You, as members of the public, can help by showing your enthusiasm for the project and by letting the decision-makers know this is a priority project that is important to you. We will also be looking for federal money to help with the funding because State resources are not sufficient.

- Q. Generally, what kind of median will we have? What is the median for?
- A. The median will be 32 feet wide. This is a typical width for other highway throughout the state. The median will be landscaped and will be wide enough to accommodate acceleration, deceleration and turning lanes.
- Q. Where is the traffic coming from?
- A. In the morning, the traffic comes from as far as Kekaha and Waimea. By and large, the largest contributor is Kalahao with builds up along the way. There's a large increase and back up at the tree tunnel. Traffic is generally solid right through. At Puhi, there's another tremendous influx of traffic.
- In the afternoon, the traffic reverses.
- Q. My real question is what happens with the traffic west of the project?
- A. That is a matter addressed in the Kauai Long-Range Land Transportation Plan. A lot (of what will happen) depends on such things as the Kauai General Plan amendment that is taking place right now.
- Q. What is the schedule for the project?
- A. We hope to have the design completed in 3 years or so. Depending on funding, construction could take 12 years.
- Q. Wouldn't it be more feasible to "put in" a new road rather than widen Kamuali'i Highway? An alternate route?
- A. That would fall into a whole new category. The Kauai Long-Range Land Transportation Plan provides such alternatives.
- Q. Did you say that another bridge will be constructed at Huleia Stream?
- A. That is correct. The present bridge "as is" is not physically wide enough to accommodate four traffic lanes.
- Q. Building a road next to the existing (road) will create traffic congestion. Isn't it better to construct a new highway along another route?
- A. Again we come back to the main objective of this project. A new highway is not part of the scope of this project. A brand new highway involves a new realm of environmental requirements and regulations. The scope is not to look at other routes. The Kauai Long-Range Land Transportation Plan has at least two alternate "bypass roads". We recognize there will be problems during construction and so we will provide temporary detours and traffic controls. All of these things will be taken into consideration.
- Q. Exactly where does the project begin?
- A. The project begins just before the cane conveyor bridge where Kubio Highway and Rice Street intersect (The location was shown on one of the

plans).

- Q. The existing Lihue Mill and Hoowana road Bridges are historically significant. What does this mean?
- A. This means the bridges are considered historically significant but are not on the National Historic Bridge Register. It also means we have to work with the State Historic Preservation Office to develop mitigation measures that address its concerns.
- Q. Is the median to be landscaped? If so, what kind?
- A. Yes. Probably low shrubs and other ground cover that do not require a lot of maintenance and water.
- Q. Will the project accommodate bike lanes along Kubio Highway?
- A. No. The project ends at Kubio Highway.
- Q. Even with four lanes, you still have the stop lights that will bring traffic to a halt.
- A. What we're talking about is highway capacity. Although the traffic lights impede traffic, we are increasing capacity, eg. the ability of the highway to carry traffic. (The flow of water out of two bottles with different size openings was used to explain highway capacity)
- Q. Beyond the end of the project (the Waimea end), can we get away from this urban type of highway and keep the rural highway? In other words, two separate roads with two lanes each, one going in one direction and another going the other way. So we end up with four lanes that have a rural appearance.
- A. From an engineering perspective, it can be engineered but we're talking about a very costly highway. We're talking about two separate highway that need to be interconnected so that traffic can go from one to the other. Beside the cost factor, there's also the "Not in My Back Yard" reaction by landowners. "Why put the road in my land?" "Why take my property?"
- Q. A 10 foot wide bicycle path is not a bicycle path. It's a death trap.
- A. This is not a bicycle path, it's a bicycle lane. A bicycle path is a separate facility. It's a totally separate facility (from a highway).
- Q. Where do the street lights stop?
- A. We're not going to light-up the whole highway. General speaking, you can expect the major intersections to be lighted.
- Q. This is not a planning project. It is a planning project by default. It is not really planning. This is not asking for community input.
- A. The community input you're referring to is part of the planning process for the Kauai Long-Range Land Transportation Plan. This plan is updated every five years.

Prepared by Reigmald Suruka



Sign-in Sheet

PUBLIC INFORMATION MEETING NO. 1
MARCH 2, 1999
WILCOX ELEMENTARY SCHOOL

KAUMUALII HIGHWAY IMPROVEMENTS
LIHUE TO WEST OF MALUHIA ROAD
PROJECT NO. 50DE-02-95



Memorandum

DRAFT

To: File
From: Jason Yazawa
Date: January 24, 2000
Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
Public Information Meeting Held on January 13, 2000
Comments, Questions and Answers

Staff in Attendance: Steve Kyono, SDOT
Glenn Yamamoto, SDOT
Steve Morikawa, SDOT
Pat Phung, FHWA
Glenn Ikeda, ParEn
David Atkin, PB
Jason Yazawa, PB

Enclosure: Sign-In Sheets

Questions, Answers and Comments Regarding Options to Maintain
Access to German Hill

Would the changes being made at the Kaumualii Highway / Rice Street Intersection affect the existing or future intersection of Hoomana Road and Kaahumanu Highway?
The Kaumualii Highway / Rice Street Intersection changes will not affect the existing, or possible future, intersection of Hoomana Road and Kaumualii Highway.

Why not connect the existing Hoomana Road directly to the widened portion of Kaumualii Highway?

The new intersection would be too close to the new Lihue Mill Bridge, which would restrict left-turn movements from Kaumualii Highway to Hoomana Road.

Alignments C, D and E would interfere with the movements of 200 to 250 cane haul trucks per day.

How many houses would be displaced?

Over a Century of
Engineering Excellence

Name	Organization/Address	Phone No.
Mrs. J. K. [unclear]	448 Kaahalei	722-4625
Robert W. [unclear]	P.O. Box 87 Koloa, Kauai	332-874
Les Yasutake	6130 Aieha Dr. Kapaa	323-3817
Will Galiza	2545 Aiehae St. Lihue	245-1071
John Tanner	4228 Hano St. Lihue	245-7579
Chuen Miao	P.O. Box 656 Koloa	332-1585
Carol Yasutake	6130 Aiehae Dr. Kapaa	822-3817
Kevin McManis	P.O. Box 237 Wailua	338-1477
Barbara Major-Bostick	P.O. Box 245 Elele, Kauai	
Jimmy Takaki		245-9522
Tom Cassiday	2149-B Puu Puu Koloa, Kauai	332-5576
Ann [unclear]	2149-B Puu Puu Koloa, Kauai	332-5576
Leah Oliver	P.O. Box 87 Koloa, Kauai	"
Sarah Oliver	2170 Kipapa Koloa, Kauai	742-9020
Lance Kuroki	"	742-1494
Steve Mori-Kawa	Hwy 5 Division	204-3118

DRAFT

No alternative would displace houses. However, Alignment B would require property acquisition in German Hill.

Alignments C, D and E would cause congestion at the end of Hoomana Road, and would therefore, adversely affect about a half dozen houses in this section.

How will the decision be made in selecting the preferred Hoomana Road re-alignment?

The State Department of Transportation (SDOT) and the Federal Highway Administration (FHWA) will make the decision based on engineering considerations and public comments.

Pedestrian and bike access between German Hill and Lihue must remain open. Does Alignment B include such access?

Yes, under Alignment B, pedestrian and bike access between German Hill and Kaunuaia Highway would remain available by keeping the existing Hoomana Road and Bridge open, which would be converted to a pedestrian/bike path.

Alignments C, D or E would shift traffic to the end of Hoomana Road where there is a hairpin turn.

No alternative should be selected that would adversely affect AMFAC, a company trying to maintain its sugarcane cultivation business.

The resident who owns a home located at the beginning of Hoomana Road was concerned that Alignment B would displace his garage and eliminate a large part of his yard. He states that his house is historic.

If Alignment B-3 (tunnel) is selected, lighting in the tunnel would be needed for safety reasons.

Why not provide access to Hoomana Road directly from Lihue Mill Bridge?

This alternative could be possible, but it appears not to be feasible because of the proposed design of the new Lihue Mill Bridge.

Since approximately 40 trucks a day pass under Hoomana Road Bridge, would Alignments A or B affect these movements?

Alignments A or B would not prevent these truck movements. However, an intersection with the re-aligned Hoomana Road would be created.

When would construction begin?

The year 2003, at the earliest.

A one-lane fly-over ramp from Hoomana Road to Lihue was suggested.

DRAFT

The intersection of Hoomana Road and Kaunuaia Highway (Alignments A or B) must be full access (i.e., all possible turning movements allowed).

The proposed Kaunuaia Highway median should be used more creatively?

At least part of the yard of the property affected by Alignment B could be regained if option 3 (tunnel) was selected.

Would acceleration/deceleration lanes be included with the new Hoomana Road / Kaunuaia Highway intersection?

Yes, acceleration/deceleration lanes would be part of the proposed plan.

It is possible to lessen the angle of the present Hoomana Road with Kaunuaia Highway?

It appears not to be possible because of the proximity of Hoomana Road with Lihue Mill Bridge.

The proposed Hoomana Road (Alignments A or B) intersection with the existing truck route needs to give priority to truck traffic.

Is the work to re-align Hoomana Road eligible for federal funding under this project?

Yes, because it is mitigation to an impact.

The SDOT facilitator was able to establish consensus among participants that Alignments C, D and E should be dropped from consideration.

Questions, Answers and Comments Regarding Kaunuaia Highway Project

Cars are traveling too fast on Kaunuaia Highway. Can speed bumps be installed near Lihue?

Speed bumps cannot be installed on a State highway. But, SDOT will explore the possibility of installing flashing lights to slow traffic.

Lihue Mill Bridge needs re-surfacing.

Work to resurface Lihue Mill Bridge is scheduled for March.

Would the project be phased, or would it be constructed all at once?

Design and construction of the project would be phased, even though the environmental process covers the entire project length. The first phase of the project would be from Lihue to Puhi, the section in which traffic congestion is most severe. The design of this first phase is expected take approximately two years.

The project should be consistent with the General Plan update, which states that four-lane highways should not be constructed beyond Matuhia Road.

**IMPROVEMENTS TO KAUMUALII HIGHWAY
Lihue to West of Maluhia Road**

**Public Information Meeting
Wilcox Elementary School
January 13, 2000**

PLEASE PRINT

NAME	ORGANIZATION	ADDRESS
ROBERT J. MARTIN	LIHUE LUTHERAN CHURCH	3411 WILCOX RD LIHUE HI 96766
Nadine Robinson		4370 HOOMANA LIHUE HI 96766
Robin Robinson		4370 HOOMANA LIHUE HI 96766
Amelino	Pelama Keiki Pk School	4602 HOOMANA RD LIHUE
Adelw Manem		4644 HOOMANA RD LIHUE HI 96766
MARWELL MANENE FOR SEETHA KANDAMINI S. Y. GARDNER		4644 HOOMANA RD LIHUE HI 96766
Aileen Shidabatz		29 340 710 KALAKEA HI 96741
John Romanowski	JW GLOVE LTD	4636 HOOMANA RD LIHUE 96766
Vianne Ihu Tabata	Home owner	HALF WAY BRIDGE 245-3609 4568 HOOMANA RD. LIHUE 96766
MONTE HULL	Sierra Club, League of Women Voters	2149 B Pua Rd, Kalakea HI 96741
KEVIN KROEDER	LIHUE LUTHERAN CHURCH	4602 HOOMANA LIHUE HI 96766
Bill Braden		4674 " " " "
Jerry Nishok	KNL / Lihue Lutheran Church	3-1550 KAUMUALII HWY. LIHUE HI 96766
Will Galiz	The Aholu Church	2545 UPAPANE ST LIHUE HI
DOUG ANDREWS	Lihue Lutheran Church	Pelama Keiki Pk School 3-2243 Kamahi Hwy. Lihue 96766
FENTON LEIS	HAWAII CLASSIC DESIGNS	4491 RICE ST LIHUE

DRAFT

The project would be planned to be consistent with the General Plan update. However, State highway projects are planned through the Kauai Long-Range Land Transportation Plan.

What is the deadline for comments?

There is no deadline for comments at this stage of the project. However, please submit any comments as soon as possible so that they can be considered while we prepare the Draft environmental assessment (EA).

How much of the project is federally funded?

Eligible project costs would receive up to 80 percent federal funding.

The project's EA should consider the social impacts of the project, particularly the project's potential effect on land development and population growth. If the project causes land development, it would not relieve congestion.

The project should consider cheaper alternatives.

How can one get a copy of the project's Draft EA?

Requests for copies of the Draft EA should be directed to SCOT.

**IMPROVEMENTS TO KAUMUALII HIGHWAY
Lihue to West of Maluhia Road**

**Public Information Meeting
Wilcox Elementary School
January 13, 2000**

PLEASE PRINT

NAME	ORGANIZATION	ADDRESS
Winston Lee	Reserve Classic Drive	4441 Rice St, Lihue HI 96766
JOHN HARLACHER	RESIDENT	4655 HOOMANA RD LIHUE
DARRELL K. MAEDA	Hawaii	Puhi
Gene Lecho	Public Engineer	95-108 LANA PL.
Glenn Yamamoto	St. Mary	3040 Ewa St. Rm 205
MIKE FURUKAWA	Gracie Farm Co.	P.O. Box 662069 Lihue 96766
Sei Rosa	State Highway Retired	4611 Ekele St. Lihue, Kauai 96766
Daelene Ramos	Resident	4716 Hoamana Rd Lihue 96766
CHERYL LOVELL-DEAN	ENR/PA/BIOL/PLANT	P.O. BOX 200, LIHUE HI 96766
John M. Eversy	Resident	4352 SALTILLO ST. Woodland Hills CA 91364

**IMPROVEMENTS TO KAUMUALII HIGHWAY
Lihue to West of Maluhia Road**

**Public Information Meeting
Wilcox Elementary School
January 13, 2000**

PLEASE PRINT

NAME	ORGANIZATION	ADDRESS
Bill & Aileen Faria	AMFAC	4666 Hoamana Rd, Lihue 96766
PAUL (MAYOR)		Box 1041 LAWA 96765
Rachel Taketa	Contractors Assn	4756 KUA RD Kalaheo 96741
Catherine Martin	Lihue Luth. Church	3411 WILCOX L-137 Lihue 96766
Barnes Pajon	Homeowner	4767 Hoamana Rd. Lihue 96766
Chuck Trumbull	Home	4152 Palamanu St. Lihue
MARINO & MERCEDES MARIN	AMFAC	4722 Hoamana Rd. Lihue
Ted & Loli Hagen	Lihue Lutheran Church	3429 Wihahine St Lihue 96766
A. SIIKARAIN	AMFAC	4634 Hoamana Rd.
Don Wilson	Belle's Graham ...	4334 Rice St # 202 Lihue
KEVIN V. PILLI	Homeowner	4726 HOOMANA RD Lihue 96766
MARIANO MARCEL	owner	4722 Ho. Rd.
JOHN LYNN SAKI	Homeowner	4766 Hoamana Rd Lihue HI 96766
WILLIAM V. BOND	Contractor	4216 IONA RD
ANNETTE CASSIDY		2829 MILOKAE LOOP, KOLOA 96756
Melma Mate		4706 Hoamana Rd Lihue

IMPROVEMENTS TO KAUMUALII HIGHWAY
Lihue to West of Maluhia Road

Public Hearing
 Wilcox Elementary School
 May 25, 2000

PLEASE PRINT

NAME	ORGANIZATION	ADDRESS
ANNIE McEVEETY		4533 HOOMANA ROAD LIHUE 96766
Owen Moe		P.O. Box 656 Kekaha HI 96752
ANN LEIGHTON		4555 HULL RD Koloa HI 96744
GREGG CAMPBELL	LIHUE BUSINESS COUNCIL RIZ & LEAHUE LUTHERAN	2970 MAHELE RD LIHUE HI 96766
Aileen Farias		4696 HOOMANA RD LIHUE HI 96766
William A. Farias		4696 HOOMANA RD LIHUE HI 96766
ED. KIRCHNER	LIHUE LUTHERAN CHURCH	4622 HOOMANA RD LIHUE HI 96766
DAVID NOVAK	SPRINGER	PO BOX 1021 LAHAE 96765
DAVID CLAWSHAW		
Joseph Reza	Retired State D.O.T.	4611 EKOLO ST LIHUE, KAUAI 96766
RICK HAYLSON	KOLOA COMMUNITY ASSOC	POB 1313, Koloa HI 96756
POOY LEE N. JOHNSON	CLUB	2100 W. ST. Koloa, HI 96756
Margie Thompson		Koloa HI 96744
BOY WASHIDA		3060 E. W. ST. Koloa
PAUL CHAFFIN	GARDEN ISLAND	P.O. Box 271, LIHUE, 96766
MONTE HULL	Sierra Club	2149-B Pua Rd, Koloa, HI 96741
Laura L. Cushman	Goodfellow Assoc., Inc.	P.O. Box 1090, Koloa HI 96756

**IMPROVEMENTS TO KAUMUALII HIGHWAY
Lihue to West of Maluhia Road**

Public Hearing
Wilcox Elementary School
May 25, 2000

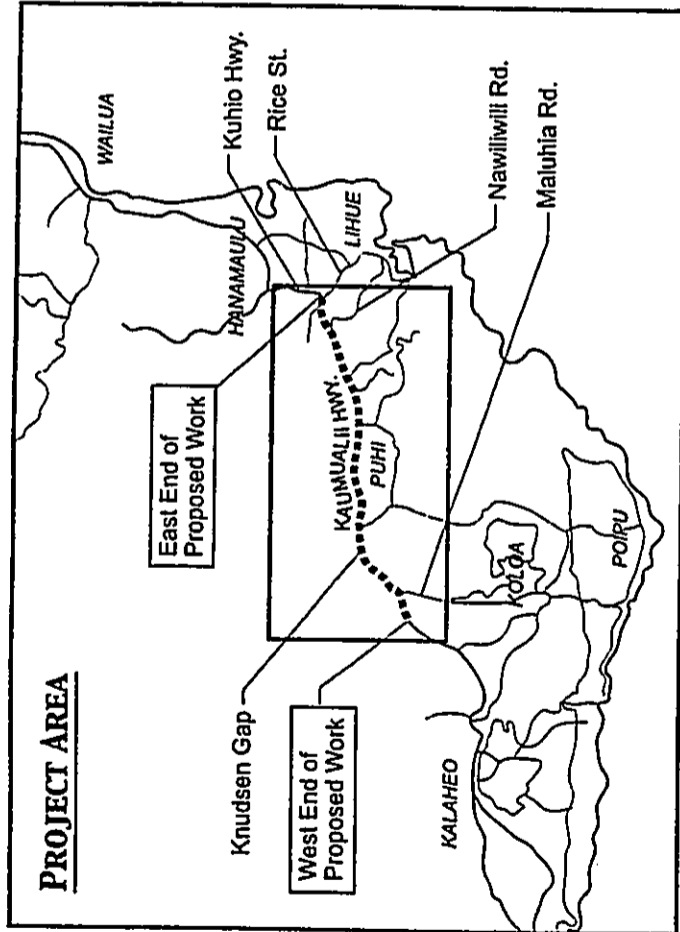
PLEASE PRINT

NAME	ORGANIZATION	ADDRESS
ERIC + TOM BOBBY	resident	P.O. Box 688 Hanalei 96746
TOM SHIGEMOTO	resident	4090 Peale St, Lihue, HI 96766
ERIC LAI LOU	DOJ	P.O. Box 1704, Lihue
CHARLES T. P. CO RAO		2891 Kaulahe 'St Lihue 96766
CHARLIE KING	Kauihi Chatham	4750 Kaulahe 'St Lihue 96746
John Nishok	n	3-1550 Kaulahe 'St Lihue 96766
KARZIL GARDNER	CITIZEN	P.O. Box 1883 Kapa 96746
FRED REVER	Kauihi Nursery	5207 Hanalei Rd Kapa 96746
Jerry Nishok	GoodFellow	3-1550 Kaulahe 'St Lihue HI 96766
Mae Nichols	GoodFellow	Po Box 26 Kapa HI 96746
LINDA NICHOLS	GoodFellow	Po Box "

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

IMPROVEMENTS TO KAUMUALII HIGHWAY LIHUE TO WEST OF MALUHIA ROAD

PUBLIC HEARING INFORMATION PACKET
MAY 25, 2000



WHAT IS THE PROJECT? WHERE WILL IT BE LOCATED?

The Hawaii Department of Transportation (HDOT) and the Federal Highway Administration (FHWA) propose to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway from Kuhio Highway in Lihue to Maluhia Road (see map above). The project would extend west of Maluhia Road to transition from the existing two-lane configuration to the future four-lane configuration at the Maluhia Road intersection.

WHAT IS THE STATUS OF THE PROJECT?

A Draft Environmental Assessment (EA) has been prepared and was announced in the May 8, 2000 edition of the State Environmental Notice. The purpose of the Draft EA is to disclose the environmental and social impacts that could result from the project, and provide the public with an opportunity to comment on the project. HDOT anticipates that this project will not cause a significant impact on the environment, but will re-evaluate this assessment following receipt of comments on the Draft EA.

WHY IS THIS PROJECT NEEDED?

Existing Capacity Deficiencies
Currently, travelers on Kaumualii Highway experience severe traffic congestion during peak periods. The town-bound section of Kaumualii Highway from Puhi to Lihue is very congested in the morning. Afternoon peak hour congestion is in the out-bound direction, and is particularly severe between the traffic signals at Nawiliwili Road and Puhi.

Future Transportation Demand
Expected population and economic growth in the southern part of Kauai is expected to increase travel demand between the southwest and southeast regions of the island. Since Kaumualii Highway is the only regional highway in south Kauai, the capacity of this highway, which is insufficient to accommodate current demand, will be even more overtaxed by future traffic volumes. Unless steps are taken to increase the capacity of this roadway, the level of congestion on Kaumualii Highway will continue to worsen.

Highway Safety Improvements

Kaumualii Highway is a safe roadway, but there are a few sections where sight distances are less than current highway safety standards. In addition, as traffic volumes increase, the possibility of head-on collisions also increases on a two-lane undivided highway. The project will improve motorist safety by increasing sight distances to current highway standards, and converting the highway to a divided roadway, which will substantially decrease the chance of head-on collisions.

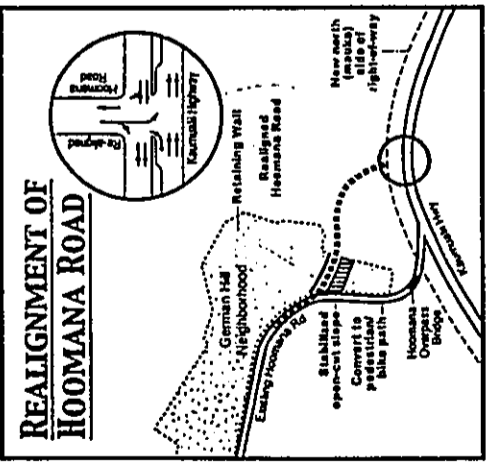
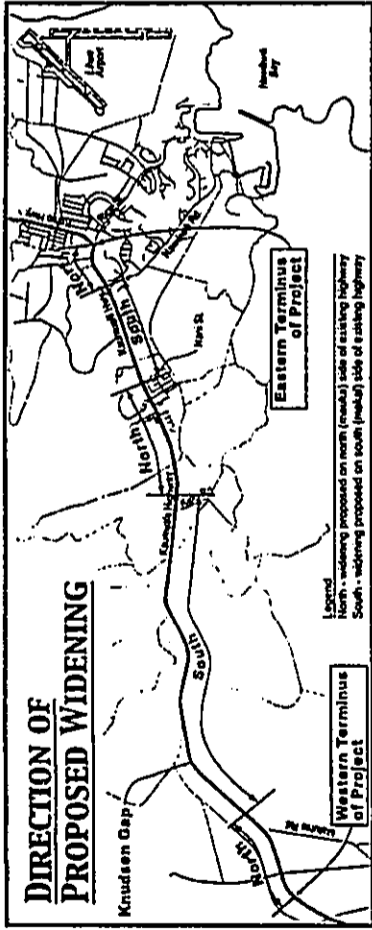
System Connectivity Improvements

A benefit of converting Kaumualii Highway to a four-lane divided roadway would be provided when major incidents (e.g., traffic accidents) occur that require lane closures. The use of cane haul roads as detours is becoming less reliable in areas where cane production has ceased, reducing the maintenance of these roads. The likelihood of a traffic incident blocking all four lanes of a divided highway will be highly unlikely. Therefore, the project will allow the flexibility to detour traffic flow around any major incident by using the unaffected roadbed of the divided highway.

WHAT IS BEING PROPOSED?

Within the project limits (from Kuhio Highway in Lihue to just west of Maluhia Road), Kaumualii Highway will be converted from a two-lane undivided roadway to a four-lane divided roadway. To avoid certain resources, the widening will occur alternately on the north (mauka) or south (makai) sides of the existing road (see map to the right). Notable changes to Kaumualii Highway will include left-turn lanes within the widened median, and new bridges over Nawiliwili and Huleia Streams. The existing bridges over these streams will remain but be modified for one-way traffic.

In Lihue, the project will widen Kaumualii Highway on the north (mauka) side to avoid Lihue Mill, Lihue Public Cemetery and a County baseyard facility. This north (mauka) side widening will force the relocation of the existing Hoomana Road Inter-section, which is the only access to the German Hill neighborhood. The new intersection of Hoomana Road with Kaumualii Highway will be approximately 300 feet east of the existing intersection (see map to the right). The re-aligned Hoomana Road will connect with the existing road shortly upon entering the neighborhood. The re-alignment will require the relocation of one residence located at the southern edge of the neighborhood.



WHAT ARE THE ADVERSE IMPACTS OF THE PROJECT? HOW WILL THESE IMPACTS BE MITIGATED?

The project's Draft EA contains detailed information on environmental impacts. It also includes measures that will help avoid, minimize or mitigate these impacts. In general, the project will not result in severe impacts because the widening will occur beside the existing Kaunuaʻali Highway. In addition, the widening will occur alternately on the north (mauka) and south (makai) sides of the existing highway to avoid certain important resources.

Agriculture
The project will convert inactive agricultural fields west of Puhi into transportation use, permanently removing such lands from future agricultural use.

Relocation
A residence on the southern edge of German Hill will be relocated due to the re-alignment of Hoomana Road. Fair market compensation will be provided to the owner, and relocation assistance will be provided. Since the residence is part of an historic neighborhood, relocating the affected structure elsewhere in the neighborhood will be explored if the owner is agreeable.

Wetlands
Approximately a quarter of an acre of wetlands located just west of Puhi beside Kaunuaʻali Highway will be filled. These wetlands will be replaced by creating new wetlands upstream. In addition, new drainage structures at this location will be designed to maintain the remaining and new wetlands.

Historic Resources
Lihue Mill Bridge is eligible for listing on the National Register of Historic Places. This bridge will be widened and its steel railings will be replaced. Although these railings are rusting and do not meet current safety standards, they are an important characteristic of the bridge that makes it historic. The replacement railings will be visually pleasing and meet safety standards. Nevertheless, the historic integrity of Lihue Mill Bridge will be adversely affected. Therefore, photo documentation of the bridge will be conducted.

WHAT WILL HAPPEN AFTER THE PUBLIC HEARING?

After reviewing comments on the project, if the SDOT and FHWA's bill believe that the project will not have a significant impact, they will prepare a Final EA and declare a Finding of No Significant Impact (FONSI). If this occurs, the FONSI will be announced in the State Environmental Notice. Next, design and right-of-way acquisition can begin, which is expected to last approximately two years.

HOW CAN I COMMENT?

You can provide comments at this public hearing. You can either write your own comments (comment sheets are available from the sign-in attendant), or you can provide oral comments to a court reporter stationed at this hearing who will transcribe your comments. If you choose to write your own comments, you can leave them here or mail them to:

Mr. Steven M. Kyono, District Engineer
Highways Division, Kauai District
State of Hawaii Department of Transportation
3060 Ewa Street, Room 205
Lihue, Hawaii 96766

Written comments will be accepted up to and on June 7, 2000.

WHAT ARE THE BENEFITS OF THE PROJECT?

Better Traffic Operations
With two additional lanes and a divided roadway configuration, Kaunuaʻali Highway would operate substantially better than if nothing is done. Based on projected 2020 traffic volumes, the highway will operate with relatively free-flow conditions during both the morning and afternoon periods, as opposed to highly congested conditions if no improvements were made.

Improved Highway Safety
In addition to improved traffic operations, converting Kaunuaʻali Highway to a divided four-lane configuration with a 28 foot wide median will improve highway safety by reducing the chance of head-on collisions, one of the most deadly types of incidences. The project will also correct sight distance deficiencies.

Increased Accessibility for Cyclists and Pedestrians
Convenience for and safety of cyclists and pedestrians using the highway will also substantially improve. The current four foot shoulder widths will be widened to ten feet on both sides of the highway, and bike lanes can be provided within these shoulders if needed. Where the highway traverses urban areas, sidewalks in compliance with the Americans with Disabilities Act will be provided.

WHAT IS THE COST OF THE PROJECT?

The construction and right-of-way cost in year 2000 dollars will be between \$75 million and \$110 million.

WHEN WILL CONSTRUCTION START? HOW LONG WILL IT LAST?

Due to funding constraints, the project will be constructed in phases. The first phase will extend from Kūhiō Highway in Lihue to Kōpu Road, a distance of approximately three miles. If approved, construction of this first phase could begin as early as 2003, and may last about two years. The availability of funding will determine the limits and schedule of subsequent phases.

WHERE CAN I GET MORE INFORMATION ABOUT THIS PROJECT? WHO CAN I CONTACT IF I HAVE QUESTIONS?

The Draft EA for this project, which is available at Lihue Public Library, contains more information about the project. If you have any questions, you can contact the State Department of Transportation Highways Division Kauai District office at (808) 274-3111.

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IMPROVEMENTS TO KAUNUALII HIGHWAY
LIHUE TO WEST OF MALUHIA ROAD
COUNTY OF KAUAI, HAWAII

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PUBLIC HEARING AND COMMENTS

Held at the Wilcox Elementary School, Lihue, Hawaii,
commencing at 6:00 p.m., on Thursday, the 25th of May,
2000, pursuant to public notice.

REPORTED BY: KATHY PEARSON, RPR-CSR No. 313
Notary Public, State of Hawaii

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RECORD OF PUBLIC COMMENTS

1. My name is Gregg Gardiner, and I'm here
as chairman of the Kauai Business Council.

The Kauai Business Council represents over
five hundred businesses on the island of Kauai and over
eight thousand employees. Our members include the
Kauai Visitors Bureau, the Kapaa Business Association,
the Lihue Business Association, the West Side Community
Development Association, and the North Shore Business
Council.

We wholeheartedly approve of the plans as
we've seen them here tonight, and support option B for
Hoomana Road. The Kauai Business Council has studied
the environmental impact, the draft environmental
impact statement, and compliments DOT for doing a very
thorough job. And we are looking forward to seeing
this project receiving a finding of no significant
impact, proceeding to planning and development at the
earliest possible stage.

2. Paul Kirchner, 4602 Hoomana in Lihue. I
guess I'm representing Lihue Lutheran Church and Palama
Keiki preschool.

Basically we're very appreciative of the
work. Improving of the intersection there is going to
help our program, our ministry. We're looking to

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1 expand, and it will help our traffic flow. So we're
2 just very favorably impressed, and look forward to
3 seeing it going to fruition as quickly as we can.

4 3. My name is William Farias, 4696 Hoomana
5 Road.

6 We've been residents on Hoomana Road for the
7 past 26 years, and we approve the realignment and the
8 entrance to Hoomana Road. I think it will make it
9 safer for the preschool children coming in and out of
10 the road to the main highway. And the walkway area
11 that they're designing, the walk path, I think that's a
12 nice addition, and also saving the historical bridge.

13 4. Doug Yonegi. Should have been done ten
14 years ago.

15 5. Laura Cushnie, P. O. Box 1882, Koloa,
16 Hawaii.

17 It seems that there's excellent planning, a
18 lot of foresight, and I support the project. As far as
19 the planning, the pedestrian pass is an asset. The
20 German Hill seems to be an asset. And preservation of
21 the bridge, that's a lot of foresight. Planning at
22 this stage is good foresight.

23 6. Ralph Cushnie. Looks like a well thought
24 out design, and I think it should go. That's pretty
25 much it.

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2 7. Fred Reyes, 5207 Hauaala Road, that's
3 Kapaa, 96746.

4 I'm in favor of the project. And I also
5 would like to recommend DOT putting a new over-crossing
6 at Maluhia Road. An over-crossing would be for
7 westbound Kaunualii to southbound Maluhia traffic.
8 Because it's going to be very difficult for people to
9 make a left-hand turn during the peak morning rush hour
10 from seven a.m. to eight a.m., basically. It's going
11 to be very hard for them to make that left-hand turn
12 into the tree tunnel when you got all this Lihue bound
13 traffic. I prefer that --

14 I understand they might be putting a traffic
15 signal in. But to me, the people have to get to work.
16 They don't want to be slowed down by traffic lights,
17 you know. To me, it's in the middle of nowhere, you
18 know, a rural area. So I would rather not have a
19 traffic signal. Just go straight and prevent accidents
20 by having a separation.

21 8. Charlie King.

22 Looks wonderful. It's a plan that's long
23 overdue, and I hope they keep moving with it as soon as
24 they can. I think the process was very good, much
25 better than the normal public hearing.

9. David Crawshaw, Box 1081, Lawai, 96765.

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1 I'm against expanding the highway because I
2 think it makes the island less rural. And there will
3 still be a bottleneck traffic jam in Puhi. And I favor
4 going around Lihue with a secondary road built from the
5 tunnel of trees. And an alternative road would be good
6 in case of disaster.

7 I lease a farm makai at Halfway Bridge, and
8 I'm concerned flow not be a stream through the
9 property. And I would like to be contacted when
10 designing happens. And I also want to have access to
11 property. I presently have a right of way under
12 Halfway Bridge, and I don't want that to be blocked,
13 especially during construction. And I prefer a traffic
14 light at Halfway Bridge over creating accesses under
15 the bridge.

16 I think every big tree removed should be
17 replaced by a big tree, or landscaping that is an
18 improvement over the existing landscaping. Make it a
19 garden island, not a highway island. Spend millions on
20 landscaping.

21 10. Marge Freeman, 6448 Kaahele, Kapaa.

22 There should be no four lane roads on this
23 island, now or ever. If you're going to cut roads, put
24 wires underground. Next time you're going to put them
25 underground anyway, in ten or twenty years we're going

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1 to finally put them underground, and it will be just a
2 waste of money to have cut it once and cut it again to
3 put it underground. Put them underground now.

4 Put trees on all highways. Not just grass
5 because it's so easy to cut, which is what they told us
6 a year ago they were planning to do. A light rail
7 system and forget the four lanes. Two alternative
8 lanes somewhere else, no four lanes.

9 He said that in 1954 there was a whole island
10 plan, because he used to work for the highway
11 department, and it had no four lane roads. It had
12 alternative roads. What happened to the imagination
13 and the alternative routes? Where is everybody? This
14 is a rote, kind of. It's an ugly rote project. No
15 brain has gone into this. They ought to be thinking
16 with a little bit of brain. We don't want this stuff.

17 You know, you guys asked us to write our
18 congressman to get money for this project. I told
19 everybody that I knew not to write, because we don't
20 want the money, because then you have to do your kind
21 of dumb design. Until you come up with these designs,
22 we ought to say no highways. So someday I want
23 somebody to think.

24 No bike paths like the ones picked on the
25 shoulders. They're too dangerous. You're going to

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1 just kill people right and left. They're not bike
2 paths, they're death traps. And you shouldn't be
3 encouraging people to bike beside roads like that when
4 they're so dangerous.

5 Nothing's right with this project, not one
6 thing.

7 11. Monte Hull, 2149 B Puu Road, Kalaheo,
8 96741.

9 There shouldn't be a four lane highway put
10 in. That they should consider alternatives, like a
11 Lihue bypass. The main problem with congestion now is
12 due to the stoplights in the Puhi to Nawiliwili Road
13 section, and a bypass would allow cars to circumvent
14 those stoplights. Widening the highway on the west
15 side of Puhi is basically just creating a large parking
16 lot, because there's not congestion there, it's due to
17 the stoplights.

18 They say that they are only considering a
19 road widened for bureaucratic reasons. In other words,
20 that's their option. That's putting bureaucratic
21 limitations before community well-being and benefit.
22 The decision should be based on the community's actual
23 long-term needs rather than some bureaucratic rule or
24 procedure.

25 Some more specific things. The Hoomana Road

1 realignment is creating a potential death trap, because
2 it's going to come in at the bottom of two hills with
3 curves, with road improved to increased speeds so that
4 cars pulling out, particularly making a left turn off
5 of Hoomana Road, will have to go across two lanes of
6 traffic and into other oncoming traffic, even though
7 there's a little entry lane. It's still extremely
8 dangerous.

9 I want to know where they got their 2020
10 projections. This seems entirely suspicious, because
11 with the general plan update that's going on in Kauai,
12 there's been a very large range of projections, and
13 it's going to depend on other forms of development. So
14 to pull out a set of projections without any visible
15 support and say this is what's going to happen is
16 potentially misleading.

17 So they need to consider a range of
18 projections, and also to show the source of the
19 projections so we can see whether they're reliable
20 projections or not.

21 Another concern is this is called a public
22 hearing, but in fact it's not a public hearing in the
23 sense that it is primarily an open house. This
24 prevents the community from coming together as a group
25 to have a dialogue as a group and as a community with

1 they show the present highway with utility poles up.
 2 They show the improvement with no utility poles up.
 3 Presumably they're off the edge of the picture, but it
 4 gives a completely distorted picture of what the scene
 5 will be.

6 The same sort of distortion happens in
 7 another way with Maluhia Road. They show the
 8 intersection at Maluhia Road as it is now at present,
 9 and they show it supposedly as it will be after the
 10 highway expansion. The primary thing that's visible
 11 are the trees at the end of the tree tunnel, and these
 12 remain the same.

13 However, all that you can see of the future
 14 road is simply the two Lihue bound lanes and only part
 15 of them. So the effect is to see something very
 16 dissimilar to what is the case. What is left out of
 17 the picture are the median strip and the other two
 18 lanes.

19 In other words, you have a massive four lane
 20 highway in front of the tree tunnel as opposed to a
 21 present two lane rural road in front of the tree
 22 tunnel. This is an extreme different character, and
 23 totally changes the atmosphere and the environment of
 24 the place.

25 Since the general plan update has said over

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1 the Department of Transportation.

2 In other words, we go through one at a time,
 3 speaking to one person at a time, who reassuringly says
 4 you can write comments and they will be heard, but
 5 that's a very different sort of community interaction
 6 than having a hearing where different members of the
 7 community testify, other members of the community hear
 8 that testimony and respond to it. A sense of consensus
 9 can often develop and a better sense of real community
 10 feeling can be conveyed.

11 This simply records individuals' comments and
 12 defuses any sort of community sentimental consensus.
 13 It's very effective if you don't want to hear
 14 something.

15 It is possible to have both an open house and
 16 a community hearing, and this was done at the PMRF
 17 testimony regarding expansions out at PMRF. They had a
 18 public hearing going on where the record was kept and
 19 people were talking and there was a very large
 20 gathering, and they also had the informational display
 21 set up for these people who wanted to get more
 22 information and talk to individual members of PMRF.
 23 That would be a much better approach.

24 There are problems with the display here.
 25 For example, with the photos around the sugarcane mill.

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1 and over again that one of the most important things of
2 Kauai is this rural character, both for the quality of
3 life of people living here and for the visitor
4 industry, to do things that denigrate and destroy the
5 real character is bad for the citizens and bad for the
6 economy.

7 To leave that four lanes out of the picture
8 and how it affects the character of the place was
9 probably unintentional, but that doesn't matter. It is
10 just as deceptive whether it's unintentional or not.

11 I would also like to comment on the present
12 road widening by Kuhio Highway where it intersects
13 Kaunualii. It is one of the ugliest additions to the
14 Lihue area in recent years. There's a guardrail, an
15 asphalt sidewalk, a cement wall, and a high silver
16 fence where there used to be trees. There seems to
17 have been no attempt to make any sort of aesthetic
18 considerations. It looks the same as the roadside in
19 Chicago or L.A., or anywhere else. It does not look in
20 any way like Kauai or Hawaii, and it is ugly.

21 As far as the format of the hearing, they
22 also had a better format at the Department of
23 Transportation, Airports Division, where they had a
24 public hearing. Well, it was officially an
25 informational meeting. I guess, but they had the public

gathered and speaking with a facilitator, and they also
had about a half dozen or more specialists on each area
that was going to be impacted.

And they also had court reporters to take
comments, so that there was a period during which there
was a public hearing where everybody was speaking, and
there was a period during which the members of the
public were able to go over to talk to individuals and
record their comments to a court reporter. That was in
the Department of Transportation.

I'd like to thank the members of the
Department of Transportation. They're very civil, very
kind, diplomatic, and they very strongly encouraged
public input. I think they're utterly naive and
hopefully not dishonest in saying that this will be
heard, but I hope that it will not just be responded,
maybe it will actually be heard and attended to. I
thank them for coming.

12. Jerry Nishek with Kauai Nursery.

My comments are, looks like it's going to be
a great project. I think it's much needed, because I
live on the west side of the island and I commute in
every day to work through there, and the traffic seems
to be getting worse every year. And I don't think it's
going to adversely impact the environment or anything

1 that I can see.

2 So I think it's going to be a big improvement
3 that will be much needed in the future on Kauai.

4 13. Tom Shigemoto, 4090 Puaole Street,
5 Lihue.

6 I'd like to say, I've lived here all of my
7 life, and what we got in the plan, I like everything
8 that's being proposed about the plan. I am for it.

9 You know how local people aren't in big
10 numbers here tonight, because it's not really their
11 style to come out to these hearings to testify. But
12 I'll bet you that there are a ton of people who live on
13 the west side, that if they knew the public hearing was
14 going to consist of testimony one on one like this,
15 they would be here and they would be all for this
16 project.

17 I work out in Poipu, so I travel that route
18 every day from Lihue to Poipu. And as far as the new
19 highway goes, it really won't impact me directly, but I
20 see these folks waiting in line every morning, and I'm
21 stuck in traffic coming in to Lihue after work. And
22 it's just an improvement that we really need.

23 14. Leland Nishek with Kauai Nursery.

24 I think it's a well thought out project. I
25 like the bridge in Lihue where it shows the power line

1 going underground or being relocated so it's not in
2 visual view. And I would like to recommend that they
3 put the power line underground at the Maluhia Road
4 intersection to Kaunualii Highway so it doesn't
5 obstruct the view of the natural beauty of the trees.

6 And I would like to see them do a landscape
7 plan along with the highway improvements. And doesn't
8 have to be continuous, but groupings of trees here and
9 there or groupings of landscaping at strategic points
10 to make the highway more interesting instead of just
11 grass and open area. It's a garden island, so we have
12 to keep it as a garden island. Add in some colorful
13 ground cover, shrubbery. Not along the highway, just
14 at strategic points and intersections just to make it
15 more interesting.

16 I like the process of this hearing of how
17 they have it set up, where we can meet with the
18 engineers who have done the design work, and very
19 informative, able to answer a lot of the questions that
20 we have. Makes us better informed. And the sooner
21 they can start, the faster they get done, the better.
22 Thank you.

23 15. Karen Taketa, 4756 Kua Road, Kalaheo.

24 I am in total support of the improvements to
25 Kaunualii Highway, and I hope it can be done rather

1 soon rather than later. I am one of hundreds, if not
2 thousands, stuck in that traffic in the morning and in
3 the afternoon.

4 I'm very concerned that once the
5 signalization in Puhi by the new school goes on in the
6 summer that we may not ever come into Lihue or leave
7 Lihue.

8 And I think the alignment is a good
9 alignment. I think the project in its totality is a
10 positive one, is a proactive one, and we commend the
11 Department of Transportation for being proactive for
12 once. I think that's about all.

13 16. Joe Rosa, retired DOT.

14 One thing first. I'm totally against the
15 proposal that the DOT has. It's something that is
16 going to take from seven to ten years to complete when
17 it can be done in less time and probably cheaper.

18 I say this because there's an existing Grove
19 Farm haul cane road that's not in use right now. And
20 it's there. All they have to do is probably blackout
21 the thing and do some other safety improvements, like
22 guardrails and some of the alignment of the curves and
23 something out there.

24 The thing, that road is in existence since
25 1949. That's when Grove Farm laid the tunnel that goes

through the mountain, to get the sugarcane from Lihue
to Koloa mill. The road base is just as good as any
highway, because there was thirty tons of cane being
hailed on those roads in those trucks. So the
compaction on the road was excellent. So I said, all
that would be needed is the blackout, the asphalt.

If I was living on the west side, I would use
that road coming in from the Knudsen Gap area, because
it would take me down on that haul cane road, take me
on the existing road all the way. I can get into Lihue
on it. And it will take me all the way to Nawiliwili
and Pikake Street that's in back of K-Mart. And that
will give me only one stop right by that intersection
whereas the other might have five signal lights.

So the thing is also, that I don't think it
will cost as much as what they intend to do, because
you'll have to provide detours for the public. And
working with the public is something, that is something
that is treacherous, because the people get so upset
and everything because, like they were telling me in
other places.

I said, by using those roads, reconstruction,
you don't deal with the public and you don't have to
spend extra money making those detours. So it's a
plus.

1 That's why I look, I would like to see them
 2 utilize those roads, because it's not being used right
 3 now. Take the tunnel that the plantation has. Because
 4 you can bring that road also from the Koloa area, from
 5 the Hyatt area, and keep the traffic from going into
 6 Koloa town and coming up Maluhia Road into the
 7 Kaunualii Highway and causing congestion. So you're
 8 splitting up the traffic. Getting less on the traffic
 9 from Koloa on Kaunualii Highway.

10 The tunnel Grove Farm has there is suitable
 11 for two lane highways. All that needs to be done is
 12 have an encasement, concrete lining, put two vents
 13 letting out the fumes of the cars, put a lighting
 14 system in it like they have up in Honolulu, those
 15 highway tunnels, and you got it. It can be utilized.
 16 The roads are wide, like I say, they're over fifty feet
 17 wide. So as far as that, just have it blacktopped and
 18 utilize it.

19 And right now Grove Farm, I think they're in
 20 negotiation stage. They need money. They're money
 21 hungry right now for the use of selling land, the roads
 22 like that. So it can be probably had at a bargain, a
 23 bargain price. Go make an offer. Only that way you'll
 24 know. You don't talk, they don't know.

25 I emphasized earlier, when you reach

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1 Nawiliwili and Pikake intersection, there's a signal
 2 light. You'll have to add another one. To further
 3 alleviate the problem at Hoomana and the mill bridge,
 4 continue the road down to Nawiliwili Road and you cross
 5 the valley just before the -- I forget the side road
 6 that they call that goes to the high school. There's
 7 an opening that goes across the valley, and it will
 8 take you to the Kapule and Rice Street intersection.
 9 And then from there on, you just tie into Kapule
 10 Highway.

11 That will alleviate the problem of traffic
 12 going into Lihue on the way to Kapaa, going Hanamaulu
 13 or Wailua, because there's another alternate route to
 14 get out of the town and alleviate the congestion in the
 15 town and that Hoomana and the bridge area.

16 Here on Kauai, I live here my 68 years, and
 17 the thing is, there's still too many one way in, one
 18 way out highways. And the last thing I know was done
 19 in 1936, because my family had to be relocated from by
 20 where the Hoomana Road intersection is close by, at
 21 that time the highway division, because they ran the
 22 highway there.

23 That's how long ago that any kind of
 24 improvements have been made as far as getting out of
 25 Lihue. It's still one way in, one way out. You got a

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1 major exit, that's it, by Kukui Grove. You can't get
2 out of the town. They should have other sources of
3 getting in and out of towns.

4 By using that Grove Farm haul cane roads,
5 they'll cut down the actual construction time, as I
6 say, like they targeted it from seven to ten years, to
7 probably three to five years. It will cut it in half.

8 So that's why I think that government should
9 realize something that's out there in existence that
10 can be used instantly to get ahold of the problems
11 efficiently. That's about it. To me, something for
12 them to think about.

13 Mr. Kazuo Hayashida, he should be aware that
14 there's only one way in and one way out. High time
15 they utilize those roadways that's not been in use by
16 the plantations or anybody else. And even if it's
17 being used by the plantation, just like the one at the
18 Kapaa alternate road that they have, I don't see why
19 they can't work together like they do on the big
20 island, and the plantations were in existence on the
21 big island. Haul cane trucks used to use the state
22 highways, and they run side by side.

23 So the same thing over here. We can use it.
24 When the time needs plantation to haul any kind of cane
25 or equipment or whatever, no problem. It was done long

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ago in the big island.

Also I think it will cut down costs on
environmental impact studies to a minimum, because on
the existing one there's about four or five places that
they have to do because of marshlands and stuff.
Existing roads are so wide that they're not going to
utilize. There might be some areas they might have to,
but I think it was last year we had problems with the
existing highway.

A lot of this stuff here, the engineers are
not aware of what's on this island because they're in
Honolulu. Even Steve here, when I was working with the
state, he wasn't even around. He was a schoolboy
working with us as a summer helper. So I think they
should look into it.

Also our legislature representatives should
look into things like this here. The tunnel, like I
said, was built for sugar. Sugar is dead. Why not the
state purchase it and utilize it. That would help
alleviate the highway congestion that we have getting
in and out of Lihue.

Good night. I'm speaking for other taxpayers
and myself. I hope they give it a thorough
consideration. I've talked to other people, and they
all same, too. Hey, that sounds good. Give it serious

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1 thought.

2 To the committee, Mr. Hayashida, his staff in
3 Honolulu, coming from one of the old DOT retirees, 36
4 years. So I guess I know, because I'm saying things
5 that is positive, and not only out of the clear blue
6 sky. I'm not an engineer, but I think I can save the
7 state a lot of dollars and cents. Mahalo.

8 (Hearing closed at 9:00 p.m.)
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C E R T I F I C A T E

STATE OF HAWAII)
COUNTY OF KAUAI)

I, Kathy Pearson, CSR, a Notary Public in and
for the State of Hawaii, do hereby certify:

That on Thursday, the 25th of May, 2000,
commencing at 6:00 p.m., that the above-mentioned
public comments were taken by me in machine shorthand
and thereafter reduced to typewriting under my
supervision; that the foregoing represents, to the best
of my ability, a true and correct transcript of the
proceedings had in the foregoing matter.

I further certify that I am not an attorney
for any of the parties hereto, nor in any way
interested in the outcome of the cause named in the
caption.

DATED: May 31, 2000

Kathy Pearson
Kathy Pearson, CSR No. 313
Notary Public, State of Hawaii

My commission expires:
July 12, 2002

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APPENDIX B

Endangered Species Act (Section 7) Coordination Letters

**National Historic Preservation Act (Section 106)
Coordination Letters**

**Section 106 Memorandum of Agreement
Regarding Lihue Mill Bridge**

Clean Water Act (Section 404) Coordination Letter

Farmland Protection Policy Act Coordination Letters

**Programmatic Section 4(f) Determination and
Approval for Use of Lihue Mill Bridge**

September 11, 1998

Mr. Thomas Telfer
Wildlife Manager
Division of Forestry & Wildlife
3060 Eiva Street, Room 306
Lihue Kauai 96766

Dear Mr. Telfer:

Re: Draft Faunal Survey Report
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95


The State Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigation/studies for the design of highway improvements for Kaunualii Highway. As part of our work on this project, we will be preparing an environmental assessment. The project is approximately 7.5 miles long beginning at the Lihue Mill and extending to a point about a half mile beyond the junction of Maluhia Road (see enclosed map entitled "Improvements to Kaunualii Highway Lihue to West of Maluhia Road").

A report by our faunal consultant identifies two stream crossings and three wetland areas within the project. A copy of this report is enclosed for your review and comments.

Should you have questions or desire additional information, please feel free to contact us. Your earliest response will be appreciated.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

cc: DOT- Kauai, attn: Steve Morikawa

TC 26 Folder 595



HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE

KAUAI DISTRICT
3000 BWA STREET, ROOM 306
LIHUE, KAUAI, HAWAII 96766-1878

September 14, 1998

IN REPLY REFER TO

Mr. Reginald Suzuka
Vice President
Park Engineering
Suite 300 Kawahao Plaza
567 South King St.
Honolulu, HI 96813-3036

Dear Mr. Suzuka:

Re: Draft Fauna Survey Report
Improvements to Kaunualii Highway
Project No. 50DE-02-95

As per your 11 September 1998 request for review and comment on the subject draft, I offer the following:

Dr. Phillip Bruner's assessment of wildlife in the Kaunualii highway corridor appears to be adequate for what is found in the area. The vegetation in the project area is highly altered from native conditions. It is inhabited primarily with non-native plants and animals. No significant habitat exists that is likely to be adversely affected by the highway improvements proposed.

One area of concern that should be considered however, is that of native seabirds that traverse the area during the autumn months (usually October and November) each year. The Newell's Shearwater, *Puffinus newelli*, is a threatened species that nests in the interior mountains not far from the proposed highway project. Young fledgling birds of this species fly out to sea only after dark, and are attracted to bright lights and headlights of cars. They become momentarily blinded by the lights and are unable to see utility wires and fly into them, or sometimes become confused and just land exhausted on the highway or other brightly lit areas. In some years as many as 2,000 shearwaters have been victims of this problem on Kauai. Fortunately most of them are returned to the wild by a recovery program. Over the past several years, there have been a few birds recovered along the highway project corridor under consideration. The greatest concentrations have been at the Maluhia Junction about 6.5 miles west of Lihue, and at the intersections at Puhī and Kukui Grove. Street lights appear to be one of the

Mr. Reginald Suzuka
September 14, 1998

page 2

exacerbating factors with this light attraction problem. Any new street lights planned along this section of highway or at intersections along the way, should be of the shielded, or "cut-off" luminaire type, that do not allow lateral escapement of bright light. It appears that the use of these types of lights has aided in the reduction of the light attraction problem on Kauai. A brochure describing the problem, and methods to reduce it is enclosed.

Should you have any other questions concerning the above, please feel free to contact me. Thank you for the opportunity to review.

Sincerely,



Thomas C. Telfer
District Wildlife Manager

August 6, 1998

Mr. Robert P. Smith
Pacific Island Manager
U.S. Fish & Wildlife Service
P.O. Box 50088
Honolulu, Hawaii 96850

Dear Mr. Smith:

Re: Draft Faunal Survey Report
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95


The State Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigation/studies for the design of highway improvements for Kaunualii Highway. The overall length of the project is approximately 7.5 miles long (Refer to enclosed map entitled "Improvements to Kaunualii Highway Lihue to West of Maluhia Road").

A report on our faunal survey identifies two stream crossing and three Wetland areas along the project. A copy of this report is enclosed.

We understand that a Wetland Assessment Report is required when a project impacts "Endangered" or "Threatened" species. The enclosed report suggests that the project is not likely to impact "Endangered" or "Threatened" species. Your review and comment(s) on this report are requested, especially with respect to whether a Wetland Assessment Report is required. Your earliest response on this matter will be appreciated.

Sincerely,

PatEn, Inc.
dba-PARK ENGINEERING



Reginald Suzuka
Vice President

cc: DOT- Kauai, attn: Steve Morikawa

TC 26 Folder 595

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Ecoteam
300 Ala Moana Boulevard, Room 3-122
Box 50083
Honolulu, Hawaii 96850

SEP 23 1998

In Reply Refer To: CAW

Reginald Suzuki
Vice President
Park Engineering
Suite 300, Kawahao Plaza
567 South King Street
Honolulu, Hawaii 96813

Re: Draft Faunal Survey Report Improvements to Kaunuaui Highway, Lihua to West of
Maluhia Road (Koloa) Kauai-Environmental Studies Project No. 50DE-02-95

Dear Mr. Suzuki:

The U.S. Fish and Wildlife Service (Service) has reviewed your July 27, 1998, letter seeking comments relative to the completeness of the Avifaunal and Feral Mammal Survey for Kaunuaui Highway Improvements conducted by Phillip Bruner. The project sponsor is the State of Hawaii's Department of Transportation. The surveys were conducted along the 7.5 miles of Kaunuaui Highway between Lihua and Maluhia Road (Koloa) Kauai. The Service offers the following comments for your consideration.

The following project information was provided in a phone conversation between yourself and Service Biologist, Christian Willis on September 9, 1998: (1) the proposed project is to expand the width of a 7.5 mile portion of Kaunuaui Highway by two car lanes; therefore, the proposed project will likely impact several wetlands and streams along the Kaunuaui Highway, (2) your office has contacted the U.S. Army Corps of Engineers (USACE) regarding requirements under the Clean Water Act, and (3) your office is currently preparing an Environmental Assessment (EA) to address the potential impacts from the proposed project. As discussed during our phone conversation, the following are some of the concerns that the Service would like discussed in the EA for the proposed project.

Draft Faunal Survey Report
Kaunuaui Highway
Project No. 50DE-02-95
Page 2 of 3

1) Direct and Indirect Impacts to Hawaii's endangered waterbirds.

Based on the avifaunal and feral mammal report and our knowledge of the area along Kaunuaui Highway, we concur with the report findings that the following federally listed endangered waterbirds: the Hawaiian duck (*Anas wyvilliana*), the Hawaiian stilt (*Himantopus mexicanus knudseni*), the Hawaiian coot (*Fulica alai*), and the Hawaiian moorhen (*Gallinula chloropus sandvicensis*) may occur in any of the wetlands and stream crossing along the proposed project area. However, the Service can not concur with the report findings that there will be no impacts to waterbirds as a result of the proposed project. The Service believes that the proposed project may impact these birds. To assist in the review of the EA, we recommend that the EA describe the proposed construction activities and identify the expected amount of waterbird habitat loss. The EA should also address potential indirect impacts, such as changes in hydrology or potential increases in road-related contaminants (i.e. oil, grease runoff) that may wash into Huliea Stream and tributaries that feed into Papekolea Stream. It should be noted in the EA that the water collected in this watershed is essential to the operations of the Huliea National Wildlife Refuge (NWR), which was established to provide endangered waterbird habitat. Huliea NWR currently relies on the available clean water from Papekolea Stream for taro lo'i and may one day rely on Huliea Stream to provide water for additional waterbird habitat.

2) Indirect impacts to aquatic habitats and associated wildlife.

The Service is concerned that the proposed project may have impacts to aquatic species downstream of the proposed project site. Therefore, surveys of the aquatic environment should be included in the EA. These surveys should include information on native vertebrate and invertebrate species found within the streams currently crossed by Kaunuaui Highway. To minimize the degradation of water quality and impacts to fish and wildlife resources and habitats the Service recommends that the following measures be incorporated into the project:

1. No construction materials should be stockpiled in the aquatic environment;
2. All construction equipment placed in the water should be free of pollutants;
3. No contamination of the aquatic environment (trash or debris disposal, etc.) should result from project-related activities;
4. A contingency plan to control petroleum products accidentally spilled during construction should be developed. Absorbent pads and containment booms should be stored on-site to facilitate the clean-up of petroleum spills; and
5. Turbidity and siltation from the proposed work should be minimized and contained to within the vicinity of the site through the use of effective silt containment devices and the curtailment of work during adverse weather conditions.

Draft Faunal Survey Report
Kaunualii Highway
Project No. 50DE-02-95
Page 3 of 3


3) Impacts of additional lighting to migrating seabirds.

Finally, the Service request information on any proposed lighting improvements along the highway, and recommends that the proposed project description address potential impacts of the lighting for the highway improvements on the endangered dark-rumped petrel (*Pterodroma phaeopygia sandwichensis*) and the threatened Newell's shearwater (*Puffinus newelli*). These two species nest in forested, inland areas and migrate to the sea at various times of year. All seabirds are protected under the Migratory Bird Treaty Act. Although the birds do not inhabit the immediate project area, birds either flying in from the sea to nesting areas or heading back out to sea to feed, can become disoriented by the lights and collide with man-made structures that can kill or injure them. Therefore, new lighting associated with the proposed highway improvements could create an attractive nuisance for these seabirds. Injured seabirds that "fall-out" from collisions are highly vulnerable to predation by dogs and cats. To reduce these potential impacts the Service recommends the following measures be incorporated into the project:

1. Light poles should be limited to a height of 25 feet. Lights situated on higher poles are more likely to cause seabird fall-out than are lights on lower poles.
2. All lights used in this project should be directed downward, be shaded to prevent light from escaping horizontally, and be as low wattage as possible. It would also be helpful if the lighting is of muted colors instead of a bright white.
3. We also recommend contacting Tom Telfer at the Department of Land and Natural Resources, Division of Forestry and Wildlife, 3060 Eiwa Street Lihue, Hawaii, 96766, for other possible recommendations.

The Service appreciates the opportunity to comment on the draft study and provide technical assistance in the preparation of the EA. If you have questions regarding these comments, please contact Fish and Wildlife Biologist Christine Willis at 808/541-3441.

Sincerely,


Robert P. Smith
Pacific Islands Manager

cc: USACOE, Honolulu
DLNR, Hawaii

February 10, 1999

Mr. Robert P. Smith
Pacific Islands Manager
U.S. Fish & Wildlife Service
300 Ala Moana Blvd., Room 3-122
Honolulu, Hawaii 96850

Dear Mr. Smith:

Re: Draft Environmental Assessment
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

This is in reference to our letter of August 6, 1998 and to your letter of September 23, 1998 in response thereto. We are transmitting herewith an advance copy of the Draft Environmental Assessment for this project that addresses the comments in your letter. The following is provided to facilitate your review of our responses to your comments:

1. Describe the proposed construction activities and identify the expected amount of waterbird habitat loss.
The construction activities and areas of Wetlands that will be loss are discussed in section 5.2.7.
2. Potential indirect impacts on hydrology.
The potential impacts on the hydrology of the project area is presented in section 5.1.4.
3. Potential indirect impacts on increase in road-related contaminants that may wash into Huleia Stream and tributaries of Papakolea Stream.
The impact of the potential increase in road-related contaminants is discussed in section 5.1.4.
4. Note the importance of the waters in the watershed of the Papakolea and Huleia streams to the operations of the Huleia National Wildlife Refuge in the EA.
The importance of these waters to the Wildlife Refuge is noted in section 5.1.4.

Draft Environmental Assessment
USFWS letter of September 23, 1998
February 10, 1999
Page 2 of 2

5. Surveys of the aquatic environment and species within the streams crossed by the project.

The survey of aquatic species is discussed in section 5.2.4 and the report by Michael H. Kido in APPENDIX "D".

6. Measures to minimize the degradation of water quality and impacts to fish and wildlife resources and habitats.

Mitigation measures to minimize the degradation of water quality and impacts to fish and wildlife are presented in sections 8.1, 8.3 and 8.4.

We trust the above addresses your comments satisfactorily. Your review and comments on this advance copy (of the Environmental Assessment) will be appreciated.

Sincerely,

Reginald Suzuki
Vice President
Park Engineering
dba PARK ENGINEERING

Reginald Suzuki
Vice President

cc: DOT- Kauai, attn: Steve Morikawa

TC 26 Folder 595



United States Department of the Interior
FISH AND WILDLIFE SERVICE

Pacific Islands Ecoregion
300 Ala Moana Boulevard, Room 3-122
Box 50088
Honolulu, Hawaii 96850

In Reply Refer To: CAW

Reginald Suzuki
Vice President
Park Engineering
Suite 300, Kawaiahao Plaza
567 South King Street
Honolulu, Hawaii 96813

MAR 11 1999

Re: Draft Environmental Assessment for Improvements to Kaunualii Highway, Lihue to West of Maluhia Road (Project No. 30DE-02-95), Lihue, Kauai, Hawaii

Dear Mr. Suzuki

The U.S. Fish and Wildlife Service (Service) has reviewed your January 1999 Draft Environmental Assessment (DEA) for Improvements to Kaunualii Highway, Lihue to West of Maluhia Road, Lihue, Kauai. The project sponsor is the State of Hawaii's Department of Transportation. The Service offers the following comments for your consideration.

GENERAL COMMENTS:

The Service does not believe that the DEA adequately assesses the potential impacts of the proposed project or addresses the concerns outlined in the Service's letter dated September 23, 1998 (see section 9 of the DEA). The Service believes that the Avifaunal and Feral Mammal Survey, Botanical Resources and Wetlands Assessment, and the Aquatic Species Survey and Biological Assessment Study were adequate and do provide adequate information to determine the existing conditions. However, during our review of the DEA, we found that some of the information contained in the surveys was omitted from relevant sections, making the DEA incomplete or misleading with regard to potential project impacts.

Because of the inadequacy of the DEA the Service is unable to conduct a proper evaluation of potential impacts that may result from the proposed project. Therefore, the Service does not concur with the Negative Declaration determination for the proposed action.

Draft EA
Kaunualii Highway
Page 2 of 3

SPECIFIC COMMENTS:

Page 9: Section 5.2.2

In our Avifaunal and Feral Mammal Report, the federally protected waterbirds, the Hawaiian duck (*Anas wyvilliana*), the Hawaiian stilt (*Himantopus mexicanus knudseni*), the Hawaiian coot (*Fulica alai*), and the Hawaiian moorhen (*Gallinula chloropus sandvicensis*), were not observed at the time of the survey. However, it was stated in the report, and in our letter concurring with the results of the survey, that federally protected waterbirds may occur in any of the wetlands, including the portion of Huleia Stream that crosses the proposed project area and the areas directly downstream from the highway runoff. This information was omitted on pages 9, 17, 20 and 21. As a result of this omission, no potential impacts or loss of habitat of these waterbirds were evaluated or discussed in the DEA. We recommend that the DEA evaluate the potential impacts of the proposed project on these waterbirds.

Page 7: Section 5.1.4

In our September 23 letter, we also requested that the DEA address potential indirect impacts, such as changes in hydrology or potential increases in road-related contaminants (i.e., oil, grease runoff) that may wash into Huleia Stream and tributaries that feed into Papakolea Stream, both of which are important water sources for Huleia National Wildlife Refuge. The responses given in the DEA were as follows:

Page 8: "The increase should be less 'with the project' because the project will reduce traffic congestion and travel time."

Page 20: "The project will only duplicate an existing condition"

Page 21: "Pollutants from agricultural sources will probably remain unchanged or may even decrease while those from motor vehicles are likely to increase with traffic."

The Service finds the last statement to be contradictory with the first two, above. Further information is required to determine the bases of these statements, such as any traffic study that may have been conducted. The Service has found that improvements to roadways, such as those proposed for this project, generally lead to increased traffic and related increased potential for contamination. We do not believe that the DEA has adequately addressed our concerns regarding increased road-related contaminants.

Page 21: Section 6.30

In this section, it is stated that there will be a decrease in contamination, and there will not be a significant effect on the quality of surface water. The Service would like to know what study this statement is based on and how this conclusion was made. This reference should have been included in the DEA.

Draft EA
Kaunualii Highway
Page 3 of 3

Page 21: Section 6.31

In this section, it is stated that the impacts to wetlands are discussed elsewhere in the document. The Service can not find any adequate discussion of wetlands or wetland resources in the DEA. Therefore, Service does not feel that the effects to sensitive areas such as wetlands have been adequately addressed in the DEA.

Page 24: Section 8.3

It is stated, "In those instances where the Wetland cannot be avoided, replacing the loss of Wetland with a comparable area of Wetland should be considered."

In order for the Service to concur with a Negative Declaration determination for this project, we apply the federal standards necessary for the issuance of permits under the Clean Water Act. The Service must ensure that its policy of "no net loss of wetland functions and values" has been met. To assist in protecting these important resources, the Service has published a specific policy in the Federal Register (46 FR 7656) that provides guidance on mitigation for wetland impacts. This policy outlines five sequential steps that must be followed in any project development phase that may impact wetlands. These steps are: "...a) Avoid the impact, b) Minimize the impact, c) Rectify the impact, d) Reduce or eliminate the impact over time, and e) Compensate for the impacts..." Based on the information contained in the DEA, the Service does not believe that these steps have been followed. Therefore, we request that the applicant fully address project-related mitigation requirements.

The Service requests that the applicant prepare a revised DEA for review to insure that the potential impacts to federally protected trust resources are satisfactorily addressed. The Service appreciates the opportunity to comment and provide technical assistance in the preparation of the DEA. If you have questions regarding these comments, please contact Fish and Wildlife Biologist Christine Willis at 808/541-3441.

Sincerely,



Robert P. Smith
Pacific Islands Manager

cc: USACOE, Honolulu
DLNR, Hawaii



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
Honolulu, HI 96850
December 5, 1999

DEC - 8 1999

IN REPLY REFER TO
HEC-HI

Mr. Robert P. Smith
Pacific Island Manager
U.S. Department of the Interior
Fish and Wildlife Service
Pacific Islands Ecoregion
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawaii 96850

COPY

In addition, the Service was concerned that the project has the potential to impact aquatic species downstream of the project site.

We ask that the Service review the listing of species above in order to determine whether this information is still current. If you have questions, please do not hesitate to call me at (808) 541-2700 (ext. 305).

Sincerely yours,

Pat V. Phung, P.E.
Transportation Engineer

Dear Mr. Smith:

Subject: Improvements to Kaunualii Highway, Lihue to West of Maluhia Road
Island of Kauai, Hawaii
Project Coordination Under Section 7, Endangered Species Act

Enclosures: U.S. Fish and Wildlife Service letter to Park Engineering (ParEn, Inc.), dated
September 23, 1998
U.S. Fish and Wildlife Service letter to Park Engineering (ParEn, Inc.), dated
March 11, 1999

The U.S. Fish and Wildlife Service (Service) was asked by ParEn, Inc. to review an avifaunal and feral mammal survey, a botanical resources and wetlands assessment, an aquatic species survey and a preliminary draft environmental assessment (pre-draft EA) for the subject project. In the letter dated March 11, 1999 (see enclosure), the Service stated that although the environmental studies provide adequate information to determine existing conditions, the pre-draft EA was "incomplete or misleading with regard to potential project impacts." In addition, the Service asked that pre-draft EA be revised "to ensure that the potential impacts to federally protected trust resources are satisfactorily addressed." Currently, we are in the process of revising the draft EA, and therefore, are working to be compliant with Section 7 of the Endangered Species Act.

cc: Mr. Steve Morikawa, State of Hawaii, Department of Transportation
Mr. Glenn Ikeda, ParEn, Inc.
Mr. Jason Yazawa, Parsons Brinckerhoff Quade & Douglas, Inc.

In the letter of September 23, 1998 (see enclosure), the Service identified the following species:

~~Endangered waterbirds, which may occur in any of the wetlands and stream crossings in the project area~~

Hawaiian duck (*Anas wyvilliana*)
Hawaiian stilt (*Himantopus mexicanus*)
Hawaiian coot (*Fulica alai*)
Hawaiian moorhen (*Gallinula chloropus*)

~~Migrating seabirds that may be affected by highway lighting~~

~~Endangered dark-rumped petrel (*Pterodroma phaeopygia sandwichensis*)
Threatened Newell's shearwater (*Puffinus newelli*)~~



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Ecoregion
300 Ala Moana Boulevard, Room 3-122
Box 50088
Honolulu, Hawaii 96850

RECEIVED
JAN 21 1999
HAWAII DIVISION

In Reply Refer To: LLLW
Mr. Pat V. Phung, P.E.
US Dept. of Transportation
Federal Highway Administration
Hawaii Division
300 Ala Moana Blvd., Rm 3-306
Honolulu, HI 96850

JAN 31 2000

Re: Concurrence of Species List for Improvements to Kaunualii Highway, Lihue to West of Maluhia Road, Kauai, Hawaii

Dear Mr. Phung:

This responds to your December 5, 1999, letter in which you requested that the U.S. Fish and Wildlife Service (Service) review and update a species list for the proposed project to improve Kaunualii Highway from Lihue to West of Maluhia Road, Kauai, Hawaii. The species list you provided included the threatened Newell's shearwater (*Puffinus newelli*), and the endangered Hawaiian duck (*Anas wyvilliana*), Hawaiian gallinule (*Gallinula chloropus sandwicensis*), Hawaiian stilt (*Himantopus mexicanus knudseni*), Hawaiian coot (*Fulica alai*), and Hawaiian (dark-rumped) petrel (*Pterodroma phaeopygia sandwicensis*).

The Service has reviewed the information provided by you and pertinent information in our files, including maps prepared by The Nature Conservancy's Hawaii Natural Heritage Program and information compiled by the Service's Hawaii and Pacific Plant Recovery Coordinating Committee. Based on our review, we concur with the information you provided with the addition of the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) which may also be in the area of the proposed project.

If you have any questions, please contact Fish and Wildlife Biologist Lorena Wada (phone: 808/541-3441; fax: 808/541-3470).

Sincerely,

Paul Henson
Field Supervisor
Ecological Services

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MAR 13 2000
PARTONS BRICKERHOFF
LAW OFFICES
HONOLULU, HAWAII

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
Honolulu, HI 96850
March 10, 2000



Mr. Paul Henson
Field Supervisor
U.S. Fish and Wildlife Service
300 Ala Moana Boulevard, Room 3-122
Box 50088
Honolulu, Hawaii 96850

Dear Mr. Henson:

Subject: Improvements to Kaunualii Highway, Lihue to West of Maluhia Road
Island of Kauai, Hawaii
Project Coordination Under Section 7, Endangered Species Act

In a letter dated January 31, 2000, the U.S. Fish and Wildlife Service (Service) provided a list of Federal Trust species that could potentially be affected by the subject project. In addition, the Service previously commented on the project in letters dated September 23, 1998 and March 11, 1999. The Service stated that the Hawaiian duck (*Anas wyvilliana*), Hawaiian stilt (*Himantopus mexicanus*), Hawaiian coot (*Fulica alai*), Hawaiian moorhen (*Gallinula chloropus*), Hawaiian dark-rumped petrel (*Pterodroma phaeopygia sandwicensis*), Newell's shearwater (*Puffinus newelli*) and the Hawaiian Hoary Bat (*Lasiurus cinereus semotus*) could possibly be in the project area.

The Federal Highway Administration (FHWA) believes that the species listed in the January 31, 2000 letter would not likely be adversely affected by the proposed project. The rationale for this determination is described below.

According to the Service recovery plans for the endangered Hawaiian waterbirds, primary or core wetland habitats near the project area for the Hawaiian waterbirds are in the Koloa area and the Huleia National Wildlife Refuge. These wetland areas are at least two to three miles south of and downstream from the project area. The project will not fill or affect any of these wetlands, nor will it change the drainage patterns of streams and ditches crossing Kaunualii Highway that discharge into the core wetland areas. The only wetland fill proposed by the project will be less than 0.5 acres. The affected wetland is in the west side of Puhii, directly adjacent to Kaunualii Highway. According to a wetland delineation survey conducted by the U.S. Army Corps of Engineers, this wetland does not function as waterbird habitat.

For traffic safety, the project will include highway lamps at locations such as intersections and populated areas. Some of these locations already have highway lamps. Lighting to be provided by the project would be designed to reduce glare and shield light from migrating seabirds

RECEIVED

United States Department of the Interior



FISH AND WILDLIFE SERVICE
Pacific Islands Ecoregion
300 Ala Moana Boulevard, Room 3-122
Box 50088
Honolulu, Hawaii 96850

(Hawaiian dark-rumped petrel and Newell's shearwater), based on guidance in "The Newell's Shearwater Light Attraction Problem, A Guide for Architects, Planners, and Resort Managers."

The recovery plan for the Hawaiian hoary bat stated that this bat prefers roosting locations in open areas near forests, and is rarely found in towns or open fields. The areas that will be used by the project are either open space near urban areas or open fields that were recently used for large-scale agriculture. Therefore, based on the description of preferred habitat types in the recovery plan, the terrain that would be affected by the roadway widening does not appear to be the type of habitat favored by the Hawaiian hoary bat.

Based on the information herein provided, we request that the Service provide written concurrence with the FHWA finding that the proposed project will not likely adversely affect the Federal Trust species listed in the January 31, 2000 Service letter.

If you have questions or require additional information, please do not hesitate to call me at (808) 541-2700 (ext. 305).

Sincerely yours,

Pat V. Phung

Pat V. Phung, P.E.
Transportation Engineer

cc. Mr. Steve Morikawa, HWY-K
Mr. Glenn Ikeda, ParEn, Inc.
/Mr. Jason Yazawa, Parsons Brinckerhoff Quade & Douglas, Inc.

In Reply Refer To: GCS

Pat V. Phung, P.E.
Transportation Engineer
U.S. Department of Transportation
Federal Highway Administration, Hawaii Division
300 Ala Moana Blvd., Rm. 3-306
Honolulu HI 96850

Re: Informal ESA Section 7 Consultation for the Improvements to Kaunuaui Highway Project, Island of Kauai, Hawaii.

Dear Mr. Phung:

The US Fish and Wildlife Service (Service) has received your letter dated March 10, 2000 requesting our concurrence under section 7 of the Endangered Species Act of 1973, as amended (Act), that the Federal Highway Administration's (FHWA) proposed improvements to Kaunuaui Highway are not likely to adversely affect endangered or threatened species.

The FHWA proposes to widen the roadway from Maluhia Road east to Lihue. In previous correspondence dated September 23, 1998 and March 11, 1999, the Service noted that the following threatened or endangered species are likely to occur in the project area: the Hawaiian duck (*Anas wyvilliana*), Hawaiian coot (*Fulica alai*), the Hawaiian moorhen (*Gallinula chloropus sandwicensis*), Hawaiian stilt (*Himantopus mexicanus*), Hawaiian dark-rumped petrel (*Pterodroma phaeopygia sandwichtenis*), Newell's shearwater (*Puffinus newelli*), and the Hawaiian hoary bat (*Lasiurus cinereus semionus*). The project's potential effects upon these organisms are discussed below:

Endangered Waterbirds

A variety of aquatic habitats are found within the Kaunuaui Highway corridor, including wetlands, intermittent and perennial streams, manmade ponds, reservoirs, and ditches. All of these areas are potential waterbird habitat. However, actual use of the wetlands and other aquatic

KAUNUAUI

PP

APR 11 2000

Mr. Pat Phung
Page 2

habitats by waterbirds in the project area appears limited. No observations were made of waterbirds in areas potentially affected by the project either by the ornithological consultant retained by the project sponsors (April 15 and 16, 1998) or by Service biologists who participated in the Army Corps of Engineers wetland delineation for the project (Jan 31 to Feb 4, 2000). Considerable effort has been expended to avoid direct impacts to wetlands, and actual fill of wetlands has been reduced to an area of less than 0.5 acres. We believe this proposed filling will result in only temporary displacement of waterbirds and will have no overall adverse effect.

Threatened and Endangered Seabirds

Lighting will be installed at locations along the project corridor such as intersections and populated areas. Threatened or endangered seabirds that nest in inland mountain areas can become disoriented by highway lighting and collide with man-made structures. Injured and disoriented seabirds that are forced to land are at great risk of predation by cats and dogs or of being hit by automobiles. Although there will be an increase in the amount of lighting as a result of the proposed project, the light fixtures utilized for this project will be designed and installed to reduce glare and shield light from migrating seabirds. These design features will be based on guidance in "The Newell's Shearwater Light Attraction Problem, A Guide for Architects, Planners, and Resort Managers."

Hawaiian Hoary Bat


Much of the region surrounding the Kaunualii Highway is adjacent to populated areas. Some of the highway goes through a rural landscape that historically was cleared of most forest cover for sugar cane cultivation. These agricultural areas are in transition from sugar to other types of crops, presently most of these areas lie fallow. Habitat requirements and conservation goals for the Hawaiian Hoary Bat are described in the Recovery Plan for the Hawaiian Hoary Bat. Because the Hawaiian Hoary Bat prefers roosting and foraging habitat in open areas near forests, it is unlikely that the roadway widening project will impact either roosting or foraging habitat for bats.

In consideration of the information presented to the Service with regard to the scope and potential effects of the proposed project, and our evaluation of the habitat requirements of endangered species likely to occur in the area, the Service concurs with your determination that the proposed action is not likely to adversely affect endangered or threatened species under Service jurisdiction. The requirements of section 7 of the Act have been satisfied. However, obligations under section 7 of the Act must be reconsidered if: 1) new information reveals impacts of this defined action that may affect a listed species or critical habitat in a manner that was not previously considered, 2) this action is subsequently modified in a manner not previously considered in this assessment, or 3) a new species is listed or critical habitat determined that may be affected by the identified action.

Mr. Pat Phung
Page 3

Thank you for your interest in protecting endangered species. If you have questions please contact our Program Leader for Vertebrate Listing, Consultation and Recovery, Marlet Zablan or Fish and Wildlife Biologist Gordon Smith at 808/541-3441.

Sincerely,


Paul Henson
Field Supervisor
Ecological Services

BERNARD J. CANTWELL
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

ANDREW B. WELSH, CHAIRMAN
BOARD OF LAND AND NATURAL RESOURCES

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LAND MANAGEMENT
LIFE SCIENCES
PLANNING AND DEVELOPMENT

August 24, 1998

Mr. Reginald Suzuka
Park Engineering
Kawaiahaeo Plaza, Suite 300
567 South King Street
Honolulu, Hawaii 96813-3036

LOG NO: 22119
DOC NO: 9808tm09
Architecture

Dear Mr. Suzuka:

SUBJECT: Draft Archaeological Assessment Report
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Project No. 50DE-02-95
Lihue, Kauai

Thank you for transmitting the draft archaeological assessment report of the proposed widening of Kaunualii Highway. We concur with the findings of the archaeological survey. However, we recommend including a map in the final report indicating the location of the historic sites that were found and the proposed width of the highway so that our office can better ascertain its effect.

We concur with the recommendations of the report regarding the Grove Farm office building and the Lihue Public Cemetery. Since both the Lihue Mill Bridge and the Hoomana Overpass Bridge were evaluated to be eligible for nomination to the National Register of Historic Places, we recommend that these structures be retained rather than widened with perhaps another bridge going in the opposite direction next to the existing bridge. Again, it is difficult to make recommendations without indication of land and site constraints.

Thank you for the opportunity to comment. Should you have further questions, please feel free to call Tonia Moy at 587-0005.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

TMjje

cc: Nancy McMahon

August 6, 1998

Mr. Don Hibbard
Administrator
State Historic Preservation Division
33 S. King Street, 6th Floor
Honolulu, Hawaii 96813

Dear Mr. Hibbard:

Re: Draft Archaeological Assessment Report
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

The State Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigation/studies for the design of highway improvements for Kaunualii Highway.

The proposed project is approximately 7.5 miles long, starting at the Lihue Mill and extending to a point about half a mile beyond the junction of Maluhia Road (See enclosed map entitled "Improvements to Kaunualii Highway Lihue to West of Maluhia Road"). The project will widen the existing highway from a two lane to a four lane divided highway. In general, the new highway will follow the existing highway alignment.

An archaeological survey/assessment report has been prepared for this project, a copy of which is enclosed. Your review and comments are requested, if we have inadvertently overlooked an archaeological resource or omitted information we should have included, please so inform us.

Your earliest response on this matter will be appreciated.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President

cc: DOT- Kauai, attn: Steve Monkawa

TC 26 Folder 595

Draft Archaeological Assessment Report
September 9, 1998
Page 2 of 2

September 8, 1998

Mr. Don Hibbard
Administrator
State Historic Preservation Division
33 S. King Street, 6th Floor
Honolulu, Hawaii 96813

Dear Mr. Hibbard:

Re: Draft Archaeological Assessment Report
Improvements to Kauruaia Highway
Lihue to West of Mahulia Road (Kolea)
Kauai-Environmental Studies
Project No. 50DE-02-95

Thank you for your letter of August 24, 1998 in which you commented on the subject draft report. We will be complying with the recommendations on the Grove Farm office building and the Lihue Public Cemetery. With regard to the existing Lihue Mill Bridge, we feel it is important for you to know the following about this bridge:

1. The overall width of the bridge including railings is approximately 36 feet.
2. The two traffic lanes are each 12 feet wide.
3. There is no shoulder.
4. The two sidewalks are each 4.5 feet wide (One on each side of the bridge)
5. The existing railings are deteriorated and must be replaced. The design of these railings is such that they do not meet current design standard/requirements for vehicle impact.

We are presently working with the State on the design/dimensional requirements for this bridge. ATTACHMENT "A" depicts the most recent discussions with the State on these requirements. The overall width of 55.5 feet will accommodate two traffic lanes, a shoulder/bike lane, pedestrian walkway and space for maintenance personnel. Please note that this design is still preliminary.

The main elements of the new bridge are:

- a. The Existing Bridge Structure- The existing foundation and structural support (beams, girders, etc.) will be retained. The bridge deck and railings will be replaced.
- b. Additional Bridge Foundation and Structural Support - Additional foundation and structural supports will be constructed to accommodate the wider bridge section
- c. New Bridge Deck- A new bridge deck will be designed and constructed to

meet current design standards.

d. New Bridge Railings - New bridge railings that are identical to the existing railings will be constructed. These railings will not/can not be designed to meet current impact design requirements.

e. Concrete Barrier Walls- Concrete barriers will be constructed along both sides of the bridge. These barriers will be designed to meet current design standards/requirements for vehicle impact. The barrier along the edge of the sidewalk will provide protection for pedestrians. It will also provide protection for the bridge railing. The barrier on the opposite side is will shield and protect the bridge railing from vehicular impact damages.

The existing Lihue Mill Bridge will be used by traffic headed in the east bound direction only. A similar new bridge will be constructed for west bound traffic.

As for the existing Hoomana Overpass Bridge, it can no longer be used for automobile traffic because access will be restricted by its proximity to the proposed highway improvements. However, it is possible that this bridge can be used by pedestrians and bicyclists.

Please review and provide us with any comments you may have on the proposed improvements to the Lihue Mill Bridges. Should you have questions concerning the above, please feel free to call us. Your earliest response to this request will be appreciated.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President



cc: DOT- Kauai, attn: Steve Morikawa
TC 26 Folder 595



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

NICHOLE B. WILSON, CHIEF DIVISION
BOARD OF LAND AND NATURAL RESOURCES

GOVT/2
SILENT COMMUNICATION
AGRICULTURE DEVELOPMENT PROGRAM
AQUATIC RESOURCES CONSERVATION AND ADVANCED RESEARCH
CONVICTIONS
HISTORIC PRESERVATION DIVISION
LAND PLANNING
STATE AND LAND DEVELOPMENT

LOG NO: 22333
DOC NO: 9810mm03
Architecture

October 9, 1998

Mr. Reginald Suzuka
Park Engineering
Kawaiabao Plaza
567 South King Street, Suite 300
Honolulu, Hawaii 96813-1676

Dear Mr. Suzuka:

SUBJECT: Draft Archaeological Assessment Report
Improvements to Kaunualii Highway
Project 50DE-02-95
Lihue Mill Bridge and Hoomana Overpass Bridge

Thank you for submitting the above project and sending the site plans and sections of the proposed widening of Lihue Mill Bridge. We concur with the concept of utilizing Hoomana Overpass Bridge as pedestrian and bicycle access and thus maintaining the historic bridge. Will the second bridge along the new Kuhio Highway impact Hoomana Overpass Bridge? Plans indicate that the widening will be very close to or may be on top of the bridge.

Regarding Lihue Mill Bridge, we are glad to see current plans call for its retention, however, we do not concur with the replacement of the unique steel railings which is a good part of what makes the bridge significant. We recommend not widening the Mill Bridge and placing bicycle and perhaps pedestrian access on the new bridge.

Thank you for consulting with us while plans are still preliminary. Please call Tonia Moy at 587-0005 with any questions and to set up an appointment to discuss alternatives.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

TM:jk

c Barnes Riznik

September 24, 1998

Mr. Don Hibbard
Administrator
State Historic Preservation Division
33 S. King Street, 6th Floor
Honolulu, Hawaii 96813

Dear Mr. Hibbard:

Attention: Tonia

Re: Lihue Mill Bridge
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kausi-Environmental Studies
Project No. 50DE-02-95

Per your telephone request this morning, I am transmitting the following:

1. Prints of the preliminary plans (dated August 1998) with information on the existing and new Lihue Mill Bridges. The set (of plans) includes sheets 1, 22, 23 and 29.
2. Two color photos of the existing Mill Bridge
3. Six black and white photos (Nos. 97 thru 102) of the existing Mill Bridge

If I can be of further assistance, please let me know.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President

TC 26 Folder 595

ROYALTY L. CANTLAND
GOVERNOR OF HAWAII



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
KALANIANA'OLELE PARKWAY, ROOM 618
HONOLULU, HAWAII 96813

THOMAS E. JENSEL, CHAIRMAN
BOARD OF LAND AND NATURAL RESOURCES

SECRETARY
JANET E. LUNDGREN

AQUATIC RESOURCES
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CONSERVATION AND ACQUISITION
SPERM WHALE
CONSERVATION
HAWAIIAN MONUMENTS
HISTORIC PRESERVATION
LAND
STATE PARKS
WATER RESOURCES MANAGEMENT

December 28, 1999

Mr. Jason Yazawa
Parsons Brinckerhoff
Fax: (808) 528-2368

Dear Mr. Yazawa:

**SUBJECT: Improvements to Kaunualii Highway
Section 106 Consultation List**

Thank you for transmitting a proposed list for consultation. The list of organizations and agencies that you have compiled seems adequate for consultation. We are pleased to see that you are making this good faith effort to consult the public with this project. If another interested party does arise, we will let you know. Please inform us of any information or comments these organizations have regarding affects to historic properties on the project to widen Kaunualii Highway.

Thank you for your diligence on this project. Please call Tomia Moy at 692-8030 should you have further questions.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

TML:im

LOG NO: 24648
DOC NO: 9912tml17
Architecture

PHONE (808) 584-1888



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPULANI BOULEVARD, SUITE 630
HONOLULU, HAWAII 96813

FAX (808) 584-1885

RECEIVED
STATE OF HAWAII
2000 JAN 19 A 10:30

January 14, 2000

Ms. Steven M. Kyono, P.E.
District Engineer
Hawaii Department of Transportation
Highways Division, Kauai District
3060 Eiwa Street, Room 205
Lihue, Hawaii 96766

EIS 356

Re: Kaunualii Highway Improvements, Lihue to West of Maluhia Road, Project No. 50DE-02-95, Island of Kauai.

Dear Mr. Kyono:

Thank you for the opportunity to review the archaeological and historical assessment drafted by Cultural Surveys Hawaii for the Kaunualii Highway improvement project. We found the historical information on the establishment of the missionary colony at Koloa and the development of the highway between Koloa and Lihue interesting.

However, the report contains very little information concerning Hawaiian occupation and use of the lands at or between Koloa and Lihue. That seems a critical omission. Hawaiians had a highly structured and thriving culture on the island of Kauai long before the trade/missionary population arrived there. The highway that was finally established in this region, quite likely had its origins in the trail system used by the Hawaiian community. Certainly, there is more information on the nature and use of this trail system than is currently included in the draft report. We suggest that the report should be revised to include this information.

Your letter also indicated that you will be preparing and Environmental (EA) for this project. We would appreciate the opportunity to review both the EA and the final archaeological report before the project is permitted. In addition, if federal money use and historic resources will be

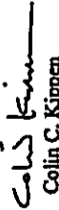
U.S. GOVERNMENT PRINTING OFFICE: 2000

Mr. Steven M. Kyono, P.E.
January 14, 2000
Page two

affected, you will need to consult with the Office of Hawaiian Affairs as required by the Section 106 provisions of the National Historic Preservation Act. Consultation must be initiated by contacting our Honolulu Office.

If you have any questions concerning our comments, please contact Lynn Lee, Policy Analyst/Environmental Planner at 594-1936.

Sincerely,


Colin C. Kippen
Deputy Administrator

cc: OHA Kauai Community Affairs Office.

SEDUWAMEA I. CAHILLIANG
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAAUI DISTRICT
3080 EWA STREET, ROOM 205
LIHUE, HAWAII 96766

February 1, 2000

Mr. Colin C. Kippen
Deputy Administrator
Office of Hawaiian Affairs
State of Hawaii
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

Dear Mr. Kippen:

SUBJECT: KAUNUALII HIGHWAY IMPROVEMENTS
LIHUE TO WEST OF MALUHIA ROAD
PROJECT NO. 50DE-02-95

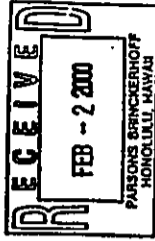
Thank you for your review and comments on the draft archaeological and historical assessment report prepared by Cultural Surveys Hawaii for the subject project. We have carefully considered your suggestion that the report be revised to include research on the Hawaiian occupation and use of lands from Koloa to Lihue beyond what is presented in the report. Although such information, if obtainable, would be interesting, we feel that such research would be beyond the scope of this exercise, which is to make a good faith effort to identify and assess the impact on historic properties in the project's area of potential effect. Unless specific evidence is provided to us that would indicate that research conducted to date has missed a potential historic property, we plan to rely on the results of the report as well as public and agency consultation to identify historic properties.

We will send a copy of the project's Draft environmental assessment to the Office of Hawaiian Affairs (OHA) just prior to the public review period. In addition, the OHA will be consulted further on the "effect" determinations of the identified historic properties in accordance with Section 106 of the National Historic Preservation Act. The effect determinations will be made by the Federal Highway Administration.

KAZUO MATSUDA
DIRECTOR
DEPUTY DIRECTOR
SHUJI K. MINAKI
GLENN M. OKUMOTO

IN REPLY REFER TO:

HWY-KE 4.000088



Mr. Colin C. Kippen
Page 2
February 1, 2000

HWY-KE 4.000088

Again, we thank you for the time and effort expended in helping us plan this project, and we look forward to continuing to work with the OHA to minimize project impacts on historic properties and other important resources. If you have any questions, please call Steve Morikawa at (808)274-3111.

Very truly yours,

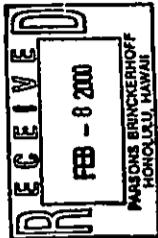


STEVEN M. KYONO, P.E.
District Engineer

SM:es

cc: Tonia Moy, State Historic Preservation Division
Pat Phung, Federal Highway Administration
Glenn Ikeda, ParEn, Inc.

✓ David Atkin, Parsons Brinckerhoff Quade & Douglas, Inc.



COUNTY OF KAUAI
PLANNING DEPARTMENT
4444 RICE STREET, SUITE 473
LIHUE, HAWAII 96766

MEMORANDUM

COPY

Date: February 4, 2000
To: Steve Kiyono, State Highways, District Engineer
From: Kauai Historic Preservation Review Commission
Subject: Project No. 50DE-02-95, Kaunualii Highway Improvements (Lihue to Maluhia)

Thank you for attending the Kauai Historic Preservation Review Commission (KHPRC) meeting on February 2, 2000 and for the informative presentation by your consultants. Based on the KHPRC's understanding of the project, the following comments are offered at this time:

1. With respect to the identification of historic resources which may be impacted by the project, the Lihue Mill and accessory structures, old railroad crossings along the route, the Kiohaha Complex and the adjoining residence (Rapozo house) are historic and perhaps should be recognized in the report (see attached profiles).
2. Attached is a copy of the KHPRC's recommendations to the Lawai Bridge Project. These recommendations should also apply to this project as well as other bridge improvement projects.
3. Excerpts from the Kauai Historic Bridge Inventory pertaining to the Lihue Mill Bridge and the Hoomana Overpass are attached for your information.

Finally, the KHPRC requests to be periodically updated as this project progresses and as more detailed information regarding mitigating actions (set backs from historic resources, preliminary construction designs, etc.) become available.

Please call Rick at the Planning Department should you have any questions regarding this matter.

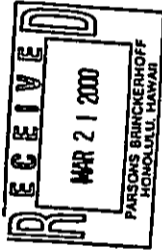
Mahalo.

cc: SHPD
Jason Yazawa
Attachments

1



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3202
Honolulu, HI 96850
March 20, 2000



IN REPLY REFER TO
HEC-HI

Office of Hawaiian Affairs;
State of Hawaii Department of Hawaiian Home Lands;
Historic Hawaii Foundation;
Kauai Historic Preservation Review Commission (KHPRC); and
Kauai Historical Society.

Mr. Timothy E. Johns
Chairperson and State Historic Preservation Officer
State of Hawaii, Department of Land and Natural Resources
601 Kamokila Boulevard, Rm. 555
Kapolei, Hawaii 96707

Attention: Ms. Tonia Moy

Dear Mr. Johns:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
Section 106 of the National Historic Preservation Act
Request for Concurrence on Effect Determinations

In accordance with Section 106 of the National Historic Preservation Act, this letter requests that the State Historic Preservation Officer (SHPO) concur on effect determinations regarding historic properties in the subject project's Area of Potential Effect (APE).

The following historic properties were identified in the APE:

1. Lihue Mill Bridge
2. Hoomana Overpass Bridge
3. Lihue Public Cemetery
4. Grove Farm administrative office building
5. German Hill historic district
6. Lihue Mill
7. Kiloana
8. residence on the Kiloana property

The first four properties were identified in an archaeological and historic assessment report prepared for this project by Cultural Surveys Hawaii. The German Hill historic district was identified by your staff. Subsequent to a consultation meeting held with your staff on November 16, 1999, we submitted the assessment report to the following agencies and organizations who were asked to help identify other potential historic properties in the APE:

In addition, a public meeting was held at Wilcox Elementary School in Lihue in the evening of January 13, 2000, to discuss the project's impacts on historic properties, and a presentation was made at a regular meeting of the KHPRC on February 2, 2000. Historic properties 6 to 8 above were identified by the KHPRC in a letter dated February 4, 2000, to the State of Hawaii Department of Transportation. KHPRC also mentioned the possibility of old railroad crossings along the highway potentially being historic resources. Although the project was able to obtain information on the locations of these crossings, all of the tracks have either been removed or covered so there is no visible evidence that any track is still in existence.

The Federal Highway Administration (FHWA) is rendering "no adverse effect" determinations on Lihue Mill, Lihue Public Cemetery, Kiloana, the residence on the Kiloana property, the Grove Farm administrative office building, Hoomana Overpass Bridge, and the German Hill historic district. The "no adverse effect" determinations for the first five properties are being rendered because the project would widen Kaunualii Highway away from these sites.

Although the project would widen the highway on the side of Hoomana Overpass Bridge, the bridge would not be displaced or altered. It would, however, be closed to vehicular traffic because Hoomana Road would be realigned to maintain access to German Hill. The bridge would remain open for pedestrians and cyclists traveling between German Hill and Kaunualii Highway.

The proposed realignment of Hoomana Road would require the relocation of one residence within the German Hill historic district. Nonetheless, the FHWA determines that the realignment would not affect the historic integrity of the district because the residence is located at the extreme southern edge of the district, and the remaining houses and church would remain a cohesive unit. Based on information obtained from your staff, the residence is not individually historic. In accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act, the owner of the residence would be provided with relocation assistance. However, provided that the house is moveable, the project could relocate the house in the district if suitable property can be found and the owner is agreeable. If the house is razed, the project would provide photo documentation of the house in addition to what currently is in your files.

The FHWA renders an "adverse effect" determination on Lihue Mill Bridge because the project would require the widening of its deck and the removal of its steel railings. The FHWA acknowledges that these railings are part of what makes Lihue Mill Bridge historic. Unfortunately, the removing of the rails is unavoidable, regardless of whether the project proceeds, because they are rusted and decrepit. Replacing the railings with the same or similar type of railings would not meet our highway safety standards.

ENJAMBE L. CAVETANO
GOVERNOR OF HAWAII



TIMOTHY E. JOHNS, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
DEPUTY
JANET L. CARWELL

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION
Kalahele Building, Room 515
615 Punchbowl Street
Honolulu, Hawaii 96813

If you have questions or require additional information, please do not hesitate to call me at
(808) 541-2700 (ext. 305).

Sincerely yours,

Pat V. Phung, P.E.
Transportation Engineer

cc. State of Hawaii Office of Hawaiian Affairs
Historic Hawaii Foundation
Mr. Steve Morikawa, State of Hawaii, Department of Transportation (w/o enclosures)
Mr. Glenn Ikeda, ParEn, Inc. (w/o enclosures)
✓Mr. Jason Yazawa, Parsons Brinckerhoff Quade & Douglas, Inc. (w/o enclosures)

Enclosures: Letter from ParEn, Inc., to State Historic Preservation Division (SHPD) dated August 6, 1998
Letter from SHPD to ParEn, Inc., dated August 24, 1998
Letter from ParEn, Inc., to SHPD dated September 9, 1998
Letter from ParEn, Inc., to SHPD dated September 24, 1998
Letter from SHPD to ParEn, Inc., dated October 9, 1998
Draft minutes of November 16, 1999, meeting involving SHPD, FHWA, ParEn, Inc., and Parsons Brinckerhoff (PB)
Fax letter from SHPD to PB dated December 28, 1999
Letter from the State of Hawaii Office of Hawaiian Affairs (OHA) to the State of Hawaii Department of Transportation (SDOT) dated January 14, 2000
Letter from SDOT to OHA dated February 1, 2000
Draft summary of a public meeting held on January 13, 2000
Memorandum from the Kaula Historic Preservation Review Commission to SDOT dated February 4, 2000
Draft minutes of a March 9, 2000 meeting involving SHPD, FHWA and PB

March 28, 2000

Mr. Pat V. Phung
U.S. Department of Transportation
Federal Highway Administration
Hawaii Division
300 Ala Moana Blvd., Room 3202
Honolulu, Hawaii 96830

Dear Mr. Phung:

SUBJECT: Section 106 Compliance Improvements to
Kaunualii Highway Lihue to West of Maluhia Road
County of Kauai, Hawaii

Thank you for your transmittal on the proposal to widen Kaunualii Highway and for working with our office throughout the project as well as providing public input documentation. We concur with the determination of "no historic properties adversely affected" regarding Lihue Mill, Lihue Public Cemetery, Kiloahana, the residence on Kiloahana and the Grove Farm Administrative Building, since road widening will occur to the opposite sides of these properties.

Since Hoonana Overpass Bridge will be retained as a pedestrian bridge, we concur that the road widening will have no adverse effect as long as the bridge is maintained. Regarding the house in German Hill, we concur that the house would not be considered individually eligible since photographs indicate that this simple house has been altered a few times. Also, since the house is at the very edge of the district and the community supports the alternative which requires the removal of the house, we will concur with a "no historic properties adversely affected" with the stipulation that photo-documentation utilizing HABES standards be done if the house is demolished and hope that a relocation plan within the district will be successful. Please provide documentation of the attempts to relocate the house.

We further concur with the "adverse effect" determination for the Lihue Mill Bridge widening and the removal of its steel railings. As you are aware, the Advisory Council needs to be notified of the adverse effect determination and invited to participate in the consultation. If you need an example of a notification letter or if you have further questions, please call Tania Moy at 692-8730. We look forward to working with you on the memorandum of agreement and its stipulations.

Aloha,

TIMOTHY E. JOHNS
State Historic Preservation Officer

TM:gb

RECEIVED

HAWAII DIVISION

LOG NO: 25141
DOC NO: 0003TM27
Architecture

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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
BOX 50206
Honolulu, HI 96850
June 14, 2000

REPLY REFER TO
HEC-HI

2

- Office of Hawaiian Affairs
- State of Hawaii Department of Hawaiian Home Lands
- Historic Hawaii Foundation
- Kauai Historic Preservation Review Commission (KHPRC)
- Kauai Historical Society

A public meeting was also held on January 13, 2000, to discuss the project's impacts to historic properties and a presentation was made at a regular meeting of the KHPRC on February 2, 2000. An official public hearing for the subject project was held on May 25, 2000.

The draft Memorandum of Agreement (MOA) and the draft environmental assessment are enclosed for the Council's review and comment. The draft MOA outlines the steps to be taken to mitigate the adverse effect. We welcome any comments that the Council may have on the format or the content of the MOA.

Please contact me at (808) 541-2700, extension 305, if there are any questions. Thank you for your assistance and cooperation.

Sincerely yours,

Pat V. Phung
Pat V. Phung, P.E.
Transportation Engineer

Enclosures: Draft environmental assessment
Draft MOA

cc: Mr. Steve Morikawa, HDOT, HWY-K (w/o enclosures)
Mr. Glenn Ikeda, ParEn, Inc. (w/o enclosures)
Mr. Jason Yazawa, PBQD (w/o enclosures)
Ms. Tonia Moy, SHPO (w/o enclosures)

Ms. Mary Ann Naber
Advisory Council on Historic Preservation
The Old Post Office Building
1100 Pennsylvania Avenue, N.W., #809
Washington, D.C. 20004

Dear Ms. Naber:

Subject: Notification of Adverse Effect
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii

In accordance with Section 106 of the National Historic Preservation Act, we are notifying the Council that the Federal Highway Administration (FHWA), in cooperation with the Hawaii Department of Transportation (HDOT), will have an adverse effect on the Lihue Mill Bridge during the construction of the subject project.

The undertaking is a project to widen Kaunualii Highway from Lihue to west of Maluhia Road, a distance of approximately 12 kilometers (7.5 miles). Within these limits, Kaunualii Highway would be converted from a two-lane undivided roadway to a four-lane divided roadway. To avoid and minimize certain resources, the widening would occur alternately on the north or south sides of the existing road.

The FHWA and the HDOT have been coordinating with the State Historic Preservation Officer (SHPO) since late summer 1998. On March 28, 2000, the SHPO concurred with the FHWA that the subject project will have an adverse effect determination on the Lihue Mill Bridge because the build alternative would widen the bridge deck and replace its steel railings with new railings. For additional background, coordination letters with SHPO are located in Appendix B of the enclosed draft environmental assessment.

Additionally, we consulted with the following agencies to assist the FHWA and the HDOT in identifying other potential historic properties in the Area of Potential Effect (APE):

**Advisory
Council On
Historic
Preservation**

RECEIVED
JUN 27 2000
HAWAII DIVISION

The Old Post Office Building
1100 Pennsylvania Avenue, NW, #809
Washington, DC 20004

Pat V. Phung, P.E.
Federal Highway Administration, Hawaii Division
300 Ala Moana Blvd., Room 3-306
Box 50206
Honolulu, HI 96850

JUN 22 2000

RE: Improvements to Kaunualii Highway
Kauai County, Hawaii

Dear Mr. Phung:

On June 16, 2000, we received your notification and supporting documentation regarding the adverse effects of the proposed construction on Lihue Mill Bridge, a property eligible for inclusion in the National Register of Historic Places. Based upon the information you provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, of our regulations, "Protection of Historic Properties" (36 CFR Part 800) does not apply to this undertaking. Accordingly, we do not believe that our participation in the consultation to resolve adverse effects is needed. However, should circumstances change and you determine that our participation is required, please notify us.

Pursuant to 36 CFR 800.6(b)(iv), you will need to file the final Memorandum of Agreement (MOA), developed in consultation with the Hawaii State Historic Preservation Officer (SHPO), and related documentation at the conclusion of the consultation process. The filing of this MOA with the Council is required in order for FHWA to complete its compliance responsibilities under Section 106 of the National Historic Preservation Act.

Thank you for providing us with your notification of adverse effect. If you have any questions or require the further assistance of the Council, please contact MaryAnn Naber at 202/606-8505 or via eMail at manber@achp.gov.

Sincerely,

Charlene Dawn Vanden
for
Don L. Klima
Director

Office of Planning and Review

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02 22 JUN 2000 10 11 AM '00

MEMORANDUM OF AGREEMENT

Among the

**FEDERAL HIGHWAY ADMINISTRATION and the
HAWAII STATE HISTORIC PRESERVATION OFFICER**

Regarding the Replacement of the Steel Railings on Lihue Mill Bridge
for the Improvements to Kaunuaia Highway, Lihue to West of Maluhia Road
Project No. 50DE-02-95

WHEREAS, the Federal Highway Administration (FHWA) has determined that Lihue Mill Bridge located on Kaunuaia Highway over Nawiliwili Stream in the Lihue District on the island of Kauai is eligible for inclusion in the National Register of Historic Places (NRHP), and that the replacement of its substandard steel railings with railings that meet current safety standards and the widening of its bridge deck will have an adverse effect and FHWA has consulted with the Hawaii State Historic Preservation Officer (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) participated in the consultation and has been invited to concur in this Memorandum of Agreement (MOA); and

WHEREAS, the FHWA, the Hawaii SHPO, and the HDOT have agreed that alternatives to the replacement of the railings have been considered and found neither feasible nor prudent.

NOW, THEREFORE, the FHWA and the Hawaii SHPO agree that the replacement of the railings and the widening of the bridge deck shall be implemented in accordance with the following stipulations in order to take into account such action's effect on historic properties.

STIPULATIONS

FHWA will ensure that the following measures are implemented.

1. Prior to the replacement of the steel railings and the widening of the bridge deck of Lihue Mill Bridge (the undertaking), the HDOT shall submit photo-documentation and written documentation of the bridge using Historic American Building Survey (HABS) standards, Documentation Level III to the following agencies: (1) Hawaii SHPO; and (2) FHWA Hawaii Division.
2. The stipulated photographic documentation shall consist of photographs produced on 8" x 10" fiber-based paper prints from 4" x 5" Tri-X negatives. Both negatives and prints shall be processed with archival quality control methods. The photographic documentation shall be coordinated with SHPO.
3. The FHWA shall submit a copy of the executed MOA to the Council with the appropriate documentation pursuant to 36 CFR Section 800.11 prior to the undertaking.
4. The Kauai Historic Preservation Review Commission shall be given the opportunity to provide comments on the design of the undertaking at the preliminary and pre-final stages, and shall be asked to concur on the design during these stages.

5. Should a party to this agreement object within 30 days to any items submitted 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 request comments of the Council pursuant to 36 CFR Section 800.9. Any Council comment provided in response to such a request will be taken into account by the FHWA with reference only to the subject of the dispute; the FHWA's responsibility to carry out all actions under this agreement that are not the subjects of the dispute will remain unchanged.

6. Any party to this MOA may request that it be amended, whereupon the parties shall consult in accordance with 36 CFR Section 800 to consider such amendment.

7. Should the undertaking not take place within five (5) years of the executed MOA, the parties shall consult in accordance with 36 CFR Section 800 to determine whether amendments should be considered.

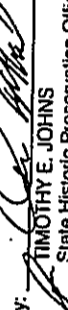
Execution of this MOA by the FHWA and the Hawaii SHPO, and implementation of its terms shall be evidence that FHWA has afforded the Council the opportunity to comment on the project entitled, "Improvements to Kaunuaia Highway, Lihue to West of Maluhia Road, Project No. 50DE-02-95" and its effects on historic properties, and that FHWA has taken into account the effects of the undertaking on Lihue Mill Bridge.

FEDERAL HIGHWAY ADMINISTRATION

By: 
ABRAHAM WONG
Division Administrator

Date: 7/10/00

HAWAII STATE HISTORIC PRESERVATION OFFICER

By: 
TIMOTHY E. JOHNS
State Historic Preservation Officer

Date: 7/10/00

CONCURRED BY:

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION

By: 
KAZU HAYASHIDA
Director of Transportation

Date: 7/10/00



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96839-5400

REPLY TO
ATTENTION OF

February 23, 1999

Operations Branch

February 10, 1999

Mr. George P. Young, Chief
Operations Branch, Building 230
U.S. Army Engineer District, Honolulu
Department of the Army
Fort Shafter, Hawaii 96858-5400

Dear Mr. Young:

Re: Draft Environmental Assessment
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

The State Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigation/studies for the design of highway improvements for Kaunualii Highway. This work also includes the preparation of an environmental assessment. An advance copy of this assessment is transmitted herewith.

Your review and comments are requested. Your earliest attention and response will be appreciated.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President

cc: DOT- Kauai, attn: Steve Morikawa

TC 26 Folder 595

Mr. Reginald Suzuka
Park Engineering
Kawaihāo Plaza
567 South King Street, Suite 300
Honolulu, Hawaii 96813-3036

Dear Mr. Suzuka:

This is in response to your letter dated February 10, 1999, requesting comments on the draft environmental assessment (EA) for Improvements to Kaunualii Highway. Based on the information contained in the EA, I have determined that a Department of the Army permit will be required for the project.

If you have any questions concerning this determination, please contact Mr. William Lennan of my staff at 438-9258 extension 13, and reference File No. 990000177.

Sincerely,


George P. Young, P.E.
Chief, Operations Branch



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3306
Honolulu, HI 96850
December 16, 1999

DEC 24 1999
MAIL ROOM TO
HEC-HI

Mr. George Young
U.S. Army Corps of Engineers
Honolulu Engineer District
Building 230
Fort Shafter, HI 96858

Attn: Mr. Farley Watanabe

Dear Mr. Young,

Subject: Kaunualii Highway, Lihue to West of Maluhia Road
Request to be a Cooperating Agency

The Federal Highway Administration (FHWA) in cooperation with the Hawaii Department of Transportation (HDOT) is initiating an environmental assessment (EA) for the proposed widening of Kaunualii Highway located on the island of Kauai. Since the project will require a Section 404 permit and because of the Corps's legal jurisdiction over such permits, we are requesting the Corps to be a cooperating agency.

The proposed improvements will include the widening of Kaunualii Highway from the existing two (2) lane undivided highway to a four (4) lane divided highway. The project limits extend from the intersection of Kubio Highway and Rice Street (Lihue) to west of Maluhia Road (Koloa). The project length is about 7.5 miles. The proposed alignment will generally follow the existing alignment and the widening will be only be limited to one side of the existing highway.

The Corps's involvement should only entail those areas under its jurisdiction. The following activities may occur to maximize interagency cooperation:

- The Corps will be invited to coordination meetings and field reviews.
- The Corps will be invited to assist the FHWA and the HDOT during the development of the project purpose and need.
- The Corps will be invited to assist in determining appropriate and practicable mitigation, including "all practicable measures to minimize harm."
- The FHWA and the HDOT will consult with the Corps on any relevant technical studies that will be required for the project.
- The Corps may be asked to assist the FHWA and the HDOT in identifying interest groups.
- The FHWA and the HDOT will provide the Corps with project information.
- The Corps may be asked to review the pre-draft and pre-final environmental assessment and

ensuring that the FHWA and the HDOT are informed of any changes needed to reflect the views and concerns of the cooperating agency.

- The Corps will be asked to adopt the final environmental assessment if, after an independent review, the Corps concludes that the environmental assessment satisfies NEPA and other relevant requirements.

We look forward to the Corps's response to this request and the Corps's role as a cooperating agency on this project. Please contact me at (808) 541-2700 ext. 305 if there are any questions.

Sincerely yours,

Pat V. Phung, P.E.
Transportation Engineer

cc: Mr. Steve Morikawa, HWY-K
Mr. Glenn Ikeda, ParEn, Inc.
Mr. Jason Yazawa, Parsons Brinckerhoff Quade & Douglas, Inc.

COPY



Parsons
Brinckerhoff

Pacific Tower, Suite 3000
1007 Bishop Street
Honolulu, HI 96813
808-531-7054
FAC: 808-531-2369



Mr. Saku Nakamura
Natural Resources Conservation Service
Page 2

January 31, 2000

Mr. Saku Nakamura
Soil Scientist
Natural Resources Conservation Services
U.S. Department of Agriculture
P.O. Box 50004
Honolulu, Hawaii 96850

Subject: Improvements to Kaunualii Highway
Lihue to West of Mauihala Road
Farmland Protection Policy Act, Form AD-1006

Dear Mr. Nakamura:

The State of Hawaii Department of Transportation, Highways Division, in cooperation with the Federal Highway Administration, is proposing to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway from its intersection with Kuhio Highway in Lihue to approximately 4400 feet west of Mauihala Road. The total length of the project is approximately 7.5 miles. To be in compliance with the Farmland Protection Policy Act, we need Farmland Conversion Impact Ratings for our two current alternatives.

The first alternative would widen the highway along the entire project limits. The side of the widening would vary north or south as indicated below (see enclosed project location map):

Segment	Proposed
Lihue to Nawiliwili Road	North
Nawiliwili Road to Nani Street	South
Nani Street to Kipu Road	North
Kipu Road to vicinity of Knudsen Gap	South
Knudsen Gap to west end of project	Undetermined

The second alternative is the same as the first from Lihue to Knudsen Gap. Instead of widening on the north or south side of the highway from Knudsen Gap to the west end, the second alternative would abandon the existing Kaunualii Highway route for new alignment to the north (see enclosed project location map). The reason the proposed widening in this section is undetermined under the first alternative is because a north side widening would fill wetlands, and a south side widening would displace trees that are part of the Mauihala Road tree tunnel, which is designated as "exceptional" by the County. The second alternative would avoid both resources. I am also enclosing soils maps with these alternatives.

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The first alternative is estimated to require 86 acres of additional right-of-way. The second alternative is estimated to require 116 acres of additional right-of-way, which includes the additional right-of-way needed from Lihue to Knudsen Gap.

We would appreciate if you can provide completed Parts II through V of Form AD-1006 as soon as possible. If you have any questions, please feel free to call me at 556-2235 or e-mail at yazawa@pbworld.com.

Sincerely yours,

JASON YAZAWA
Parsons Brinckerhoff Quade & Douglas, Inc.

Enclosures: 1. Project location map with alternatives
2. Soils map with alternatives

cc. Mr. Steve Morikawa, State Department of Transportation, Highways Division (w/o attachments)
Mr. Pat Phung, Federal Highway Administration (w/o attachments)
Mr. Glenn Ikeda, ParEn, Inc. (w/o attachments)





United States
Department of
Agriculture
Natural
Resources
Conservation
Service
P.O. Box 50004
Honolulu, HI
96830

Our People... Our Islands... In Harmony

February 17, 2000

Mr. Jason Yazawa
Parsons Brinckerhoff Quade
& Douglas, Inc.
Pacific Tower, Suite 3000
1001 Bishop Street
Honolulu, HI 96813

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Farmland Protection Policy Act, Form AD-1006

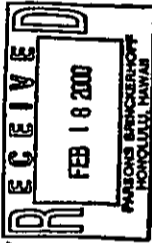
Dear Mr. Yazawa:

Enclosed is the Farmland Conversion Impact Rating (Form AD-1006) for the Kaunualii Highway improvement. We completed Parts II, IV and V.

Please call me at 541-2600 ext 133 if you have questions.

Sincerely,

Saku Nakamura
Saku Nakamura
SOIL SCIENTIST



AN EQUAL OPPORTUNITY EMPLOYER

The Natural Resources Conservation Service works hand-in-hand with the American people to conserve natural resources on private lands.

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request: Feb 2, 2000	
Name Of Project: Improvements to Kaunualii Highway	Federal Agency Involved: Federal Highway Administration		
Proposed Land Use: Highway	County And State: Kauai, Hawaii		
PART II (To be completed by SCS)		Date Request Received By SCS: 2/1/00	Average Farm Size: 2.6
Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply - do not complete additional parts of this form.)		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Acres Involved: 48,217
Name Of Applicant: Sugarcane Coffee Company		Farmers Land In Govt. Jurisdiction: 2.6	Acres Of Farmland As Defined In FPPA: 42,100
Name Of Land: State of Hawaii, LESA		Date Land Evaluation Received By SCS: 2/1/00	Alternative Site Rating: 2/1/00
PART III (To be completed by Federal Agency)		Site A	Site B
A. Total Acres To Be Converted Directly		86	116
B. Total Acres To Be Converted Indirectly		86	116
C. Total Acres In Site		86	116
PART IV (To be completed by SCS) Land Evaluation Information			
A. Total Acres Prime And Unique Farmland		39.4	57.7
B. Total Acres Statewide And Local Important Farmland		4.6	11.6
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted		90.47	20.75
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value		9.4	2.2
PART V (To be completed by SCS) Land Evaluation Criticism			
Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)			
PART VI (To be completed by Federal Agency)		Maximum Points	
Site Assessment Criteria (These criteria are established in 7 CFR 658.51b)			
1. Area In Nonurban Use		15	15
2. Perimeter In Nonurban Use		8	8
3. Percent Of Site Being Farmed		0	0
4. Protection Provided By State And Local Government		20	20
5. Distance From Urban Builtup Area		NA	NA
6. Distance To Urban Support Services		NA	NA
7. Site Of Present Farm Unit Compared To Average		10	10
8. Creation Of Nonfarmable Farmland		25	0
9. Availability Of Farm Support Services		5	5
10. On-Farm Investments		20	10
11. Effect Of Conversion On Farm Support Services		25	0
12. Compatibility With Existing Agricultural Use		10	0
TOTAL SITE ASSESSMENT POINTS		160	68
PART VII (To be completed by Federal Agency)			
Relative Value Of Farmland (From Part V)		66	71
Total Site Assessment (From Part VI above or a local site assessment)		160	68
TOTAL POINTS (Total of above 2 lines)		260	139
Site Selected:		Date Of Selection	
Reason For Selection:		Was A Local Site Assessment Used? Yes <input type="checkbox"/> No <input type="checkbox"/>	

HAWAII DIVISION
FEDERAL HIGHWAY ADMINISTRATION
PROGRAMMATIC SECTION 4(f) DETERMINATION AND APPROVAL

UNDER THE
NATIONWIDE PROGRAMMATIC SECTION 4(f) EVALUATION
AND APPROVAL FOR FHWA PROJECTS THAT NECESSITATE
THE USE OF HISTORIC BRIDGES
(JULY 5, 1983)

PROJECT NUMBER: 50DE-02-95
BRIDGE NAME: Lihue Hill Bridge BRIDGE ID: 007000500403271
ROUTE: 50 MILEPOST: 0.19 to 0.25 COUNTY: Kauai

Instructions: Consult the Nationwide Section 4(f) Evaluation as it relates to the following items. Complete all items. Any response in a shaded box requires additional information prior to approval. This Section 4(f) determination will be attached to the applicable EA, FONSI, or Categorical Exclusion.

Eligibility Criteria	Yes	No
1. Will the bridge be replaced or rehabilitated with Federal Funds?	X	
2. Will the project require the "use" of a historic structure which is on, or eligible for listing on, the National Register of Historic Places?	X	
3. Has the bridge been determined to be a National Historic Landmark?		X
4. Is the environmental documentation an Environmental Impact Statement?		X

Alternatives Considered	Yes	No
5. Have all of the following alternatives, to avoid any use of the historic bridge been evaluated?		
A. Has the "Do Nothing" alternative been studied and been determined, for reasons of maintenance and safety, not to be feasible and prudent?	X	
B. Has the "Build on New Location Without Using the Old Bridge Alternate" been studied and been determined, for reasons of terrain, and/or adverse social, economic or environmental effects, and/or engineering and economy, and/or preservation of the old bridge, not to be feasible and prudent?	X	
C. Has rehabilitation of the existing bridge without affecting the historic integrity of the bridge been studied and has it been determined, for reasons of structural deficiency and/or geometrics, that rehabilitation is not feasible and prudent?	X	

Measures to Minimize Harm <small>When an item does not apply indicate with N/A</small>	Yes	No
6. Has the project included all possible planning to minimize harm, including the following:		
A. For bridges that are adversely affected; have the FHWA, SHPO, and ACHP reached agreement [Memorandum of Agreement (MOA)] through the Section 106 process, and this MOA includes stipulations which amount to Measures to Minimize Harm, and those measures will be incorporated in the project?	X	
B. For bridges that are to be rehabilitated to the point that the historic integrity is affected or that are to be moved or demolished have fully adequate records been made of the bridge in accordance with the Historic American Engineering Record (HAER) or other suitable means developed through the Section 106 consultation?		
C. For bridges that are to be replaced; has the existing bridge been made available for an alternate use, provided a responsible party agrees to maintain and preserve the bridge? <i>(If the project is a rehabilitation project, write N/A for this question.)</i>	N/A	
D. For bridges that are to be rehabilitated and there is an "Adverse Effect" on the historic integrity of the bridge, is the historic integrity preserved to the greatest extent possible, and consistent with unavoidable transportation needs, safety, and load requirements? <i>(If the project is a replacement project, write N/A for this question.)</i>	X	

Notes
1. Definition of Use: The action will impair the historic integrity of the bridge either by rehabilitation or demolition. Where the definition of impair is to diminish the qualities that made it eligible for the National Register of Historic Places. (Federal Register, Vol 48, No. 163, dated Monday, August 22, 1983)
2. Consult the Nationwide Programmatic Section 4(f) Evaluation for the generic (not prudent and feasible) reasons that might be addressed. (Federal Register, Vol 48, No. 163, dated Monday, August 22, 1983) The evaluation of alternatives for the subject project, however, must quantify those reasons as applicable and be supported by the circumstances of the project.
3. This criterion will require the advertisement and marketing of the bridge in accordance with FHWA requirements. Marketing will be addressed in programmatic Section 4(f) Evaluation and by appropriate provisions in the Memorandum of Agreement entered into between the State or local agency, FHWA, the SHPO, and the ACHP. Refer to Mr. Leathers' July 22, 1987, memorandum on the applicable requirements for preservation and marketing. Copies of the advertisement and results of marketing efforts must be furnished to FHWA prior to replacement of the historic bridge.
4. When it has been determined by FHWA in consultation with the SHPO and ACHP that the rehabilitation work will result in "No Effect" or "No Adverse Effect" on the historic integrity of the structure, the provisions of Section 4(f) Evaluation do not apply.

DETERMINATION AND APPROVAL:

Based on the environmental documentation and analysis, the results of public and agency consultation and coordination, the FHWA has determined that:

The project meets the applicability criteria set forth in the Nationwide Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges dated July 5, 1983;

All of the alternatives set forth in the Findings section of the above Nationwide Section 4(f) Evaluation have been fully evaluated. Based on the Findings, it is determined there is no feasible and prudent alternatives to the use of the Historic Bridge; and

The project complies with the Measures to Minimize Harm Section of the Nationwide Section 4(f) Evaluation; and agreement between FHWA, SHPO and ACHP has been reached.

Accordingly, the FHWA approves the proposed use of the historic bridge for construction under the above Nationwide Section 4(f) Evaluation issued on July 5, 1983.

7-31-83
Date Approved

Sgt V. Phung
Federal Highway Administration

**HAWAII DIVISION
FEDERAL HIGHWAY ADMINISTRATION
PROGRAMMATIC SECTION 4(F) DETERMINATION AND APPROVAL
UNDER THE
NATIONWIDE PROGRAMMATIC SECTION 4(F) EVALUATION
AND APPROVAL FOR FHWA PROJECTS THAT NECESSITATE
THE USE OF HISTORIC BRIDGES
(JULY 5, 1983)**

SECTION 4(F) USE OF LIHUE MILL BRIDGE

Additional Information for "No" Response in Item 6B
In accordance with the Memorandum of Agreement regarding the replacement of the steel railings of Lihue Mill Bridge, the State of Hawaii Department of Transportation has committed to photographic and written documentation of Lihue Mill Bridge using the Historic American Building Survey standards. This work will be conducted during the design phase of the project or prior to construction.

DETERMINATION AND APPROVAL:

Based on the environmental documentation and analysis, the results of public and agency consultation and coordination, the FHWA has determined that:

The project meets the applicability criteria set forth in the Nationwide Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges dated July 5, 1983;

All of the alternatives set forth in the Findings section of the above Nationwide Section 4(f) Evaluation have been fully evaluated. Based on the Findings, it is determined there is no feasible and prudent alternatives to the use of the Historic Bridge; and

The project complies with the Measures to Minimize Harm Section of the Nationwide Section 4(f) Evaluation; and agreement between FHWA, SHPO and ACHP has been reached.

Accordingly, the FHWA approves the proposed use of the historic bridge for construction under the above Nationwide Section 4(f) Evaluation issued on July 5, 1983.

7-31-83

Date Approved

Pat V. Shumy
Federal Highway Administration

**HAWAII DIVISION
FEDERAL HIGHWAY ADMINISTRATION AND APPROVAL
PROGRAMMATIC SECTION 4(F) DETERMINATION AND APPROVAL
UNDER THE
NATIONWIDE PROGRAMMATIC SECTION 4(F) EVALUATION
AND APPROVAL FOR FHWA PROJECTS THAT NECESSITATE
THE USE OF HISTORIC BRIDGES
(JULY 5, 1983)**

SECTION 4(F) USE OF LIHUE MILL BRIDGE

Additional information for "No" Response in Item 68 in accordance with the Memorandum of Agreement regarding the replacement of the steel railings of Lihue Mill Bridge, the State of Hawaii Department of Transportation has committed to photographic and written documentation of Lihue Mill Bridge using the Historic American Building Survey standards. This work will be conducted during the design phase of the project or prior to construction.

APPENDIX C

Traffic Assessment Report

Vehicle Incident Statistics

**KAUMUALII HIGHWAY IMPROVEMENTS
LIHUE TO WEST OF MALUHIA ROAD
PROJECT NO. 50DE-02-95
TRAFFIC ASSESSMENT REPORT
KAUAI, HAWAII**

May 2000

Prepared for:
ParEn, Inc.



Austin, Tsutsumi & Associates, Inc.
Civil Engineers • Surveyors
501 Summer Street, Suite 521
Honolulu, Hawaii 96817-5031
Telephone: (808) 533-3646
Facsimile: (808) 526-1267
Honolulu • Waikaha, Hawaii

**KAUMUALII HIGHWAY IMPROVEMENTS
LIHUE TO WEST OF MALUHIA ROAD
PROJECT NO. 50DE-02-95
TRAFFIC ASSESSMENT REPORT
KAUAI, HAWAII**

Prepared for
ParEn, Inc.

Prepared by
Austin, Tsutsumi & Associates, Inc.
Engineers • Surveyors
Honolulu, Hawaii

May 2000

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TED S. KAMMHOFF, P.E., P.A.C.E.
KONATHI K. KUROKAWA, P.E.
DONCKLE H. FLUKA, P.E.
SHARLET L. WILSON
TERENCE S. AUSTIN, P.E.
MERRIS B. BEE

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(continued)

APPENDICES

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**TRAFFIC ASSESSMENT REPORT FOR
KAUMUALII HIGHWAY IMPROVEMENTS
LIHUE TO WEST OF MALUHIA ROAD
KAUAI, HAWAII
PROJECT NO. 50DE-02-95**

I. INTRODUCTION

Kaumualii Highway is a 33-mile long primary State arterial highway, designated as Route 50. It serves the south and west communities of the Island of Kauai, from Lihue to Mana. These communities include Poipu, Koloa, Lawai, Kalaheo, Eleele, Port Allen, Hanapepe, Waimea, Kekaha, Mana and the Pacific Missile Range at Barking Sands.

The Hawaii Department of Transportation (HDOT) has proposed to widen Kaumualii Highway from a 2-lane highway to a 4-lane divided highway between Lihue and west of Maluhia Road because of increased traffic and associated traffic congestion.

For the purposes of this report, Kaumualii Highway will be described as an east-west highway, with the east direction being to Lihue and the west direction being to the Lawai/Kalaheo area. Figure 1 shows the project location.

A. Purpose and Scope

The purpose of this study is to evaluate the existing traffic impacts and operating conditions on the existing 2-lane roadway section, and its future Year 2020 traffic impacts and operating conditions on the 2-lane and proposed 4-lane divided roadway sections of Kaumualii Highway between Rice Street and west of Maluhia Road. Only the existing conditions and the conditions in the Year 2020 without and with the proposed 4-lane highway widening will be examined; no other alternatives were considered.

B. Project Description

HDOT proposes to widen Kaunualii Highway from a 2-lane highway to a 4-lane divided highway between Rice Street in Lihue and west of Maluhia Road, a distance of approximately 7.5 miles.

In the rural areas, the proposed widening will provide a 4-lane divided highway with two 12-foot lanes in each direction, a 40-foot median which includes a 12-foot left-turn storage lane and a 4-foot paved left shoulder, a 10-foot paved right shoulder which includes a 5-foot bikeway, modifying or installing traffic signal systems, paved gutters, guardrails, and other improvements.

In urban areas, the proposed widening is modified by providing an 8-foot paved right shoulder, curbs and gutters, a 26.5 to 32-foot curbed median which includes a 12-foot left-turn storage lane, a 10-foot bikeway and walkway, modifying traffic signal systems and other improvements.

The major intersections which will be affected are Nawiliwili Road, Kalepa Street, the new Nuhou Street, Quarry Road at Huleia, Puhi Road, and Maluhia Road. Other minor street intersections will also be affected.

Alternative alignment studies have been conducted to determine how the widened highway will be constructed in relation to the existing highway alignment. Alternatives include adding the additional lanes on the mauka or mauka side of the existing highway. Depending on topographical and geographical requirements, it is likely than an alignment that combines mauka and makai improvements will be selected.

II. TRAFFIC ANALYSIS

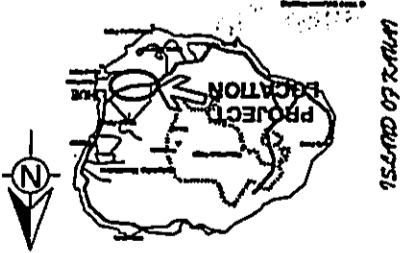
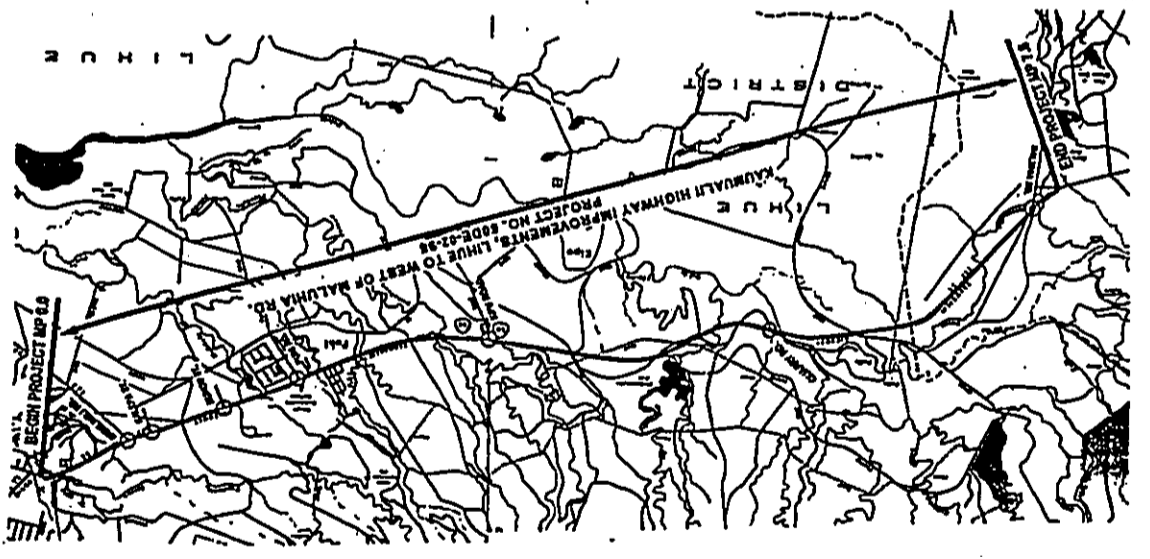
Existing traffic conditions were analyzed based on field counts taken on March 31 and April 1, 1998 and traffic survey data from HDOT's publication, "Traffic Survey Data Island of Kauai 1997."


HDOT's publication, "Kauai Long-Range Land Transportation Plan," (LRLTP) May 1997, was reviewed for future conditions along this route.

A. Existing Conditions

1. Roadway System

Kaunualii Highway, Route 50, is a primary State arterial, running east-west between Lihue and west Kauai. The highway is the primary, and only, access route between Lihue and the west Kauai communities of Poipu, Koloa, Lawai, Kalaheo, Hanapepe, Eleele, Port Allen, Waimea, Kekaha, Mana and the Pacific Missile Range at Barking Sands.



 AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS • SURVEYORS	TRAFFIC ASSESSMENT REPORT KAUNUALII HIGHWAY IMPROVEMENTS LIHUE TO WEST OF MALUHIA ROAD PROJECT LOCATION	FIGURE 1
	2	

2. Traffic Volumes

a. Traffic Data

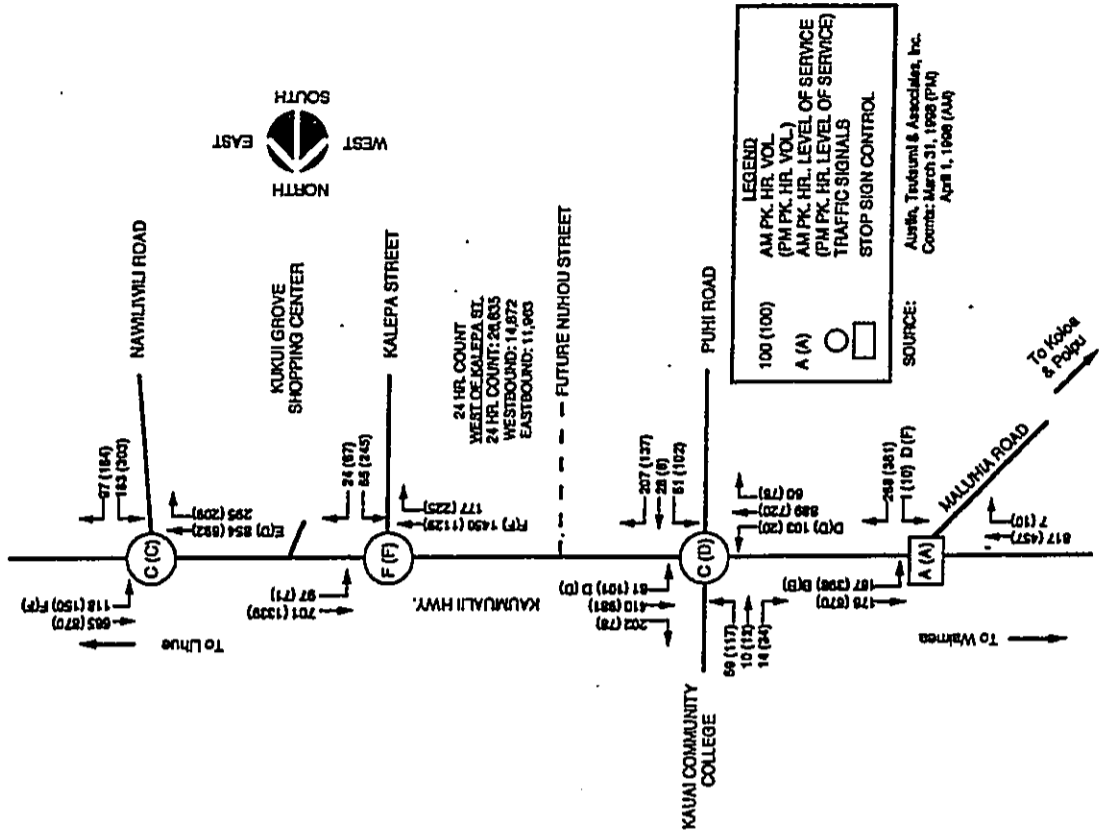
Traffic turning movement counts were obtained during the AM and PM peak period of traffic on March 31 and April 1, 1998 at the following intersections: Nawiliwili Road, Kalepa Street, Puhi Road and Maluhia Road. In addition, a 24-hour mechanical count was taken at a location just west of the intersection of Kalepa Street on the same dates. Figure 2 shows the traffic count and Figure 2a schematically shows the traffic lane configuration at the major intersections.

b. Kaunuaʻili Highway

The LRLTP determined that traffic on Kaunuaʻili Highway east of Maluhia Road increased by 26% from 1988 to 1994 and that the highway is operating at Level of Service (LOS) F. The report indicated that average daily two-way traffic volume on Kaunuaʻili Highway near Puhi was 28,143 vehicles per day (vpd) in 1995; traffic counts taken over a 24-hour period from March 31 to April 1, 1998 at a location just west of Kalepa Street counted 26,835 vehicles. The difference in counts is less than 5% and is probably due to seasonal and daily variations in traffic flow.

Analysis of the existing AM and PM peak hours of traffic indicates that the section of Kaunuaʻili Highway between Lihue and Puhi operates at LOS F, confirming the conclusion of the LRLTP and on-site observations. Field observations confirmed that there is a heavy volume of eastbound vehicles during the AM peak period of traffic from the vicinity of Huleia Bridge to Lihue. The PM peak period of traffic congestion is primarily at the Kalepa Street, Nawiliwili Road, and at Puhi Road signalized intersections.

Because of this heavy traffic, and often congested conditions from Puhi to Lihue, the State Highways Division and the County of Kauai paved a series of local and agricultural roads from Kipu Road to Kalepa Street and Nawiliwili Road, to serve as a bypass to Lihue during periods of extreme highway congestion. Because the Puhi Bypass is a narrow, winding and longer route, it is not used much by commuters except during such conditions.



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KAUNUAʻILI HIGHWAY WIDENING

EXISTING TRAFFIC CONDITIONS

FIGURE 2

3. Major Intersection Traffic Conditions
a. Kaunuaʻali Highway at Nawiliwili Road

Nawiliwili Road is a minor State arterial road between Kaunuaʻali Highway and the Nawiliwili Harbor area. It is also the major access to the Kukui Grove Shopping Center, located on an adjacent property on the south side of Kaunuaʻali Highway. It is a 4-lane divided road from Kaunuaʻali Highway to Pikeake Street; thereafter and to Waapa Road, it is a 2-lane, undivided road.

The intersection of Kaunuaʻali Highway at Nawiliwili Road is a T-intersection with a 3-phase traffic signal system that is interconnected to the traffic signal system at the intersection of Kaunuaʻali Highway and Kalepa Street, approximately 800 feet west. The Kaunuaʻali Highway and Nawiliwili Road intersection presently operates at LOS D during the AM and PM peak hours of traffic.

The traffic signal system provides a protected left-turn phase for westbound Kaunuaʻali Highway left turns onto Nawiliwili Road.

In the Lhu'e-bound direction, an auxiliary lane between Kalepa Street and Nawiliwili Road is provided on Kaunuaʻali Highway. At the Nawiliwili Road intersection, the auxiliary lane is forced to make a right turn.

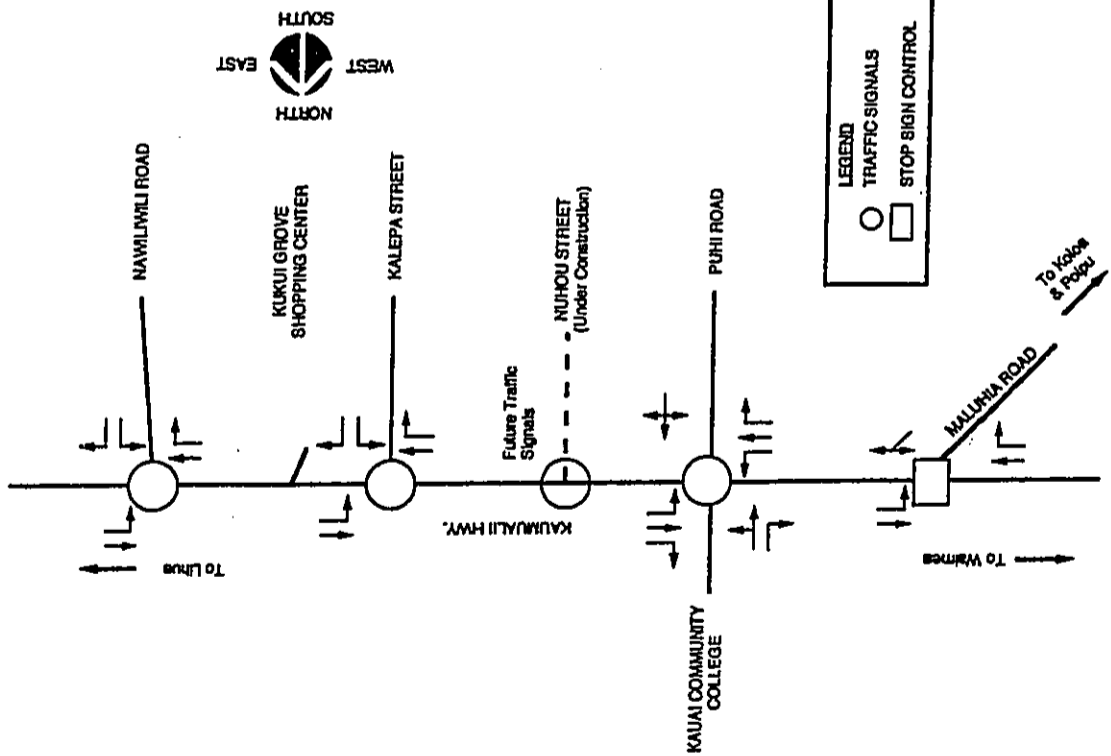
Observations of the traffic flow on Kaunuaʻali Highway from Nawiliwili Road to Kalepa Street indicate that there is a need to optimize the operation and coordination of these two traffic signals. The signal phasing and timing appear to interrupt the smooth flow of traffic on Kaunuaʻali Highway and thus cause backups, particularly during the AM and PM peak periods.

b. Kaunuaʻali Highway at Kalepa Street

Kalepa Street is a 4-lane, undivided County collector road servicing residential and commercial areas makai of Kaunuaʻali Highway. The Kukui Grove Shopping Center also has access on Kalepa Street.

The intersection of Kaunuaʻali Highway at Kalepa Street is a T-intersection with a 3-phase traffic signal system. The intersection presently operates at LOS F during the AM and PM peak hours of traffic.

The traffic signal system provides a protected left-turn phase for westbound Kaunuaʻali Highway, onto Kalepa Street. As previously mentioned, the traffic signal systems at this intersection and Nawiliwili Road need to be optimized.



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TRAFFIC ASSESSMENT REPORT
KAUNUAʻALI HIGHWAY WIDENING
EXISTING TRAFFIC LANES

FIGURE
2a

c. Kaunuauii Highway at Puhi Road/Kaual Community College

The Kaunuauii Highway, Puhi Road and Kaual Community College (KCC) intersection is a 4-legged intersection, with Puhi Road being the south leg and the KCC access road being the north leg. There are left-turn storage lanes and right-turn deceleration lanes for Kaunuauii Highway traffic turning into side streets.

A 3-phase traffic signal system is provided at this intersection. Protected left turns from Kaunuauii Highway into Puhi Road and into KCC are provided.

The traffic signal at this intersection should be optimized. The intersection operates at LOS D during the AM and PM peak hours of traffic.

d. Kaunuauii Highway at Maluhia Road

The Kaunuauii Highway at Maluhia Road intersection is a T-intersection with a STOP sign control for Maluhia Road traffic. Maluhia Road is an arterial County collector road providing access to the communities of Koloa and Poipu. Maluhia Road is known locally as the "tree tunnel road" because of the swamp mahogany trees that line both sides of the road at this intersection.

Maluhia Road intersects Kaunuauii Highway at an approximately 30 degree acute angle. All approaches to the intersection are channelized and the westbound Kaunuauii Highway traffic has a left-turn storage lane for motorists turning into Maluhia Road.

A 1997 State Highways Division traffic count indicates that 8,420 vpd utilize Maluhia Road. The intersection operates at LOS A during the AM and PM peak hours of traffic.

4. Other Intersections

a. Kaunuauii Highway at Hoomana Road

Hoomana Road and an access road to Lihue Plantation's mauka mill site are located on the Lihue side of the Lihue Plantation bridge on Kaunuauii Highway near the beginning of this project. Hoomana Road is a private road serving approximately 23 residences and a church; the Lihue Plantation mill road provides access to its mauka mill facilities.

b. Quarry Road at Huleia Bridge

The Quarry Road at Huleia Bridge is a private road providing access to a rock quarry and batching plant. While no traffic counts were taken at this intersection, the quarry and batching plant operations are still active at the time of this writing.

c. Kaunuauii Highway at Kipu Road

Portions of Kipu Road, Hulemalu Road and Halehaku Road, which have been improved and paved, provides a bypass route (temporary Puhi Bypass) to Nawiliwili Road and Lihue. This roadway is relatively narrow and winding; therefore, it is primarily utilized during the AM peak hour of traffic when Kaunuauii Highway is heavily congested.

Traffic counts taken by the HDOT indicate that the route is lightly used under normal conditions.

d. Other Accesses

There are a number of other private accesses, such as driveways, haul cane roads, etc. which access the highway. These accesses may range from infrequent use, such as haul cane roads, to frequent use, such as the access road to Kiohaha Museum and Gaylord's Restaurant.

The new Nuhou Street intersection between Puhi Road and Kalepa Street is currently under construction. This new street is planned to be completed in the Year 2000 and will provide access to the Improved Nuhou Street being constructed by Grove Farm Properties, Inc. (GFP).

B. Future Conditions

1. Introduction

Traffic projections for the Design Year (Year 2020) are based on the Kaual LRLTP prepared by Austin, Trutman & Associates, Inc. This study was a complete update of the previous study prepared in 1991.

As described in the report, "The transportation plan was developed through the Countywide Transportation Planning Process (CTPP), a cooperative, comprehensive and continuing transportation planning effort involving the State of Hawaii and the...counties. The participating agencies include the State Department of Transportation, County of Kaual Department of Public Works and the County of Kaual Planning Department." In addition, community and other agencies participated in the preparation of the report. Therefore, the Kaual LRLTP stands as a comprehensive document for the land transportation needs of the County of Kaual.

The County of Kaual suffered severe damages from Hurricane Iniki in September 1992. As a result of the damages caused by the hurricane, there was a resultant dislocation in population and employment. Kaual has been in the process of recovery

for the past several years. This recovery process and continued growth in areas such as Popou, Kotoa and other west Kauai areas will create increased demands on Kaunuaui Highway.

Grove Farm Properties, Inc. is developing a large 598-acre area between Puhi and Nawiliwili. Pacific Planning & Engineering, Inc. prepared a traffic impact assessment report for GFP in 1994 to examine the impacts of the development of GFP's Lihue/Puhi Project District. The study examined the effects of, among other items, the construction of new roads within the development, the construction of a new intersection connecting the future Nuhoou Street with Kaunuaui Highway and other traffic impacts on existing roadways within the study area. The report projected completion of the development in Year 2000; however, the status of total development is not known at this time.

Figure 3 shows the LOS for the Year 2020 without the highway improvements.

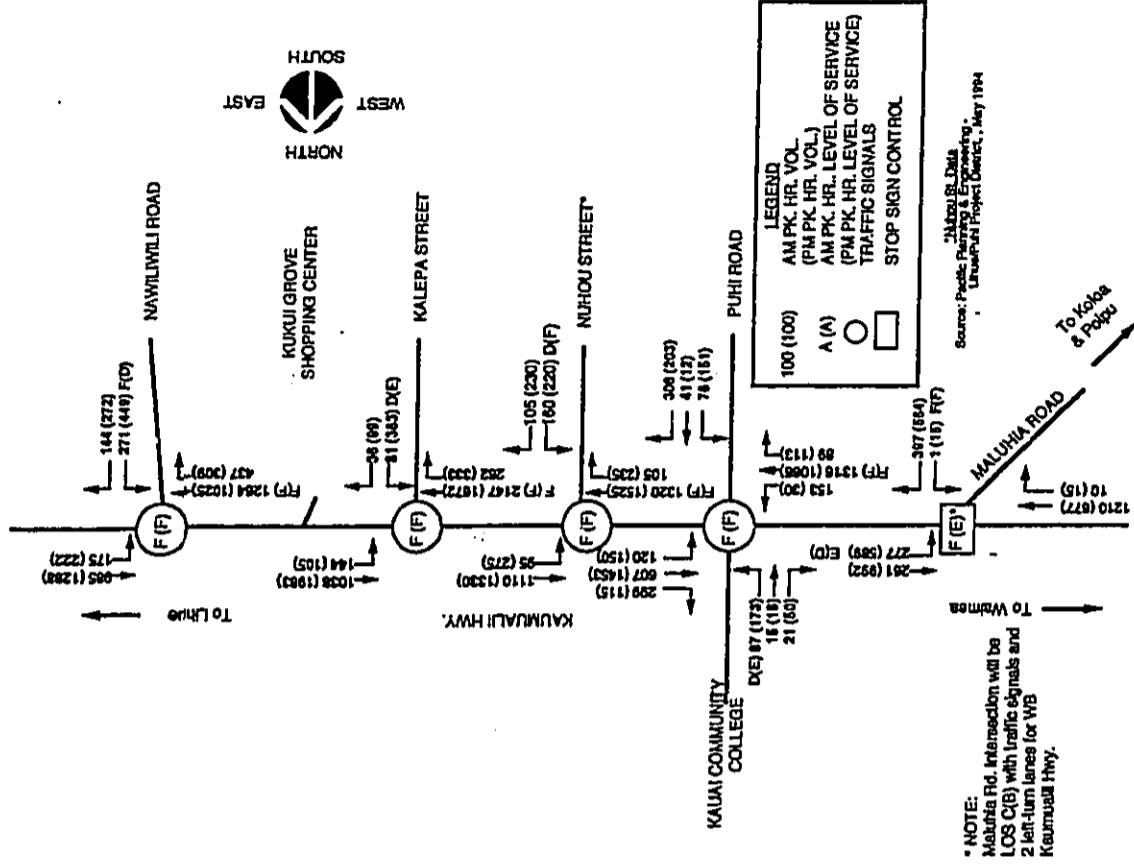
2. Future Traffic Volumes and Levels of Service

a. Kaunuaui Highway

The LRLTP concluded that traffic deficiencies for the Year 2020 on Kauai would primarily occur between Waimea on the west and Kepaa on the east. Kaunuaui Highway is already operating at over capacity and traffic is forecasted to increase to an average daily traffic (ADT) volume of approximately 37,600 vpd by Year 2020. The LRLTP recommended improvements to Kaunuaui Highway and its major intersections as high priority. Table 1 shows the Base Years levels of service:

Table 1
Kaunuaui Highway West of Kalepa Street
Base Years Levels of Service (LOS)
No Improvements

Time	Base Year 1998 Two Lanes	Base Year 2020 Two Lanes
AM Peak Hour of Traffic	F	F
PM Peak Hour of Traffic	F	F



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TRAFFIC FROM KAUNUAUI HWY

TRAFFIC ASSESSMENT REPORT
KAUNUAUI HIGHWAY WIDENING
YEAR 2020 TRAFFIC CONDITIONS
WITHOUT IMPROVEMENTS

FIGURE
3

b. Nawiliwili Road Intersection

Nawiliwili Road will continue to be a minor arterial connecting Nawiliwili Bay and Kaunuaia Highway in this area. Most of the adjacent areas are developed or are in the process of being developed. GFP's Puhi project will involve extensive development along the west side of Nawiliwili Road.

c. Kalepa Street Intersection

The area served by Kalepa Street is presently only partially built and will continue to grow as additional residential and commercial areas are developed. Its intersection with Kaunuaia Highway is already signalized and coordinated with the traffic signal system at Nawiliwili Road; future improvements should include improving the timing and optimization of the traffic signal system with Nawiliwili Road.

d. Maluhia Road Intersection

Maluhia Road serves the major resort area of Poipu. As the major link between Poipu and Kaunuaia Highway for travel to and from the Lihue area, traffic will continue to increase as the resort area grows. Traffic is projected to increase to 24,300 vpd in Year 2020. Maluhia Road is recommended to be widened to a 4-lane undivided highway. Without the widening, the road is projected to operate at LOS "F".

The increased traffic on Maluhia Road will warrant the installation of a traffic signal system at its intersection with Kaunuaia Highway, particularly with the heavy left-turn demand from westbound Kaunuaia Highway into Maluhia Road.

e. Other Intersections

1) New Nuhou Street Connection

Construction of the new Nuhou Street connection on Kaunuaia Highway, between Puhi Road and Kalepa Street, is presently planned for completion in 2000. The connector road will provide access to GFP's developments between Puhi and Nawiliwili Road and will eventually provide an alternate route between Puhi and Lihue.

A temporary span-wire traffic signal system is being installed at the new intersection with Kaunuaia Highway.

2) Quarry Road

The Quarry Road adjacent to Huleia Stream will continue to be used in the near future. Because the road serves a quarry and concrete batching

plant, it is expected that heavy concrete mixers and aggregate trucks will continue to require access on Kaunuaia Highway. Therefore, acceleration and deceleration lanes should be provided for both directions of travel on Kaunuaia Highway. Because the highway grade in the Lihue-bound direction is 3.05%, a median acceleration lane should be provided for Lihue-bound trucks. Even then, these heavily loaded trucks may not be able to accelerate to highway speeds on the uphill grade and will have to merge into traffic and move to the right lane. Due to the 3.74% grade on Kaunuaia Highway, the truck-climbing lane in the westbound direction should be retained.

3. Proposed Highway Improvements

The following are recommended improvements for the proposed project:

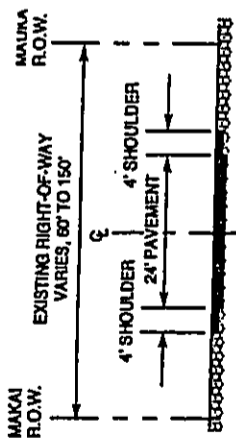
a. Kaunuaia Highway

The LRLTP concluded that Kaunuaia Highway should be widened to a 4-lane divided highway, with the possibility for a 6-lane divided highway in selected segments, depending on whether other proposed roadway improvements are implemented. Initial improvements should be to construct a 4-lane divided highway.

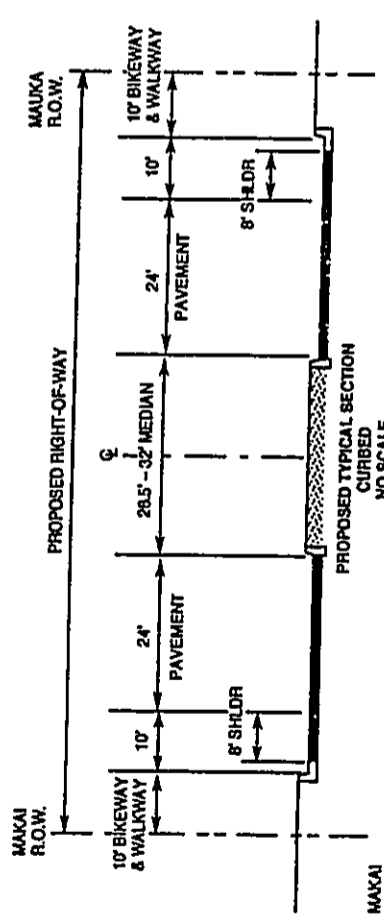
The proposed widening under this project will provide a 4-lane divided highway consisting of two 12-foot lanes in each direction, a 40-foot wide median and 10-foot paved right shoulders. Figure 4 shows the typical roadway sections and Figure 5 shows the levels of service at the major intersections with the recommended improvements. Table 2 shows the level of service for Kaunuaia Highway with the highway improvements.

Table 2
Kaunuaia Highway
Year 2020 Levels of Service (LOS)
With Widening to 4-Lane Divided Highway

Time	Year 2020 Eastbound	Year 2020 Westbound
AM Peak Hour of Traffic	B	A
PM Peak Hour of Traffic	B	B



EXISTING HIGHWAY TYPICAL SECTION NO SCALE



PROPOSED CURBED TYPICAL SECTION NO SCALE

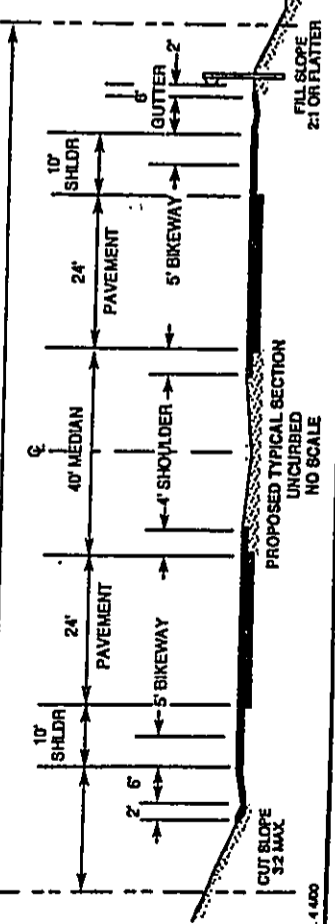
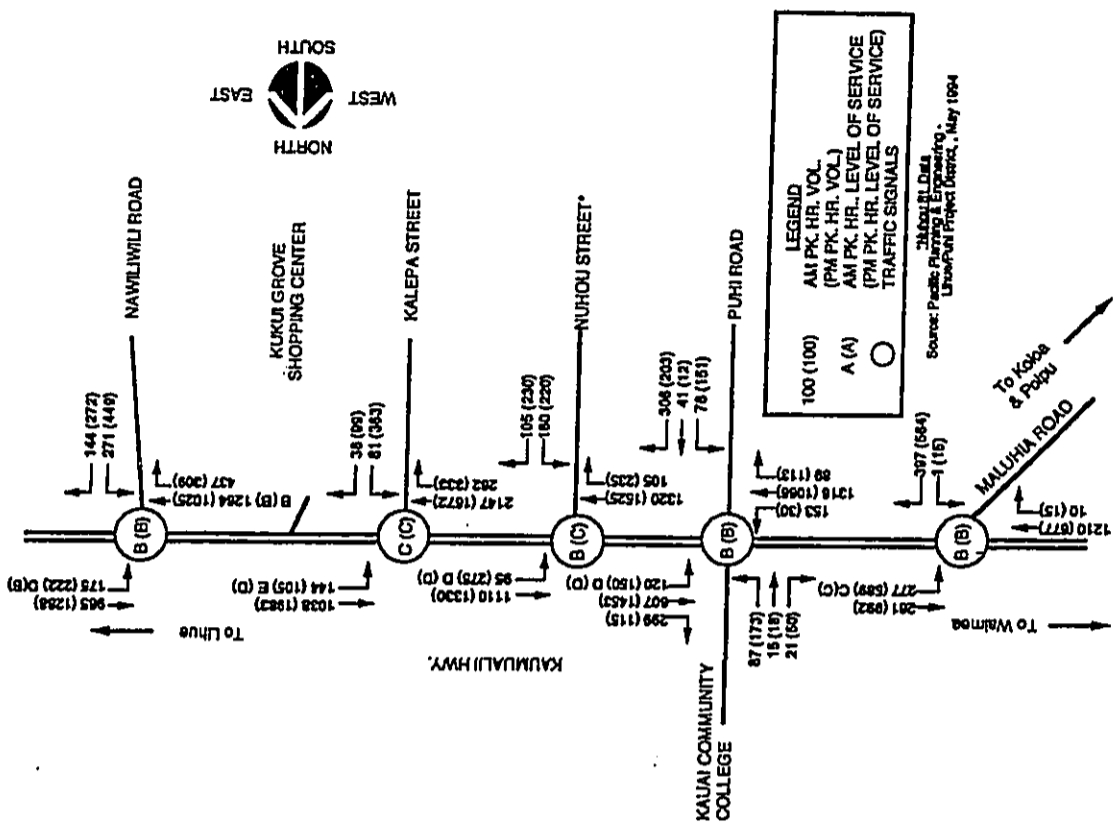


FIG. 4-400

 AUSTIN, ISLITSILMA & ASSOC., INC. ENGINEERS • SURVEYORS	TRAFFIC ASSESSMENT REPORT KAUMUALI HIGHWAY WIDENING TYPICAL SECTIONS	FIGURE 4
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LEGEND

- 100 (100) AM PK. HR. VOL. (PM PK. HR. VOL.)
- A (A) AM PK. HR. LEVEL OF SERVICE (PM PK. HR. LEVEL OF SERVICE)
- TRAFFIC SIGNALS

Source: Public Planning & Engineering, Department of Project District, May 1994

 AUSTIN, ISLITSILMA & ASSOC., INC. ENGINEERS • SURVEYORS	TRAFFIC ASSESSMENT REPORT KAUMUALI HIGHWAY WIDENING YEAR 2020 TRAFFIC CONDITIONS WITH IMPROVEMENTS	FIGURE 5
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b. Major Intersections

All major intersections will be channelized, with median deceleration and left-turn storage lanes, and right-turn in deceleration and right-turn out acceleration lanes. All speed change lanes shall have a 180-foot taper. For purposes of this report, the length of the speed change lanes shall include the 180-foot taper.

At signalized intersections, a 180-foot taper should be provided for side street traffic turning right into Kaunuaia Highway.

Table 3 summarizes the intersection LOS for the major intersections for 1998 traffic conditions, 2020 traffic conditions without improvements and 2020 traffic conditions with the highway widening and intersection improvements.

Table 3
 Summary of Intersection Levels of Service (LOS)

INTERSECTING STREET	1998 Existing		2020 With No Improvements		2020 With Improvements	
	AM	PM	AM	PM	AM	PM
Nawiliwili Road	C	C	F	F	B	B
Kalepa Street	F	F	F	F	C	C
Nuhou Street (New)	N/A	N/A	F	F	B	C
Puhi Road/KCC	C	D	F	F	B	B
Maluhia Road	A	A	F	E	B	B

1) Nawiliwili Road

Nawiliwili Road will remain classified as a minor arterial connecting Kaunuaia Highway to the Nawiliwili Bay area. It also continues to serve as a major access route to the Kukui Grove Shopping Center.

The existing traffic signal system will require reconstruction due to the road widening. The traffic signal system must be inter-connected with the Kalepa Street traffic signal system. The present interconnection is on overhead wires attached to existing utility poles; the interconnect cable should be installed underground.

The present interconnected traffic signal system consists of the intersections of Nawiliwili Road/Kaunuaia Highway and Kalepa Street/Kaunuaia Highway. The master controller is located on Kalepa Street. The new Nuhou Street traffic signal system will be inter-connected to the master controller to provide coordinated traffic signal operation on Kaunuaia Highway.

A 500-foot long left-turn storage and deceleration lane is recommended for westbound vehicles on Kaunuaia Highway turning left into Nawiliwili Road. Double left-turn lanes should be provided for northbound Nawiliwili Road motorists going west on Kaunuaia Highway and a separate right-turn lane for motorists proceeding east on Kaunuaia Highway.

A double left-turn lane for westbound Kaunuaia Highway left turns into Nawiliwili Road will be necessary when the GFP Puhi development is built out. Therefore, space should be allotted in the median or in the highway right-of-way for the additional lane in the future. Figure 6 shows a proposed layout.

2) Kalepa Street

Recommended improvements at the Kalepa Street intersection are similar to the recommendations for Nawiliwili Road. The traffic signal system at this intersection will require reconstruction and interconnection with the Nawiliwili Road traffic signal system. Additionally, a 500-foot right-turn deceleration lane is recommended for eastbound Kaunuaia Highway traffic turning into Kalepa Street.

This road also serves the Kukui Grove Shopping Center, although to a lesser degree than the Nawiliwili Road accesses. Multi- and single-family residential areas are also located off Kalepa Street.

The Kalepa Street northbound approach to the Kaunuaia Highway intersection should be designed as a 2-lane approach to Kaunuaia Highway, with one lane for left turns into westbound Kaunuaia Highway and one right-turn lane into Kaunuaia Highway eastbound. The intersection should be designed to accommodate possible future double left-turn lanes from Kalepa Street onto Kaunuaia Highway.

A double left-turn lane for westbound Kaunuaia Highway into Kalepa Street will be necessary when the GFP Puhi development is built out. Therefore, space should be allotted in the median or in the highway right-of-way for the additional lane in the future. Figure 6 shows a proposed layout.

3) Nuhou Street

The new Nuhou Street will be available for traffic in late 2000. The roadway will connect to Kaunuaia Highway at a T-intersection between Nani Street and Kalepa Street. Nuhou Street will be a 4-lane undivided county collector

street serving Grove Farm's approximately 600-acre Lihue/Puhi Development.

Grove Farm is constructing a new temporary span-wire traffic signal system at this intersection. The traffic signals will have to be reconstructed to a permanent underground system when Kaunuaui Highway is widened.

4) Puhi Road

The improvements should include providing left-turn storage lanes for each approach on Kaunuaui Highway as well as right-turn deceleration lanes. Kauai Community College's exit roadway should be reconstructed to provide a longer 2-lane storage for exiting traffic.

5) Quarry Road

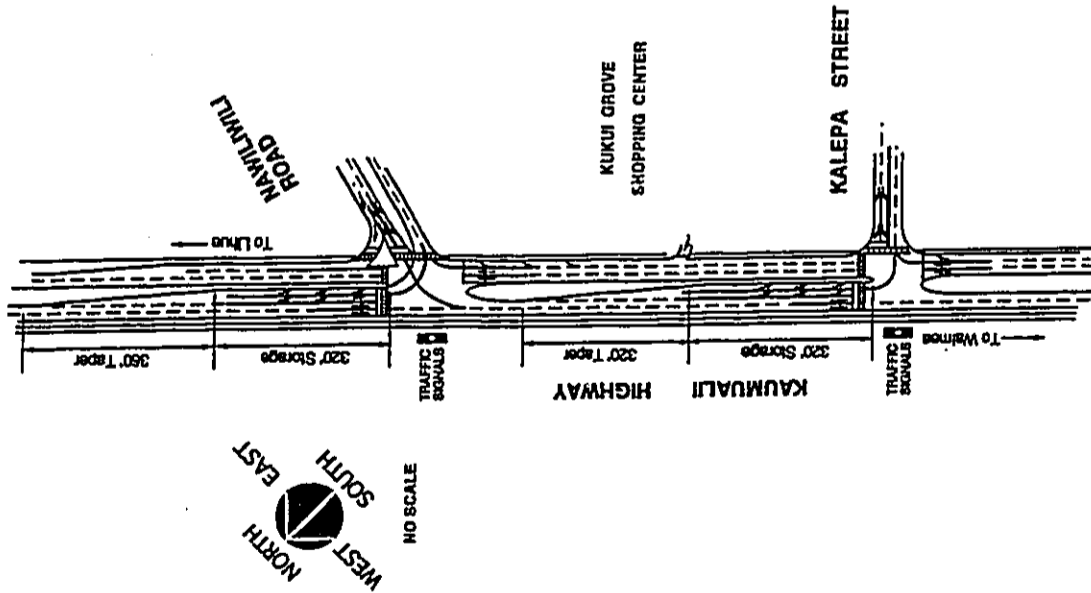
The following are alternatives for the Quarry Road and Kaunuaui Highway intersection:


a) Alternate 1

Trucks turning left from Quarry Road going in the Lihue direction will be climbing a 1,000-foot grade of 3.05%. The AASHTO "Green Book" estimates that a typical heavy truck would attain a speed of about 24 miles per hour at this grade and distance and about another 1,500 feet at near level grade to attain a final speed of 40 mph. Since the truck is merging into the left, or fast, lane of the highway, it is especially critical that the merging speed of the truck be at nearly the speed of mainline traffic. It may be necessary to construct a 2,000-foot median acceleration/truck-climbing lane. Estimated cost for constructing the median acceleration lane is \$300,000.

b) Alternate 2

A second alternative is to realign the southbound access of Quarry Road to Kaunuaui Highway, Lihue-bound, by reconstructing the existing old roadway on the east bank of Huleia Stream under Huleia Bridge and constructing an on-ramp to the eastbound lanes of the new Kaunuaui Highway. Construction of a retaining wall on the stream side of the road will probably be required to accommodate the heavy traffic loads. This alternative permits the slow-moving, heavy trucks to merge into the right, or slow, lane of the highway. This alternative is estimated to cost about \$1.0 million.



 AUSTIN, TEJEDA & ASSOCIATES, INC. ENGINEERS & SURVEYORS	TRAFFIC ASSESSMENT REPORT KAUNUAUI HIGHWAY IMPROVEMENTS PROPOSED DOUBLE LEFT TURNS AT NAWILIWILI RD. AND AT KALEPA ST.	FIGURE 6
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An advantage to this alternative is that the reconstructed roadway can serve as a grade-separated roadway connecting areas on both sides of the highway if there are future uses in the area.

c) **Alternate 3**

A third alternative is to install a traffic actuated signal system at the intersection to control traffic movements in and out of Quarry Road. Although there are no traffic signal warrants in the Manual on Uniform Traffic Control Devices (MUTCD) based on probable safety hazards, it may be possible to justify the signals due to heavy, slow-moving trucks turning left from Quarry Road having to merge into the fast traffic lane on an upgrade, and merging again into the slower right traffic lane. Safety considerations have been used to justify installation of traffic signals at major haul cane crossings where there is fast traffic, such as on Haleakala Highway on Maui. The traffic signal system should be a 3-phase, traffic-actuated signal to allow protected left turns into and out of Quarry Road. It is anticipated that delays to highway traffic would be minimal, with proper timing for the left-turning traffic, and would permit trucks exiting Quarry Road to move immediately into the right lane of Kaunuaui Highway. Estimated cost for a traffic signal system is \$170,000.

6) **Kipu Bypass**

The Kipu Bypass presently serves as a "safety valve" to permit Lihue-bound traffic to bypass severe congestion, which may occur on Kaunuaui Highway between Puhi and Lihue. The need for this road will be diminished with the implementation of this widening project.

It is anticipated that the Kipu Bypass and Kipu Road will revert to their previous function as rural roads providing access to the mostly agricultural Kipu area.

7) **Maluhia Road**

The T-intersection of Kaunuaui Highway at Maluhia Road should be redesigned to provide an approximately 90-degree angle of intersection. The intersection design should be sensitive to the community's desire that the

"tree tunnel" effect on Maluhia Road be preserved. The LRLTP forecasts that Maluhia Road traffic will increase by the Year 2020 to warrant its widening to a 4-lane road.

Traffic volumes for left turns from westbound Kaunuaui Highway into southbound Maluhia Road are projected to exceed 600 vehicles per hour in the PM peak hour of traffic in 2020; therefore, traffic signals are warranted and should be installed. The intersection should be improved by constructing a 480-foot long double left-turn deceleration/storage lane plus taper for westbound Kaunuaui Highway.

Eastbound Kaunuaui Highway should have right-turn deceleration and acceleration lanes at Maluhia Road.

Sirealights are recommended to illuminate the intersection at night, due to its location on a horizontal curve and at the crest of a grade. Maluhia Road is also the main entry to the Koba/Poipu resort areas, a major tourist destination, and many drivers may be unfamiliar with the area when driving at night.

8) **Minor Intersections**

Most of the minor intersections serve small residential areas, cane haul roads, or other light traffic generators. Most are also T-intersections. These intersections should have median left-turn deceleration/storage lanes and median left-turn acceleration lanes.

In the more rural segments of the highway, the number of accesses should be limited and opportunities for median U-turns can be incorporated in the design to provide access to adjacent private roads and driveways.

III. **CONCLUSIONS**

The traffic projections indicate that improvements are needed for this segment of Kaunuaui Highway. The improvements should include widening the highway and retiming traffic signals for more efficient operations.

The "Kauai Long-Range Land Transportation Plan", May 1997, has identified the improvement of Kaunuaui Highway from Maluhia Road to Lihue as a high priority project.

IV. RECOMMENDATIONS

The following highway intersection improvements are recommended for implementation, based on the assumption that Kaunuaʻali Highway is widened to a 4-lane divided highway and as resources become available:

A. Reconstruct the Nawiliwili Road Intersection

1. Reconstruct existing traffic signal system to accommodate new intersection design.
2. Construct median left-turn storage lane for westbound Kaunuaʻali Highway traffic turning into Nawiliwili Road.
3. Construct acceleration lane on Kaunuaʻali Highway for right turns from Nawiliwili Road.

B. Reconstruct the Kalepa Street Intersection

1. Replace span-wire traffic signal system with a new traffic signal system with underground wiring. Interconnect system with Nawiliwili Road and Nuhou Street traffic signal systems.
2. Construct median left-turn storage lane for westbound Kaunuaʻali Highway traffic turning into Kalepa Street. Provide right-of-way to accommodate an additional left-turn lane in the future.
3. Construct deceleration lane on Kaunuaʻali Highway for right turns into Kalepa Street.

C. Reconstruct the Nuhou Street/Kaunuaʻali Highway Intersection

1. Replace the existing span-wire traffic signal system with a new traffic signal system, traffic signal standards and underground wiring. Interconnect the traffic signal system with Kalepa Street.
2. Construct median left-turn storage lane for westbound Kaunuaʻali Highway traffic turning into Nuhou Street.
3. Construct deceleration and acceleration lanes on Kaunuaʻali Highway at Nuhou Street.

D. Reconstruct the Puhī Road/Kaunuaʻali Community College (KCC) Intersection and Traffic Signal System

1. Construct left-turn storage lanes in the median for traffic on Kaunuaʻali Highway.
2. Widen the Puhī Road approach to the intersection to provide 2 approach lanes at the intersection.
3. Redesign the KCC access road to provide 3 lanes approaching the traffic signals – a left-turn lane, a through lane and a right-turn lane. Widen the exit road to 2 lanes and lengthen it to provide additional storage for exiting traffic.

4. Construct right-turn deceleration and acceleration lanes on Kaunuaʻali Highway for Puhī Road and the KCC access road.

E. Reconstruct the Quarry Road Intersection

The alternatives for reconstructing the intersection are:

Alternative 1: Construct at-grade intersection with median left-turn storage/deceleration lane for eastbound vehicles turning left into Quarry Road. Construct a 2000-foot long median truck-climbing and acceleration lane for southbound left turns into eastbound Kaunuaʻali Highway. Estimated construction cost is \$300,000.

Alternative 2: Reconstruct and improve the roadway under the Huleia Stream Bridge of Kaunuaʻali Highway to support truck traffic and construct an on-ramp to the eastbound lanes of the highway. The roadway improvements may require the construction/reconstruction of retaining walls along the stream embankment fronting the roadway. Estimated construction cost is \$1.0 million.

Alternative 3: Construct an at-grade intersection with 3-phase traffic-actuated traffic signals with eastbound median left-turn storage/deceleration lane. Estimated construction cost is \$170,000.

The selection of the improvement alternative may be dependent on available funding, the expected operating life of the existing quarry and batching plant, and future use of the areas served by this intersection.

In addition to the above alternatives, the following improvements are recommended for all alternatives:

1. Channelize the Quarry Road side of the intersection to provide easier right turns from Quarry Road into Kaunuaʻali Highway.
2. Construct a deceleration and acceleration lane on Kaunuaʻali Highway for traffic turning right at Quarry Road.

F. Reconstruct the Maluhia Road Intersection

1. Realign the Maluhia Road approach to Kaunuaʻali Highway to improve the angle of intersection to approximately 90 degrees.
2. Install a 3-phase traffic signal system.
3. Construct double left-turn deceleration/storage lanes for westbound Kaunuaʻali Highway traffic turning left into Maluhia Road.

4. Construct right-turn deceleration and acceleration lanes on eastbound Kaunualii Highway at Matuhia Road.
5. Install street lights at Intersection.
6. Design improvements at this Intersection, and particularly on Maluhia Road, with consideration of the community's desire to retain the appearance of the area as much as possible.

G. Construct Minor Street Intersections to Provide Access to/from Kaunualii Highway, as follows:

1. Humane Society Road: Full access
2. Anonui Street: Full access
3. Nani Street: Full access
4. Uaui Road: Full access
5. Hoomana Road: Full access
6. Hala Street: Left turn in, right turn in and out
7. Driveway to Kiihaha Museum and Gaylord's Restaurant: Full access

Full access provides for all turning movements into and out of the side streets at their intersections with Kaunualii Highway.

- H. Construct haul cane road accesses and crossings as required. The accesses should be designed to accommodate expected traffic. In most cases, the haul cane road accesses will be used infrequently, therefore, 40-foot wide median openings without deceleration and acceleration lanes, similar to a U-turn design, will be appropriate.

During periods of heavy use, such as harvesting, the plantations should install temporary warning signs on all highway approaches and control traffic with off-duty police officers.

1. Construct 40-foot wide median U-turns at approximately 1/2 to 1-mile intervals, where required, to provide access to minor driveways and accesses. These U-turns could be coordinated and provided at haul cane road accesses.

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Appendices are not included. They can be reviewed at the State of Hawaii
Department of Transportation, Highway Division, Kaula District office.

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Appendix C VEHICLE INCIDENT STATISTICS

Year	Type of Incident		Total incidents
	Major	Minor	
Kaunualii Highway from 0 to 11 kilometer (7 mile) marker			
1995	9	13	22
1996	5	8	13
1997	8	25	33
1998	8	24	32
1999	15	13	28
2000*	5	8	13
Kuhio Highway from 0 to 16 kilometer (10 mile) marker			
1995	76	224	300
1996	97	225	322
1997	87	249	336
1998	100	223	323
1999	100	233	333
2000*	56	143	199

Note: *As of July 3, 2000.

Source: County of Kauai Police Department

APPENDIX D

Air Quality Analysis Report

**AIR QUALITY STUDY
FOR THE PROPOSED
IMPROVEMENTS TO KAUMUALII HIGHWAY
LIHUE TO WEST OF MALUHIA ROAD**

KAUAI, HAWAII

Prepared for:

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January 2000



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1.0 SUMMARY

The Hawaii Department of Transportation, Highways Division, is proposing to improve Kaunualii Highway on the island of Kauai from Lihue and to approximately 4,400 feet west of Maluhia Road. The proposed project would widen this section of Kaunualii Highway from two lanes to four lanes to help alleviate traffic congestion in the area. This study examines the potential short- and long-term air quality impacts that could occur as a result of construction and use of the proposed facilities and suggests mitigative measures to reduce any potential air quality impacts where possible and appropriate.

Both federal and state standards have been established to maintain ambient air quality. At the present time, seven parameters are regulated including: particulate matter, sulfur dioxide, hydrogen sulfide, nitrogen dioxide, carbon monoxide, ozone and lead. Hawaii air quality standards are more stringent than the comparable national standards except for those for sulfur dioxide and for particulate matter.

Regional and local climate together with the amount and type of human activity generally dictate the air quality of a given location. The climate of the project area is very much affected by its windward and coastal situation. Winds are predominantly trade winds from the northeast except for occasional periods when kona storms may generate strong winds from the south or when the trade winds are weak and landbreeze-seabreeze circulations may develop. Wind speeds typically vary between about 5 and 15 miles per hour providing relatively good ventilation much of the time. Temperatures in the windward Kauai area are generally very moderate with average daily temperatures ranging from about 65°F

to 85°F. The extreme minimum temperature recorded at nearby Lihue is 50°F, while the extreme maximum temperature is 90°F. Monthly rainfall has been measured to vary from as little as a trace to as much as 25 inches or more. Average annual rainfall amounts to about 43 inches with summer months being the driest.

Except for occasional dust and smoke from nearby agricultural operations, the present air quality of the project area is relatively good. Air quality data from the nearby Lihue monitoring station operated by the state indicate that both state and national air quality standards for particulate matter, the sole pollutant measured there, are currently being met. It is likely, however, that carbon monoxide concentrations may occasionally exceed the more stringent state standards near traffic-congested areas.

If the proposed project is given the necessary approvals to proceed, it may be inevitable that some short- and long-term impacts on air quality will occur either directly or indirectly as a consequence of project construction and use. Short-term impacts from fugitive dust will likely occur during the project construction phase. To a lesser extent, exhaust emissions from stationary and mobile construction equipment, from the disruption of traffic, and from workers' vehicles may also affect air quality during the period of construction. State air pollution control regulations require that there be no visible fugitive dust emissions at the property line. Hence, an effective dust control plan must be implemented to ensure compliance with state regulations. Fugitive dust emissions can be controlled to a large extent by watering of active work areas, using wind screens, keeping adjacent paved roads clean, and by covering of open-bodied trucks. Other dust control measures could include limiting the area that can be disturbed at any given time and/or mulching or chemically

stabilizing inactive areas that have been worked. Paving and landscaping of project areas early in the construction schedule will also reduce dust emissions. Monitoring dust during the period of construction could be considered as a means to evaluate the effectiveness of the project dust control program. Exhaust emissions can be mitigated by moving construction equipment and workers to and from the project site during off-peak traffic hours and by keeping road closures during peak-traffic hours to a minimum.

After construction, the widened roadway will improve traffic flow in the area, which should reduce traffic-related air pollution emissions, but the widened roadway will tend to concentrate more traffic near intersections along the project corridor. To assess the impact of the roadway widening project, an air quality modeling study was undertaken to estimate current ambient concentrations of carbon monoxide at four intersections in the project corridor and to predict future levels both with and without the proposed project at the same four intersections. During worst-case conditions, model results indicated that present 1-hour and 8-hour carbon monoxide concentrations are probably well within the national ambient air quality standards but that slight exceedances of the more stringent state standards are possible at the three signalized intersections (Nawiliwili Road, Kalepa Street and Puhi Road). The highest concentrations were predicted to occur near Puhi Road.

In the year 2020 without the project, carbon monoxide concentrations were predicted to increase at all four locations studied, particularly at the intersection of Kaunualii Highway and Maluhia Road. Similar to the existing case, the location with the highest worst-case concentration was the intersection of Kaunualii Highway and Puhi Road. In this scenario, all four

locations studied were predicted to exceed the state standards but comply with the national standards.

With the project in the year 2020, worst-case carbon monoxide concentrations within the project corridor were predicted to decrease at all four locations studied compared to the without-project case. The predicted decrease was especially pronounced at the intersection of Kaunualii Highway and Maluhia Road. The location with the highest concentration continued to be the intersection of Kaunualii Highway and Puhi Road. Worst-case concentrations near this intersection as well as at two of the other three locations evaluated exceeded the allowable concentrations specified in the state standards. All locations studied were found to meet the less stringent national standards.

It should be noted that, because the state standards for carbon monoxide are set at such stringent levels, it is likely that the standards are currently exceeded at many locations in the state that have even moderate traffic volumes.

Options available to mitigate long-term, traffic-related air pollution are generally to further improve roadways, to reduce individual vehicular emissions or to reduce traffic. However, in some cases, improving roadways may actually result in reduced air quality at some locations. Reducing individual vehicular emissions is probably beyond the scope of the proposed project. Attempting to reduce traffic volumes through the promotion of bus service and carpooling and by staggering local school and business hours could serve to reduce air quality impacts, but this mitigation measure is generally only partially successful. Another potential mitigation measure might be to provide added buffer zones between new walkways and roadways where space is

available. Technically, however, the public would have to somehow be excluded from the buffer zones.

In view of the fact that the predicted worst-case carbon monoxide concentrations with the project are well within the national ambient air quality standards, that concentrations will be reduced with the project (i.e., air quality will improve), and that the more stringent state standards are probably currently exceeded near many roadway intersections in the state where traffic volumes are moderate to high, implementing air quality mitigation measures for long-term traffic-related impacts from the proposed project is probably unnecessary and unwarranted.

2.0 INTRODUCTION AND PROJECT DESCRIPTION

The Hawaii Department of Transportation, Highways Division (HDOT), is proposing to improve an approximately 7.5-mile section of Kaunualii Highway on the island of Kauai from Lihue to approximately 4,400 feet west of Maluhia Road (see in Figure 1). Kaunualii Highway is a major State primary arterial, designated Route 50, running east-west between Lihue and West Kauai. The highway is the only, or primary, access route between Lihue and the west Kauai communities of Poipu, Koloa, Lawai, Eleele, Port Allen, Hanapepe, Kalaeo, Waimea, Kekaha, Mana and the Pacific Missile Range at Barking Sands.

Presently, Kaunualii Highway between Lihue and Maluhia Road is a two-lane roadway. During the past ten years, traffic volumes on Kaunualii Highway have increased substantially, and major intersections operate at over or near capacity during peak traffic periods. Congested traffic conditions are expected to grow worse during the next several years.

To help alleviate the congested traffic conditions, HDOT is proposing to widen Kaunualii Highway to four lanes. The improved roadway would become a four-lane divided highway with 12-foot lanes, 10-foot right-side shoulders, 40-foot median, 12-foot median left-turn storage and acceleration lanes, and right-turn deceleration and acceleration lanes at major intersections.

The purpose of this study is to describe existing air quality in the project area and to assess the potential short-term and long-term air quality impacts that could result from construction and use of the proposed facilities. Measures to mitigate these impacts are suggested where possible and appropriate.

3.0 AMBIENT AIR QUALITY STANDARDS

Ambient concentrations of air pollution are regulated by both national and state ambient air quality standards (AAQS). National AAQS are specified in Section 40, Part 50 of the Code of Federal Regulations (CFR), while State of Hawaii AAQS are defined in Chapter 11-59 of the Hawaii Administrative Rules. Table 1 summarizes both the national and the state AAQS that are specified in the cited documents. As indicated in the table, national and state AAQS have been established for particulate matter, sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone and lead. The state has also set a standard for hydrogen sulfide. National AAQS are stated in terms of both primary and secondary standards for most of the regulated air pollutants. National primary standards are designed to protect the public health with an "adequate margin of safety". National secondary standards, on the other hand, define levels of air quality necessary to protect the public welfare from "any known or anticipated adverse effects

of a pollutant". Secondary public welfare impacts may include such effects as decreased visibility, diminished comfort levels, or other potential injury to the natural or man-made environment, e.g., soiling of materials, damage to vegetation or other economic damage. In contrast to the national AAQS, Hawaii State AAQS are given in terms of a single standard that is designed "to protect public health and welfare and to prevent the significant deterioration of air quality".

Each of the regulated air pollutants has the potential to create or exacerbate some form of adverse health effect or to produce environmental degradation when present in sufficiently high concentration for prolonged periods of time. The AAQS specify a maximum allowable concentration for a given air pollutant for one or more averaging times to prevent harmful effects. Averaging times vary from one hour to one year depending on the pollutant and type of exposure necessary to cause adverse effects. In the case of the short-term (i.e., 1- to 24-hour) AAQS, both national and state standards allow a specified number of exceedances each year.

The Hawaii AAQS are in some cases considerably more stringent than the comparable national AAQS. In particular, the Hawaii 1-hour AAQS for carbon monoxide is four times more stringent than the comparable national limit, and the state 1-hour limit for ozone is more than two times as stringent as the national 1-hour standard. The national 1-hour ozone standard will be phased out (pending court appeal) the next few years in favor of the new (and more stringent) 8-hour standard.

The Hawaii AAQS for sulfur dioxide were relaxed in 1986 to make the state standards essentially the same as the national limits.

In 1993, the state also revised its particulate standards to follow those set by the federal government. During 1997, the federal government again revised its standards for particulate, but the new standards have been challenged in federal court. To date, the Hawaii Department of Health has not updated the state particulate standards.

4.0 REGIONAL AND LOCAL CLIMATOLOGY

Regional and local climatology significantly affect the air quality of a given location. Wind, temperature, atmospheric turbulence, mixing height and rainfall all influence air quality. Although the climate of Hawaii is relatively moderate throughout most of the state, significant differences in these parameters may occur from one location to another. Most differences in regional and local climates within the state are caused by the mountainous topography.

Hawaii lies well within the belt of northeasterly trade winds generated by the semi-permanent Pacific high pressure cell to the north and east of the islands. These tradewinds are one of the outstanding features of Kauai's climate along with equable temperatures from day to day and season to season and the marked variation in rainfall from the wet to the dry season and from place to place.

The nearest long-term wind data available for the project area are collected at the Lihue Airport located about 4 miles to the east of the project area. These data are probably at least semi-representative of the project corridor. As indicated in Table 2, Lihue Airport has a mean annual wind speed of 12.3 mph and a

northeast annual prevailing wind direction [1]. Monthly wind speeds and directions are similar to the annual averages. Winds from the south are infrequent occurring only a few days during the year and mostly in winter in association with kona storms.

Air pollution emissions from motor vehicles, the formation of photochemical smog and smoke plume rise all depend in part on air temperature. Colder temperatures tend to result in higher emissions of contaminants from automobiles but lower concentrations of photochemical smog and ground-level concentrations of air pollution from stack sources. In Hawaii, the annual and daily variation of temperature depend to a large degree on elevation above sea level, distance inland and exposure to the trade winds. Average temperatures at locations near sea level generally are warmer than those at higher elevations. Areas exposed to the trade winds tend to have the least temperature variation, while inland and leeward areas often have the most. At nearby Lihue Airport, average annual daily minimum and maximum temperatures are 68°F and 81°F, respectively. The extreme minimum temperature on record is 50°F, and the extreme maximum is 90°F [1]. Temperatures along the project corridor are probably very similar.

Small scale, random motions in the atmosphere (turbulence) cause air pollutants to be dispersed as a function of distance or time from the point of emission. Turbulence is caused by both mechanical and thermal forces in the atmosphere. It is often measured and described in terms of Pasquill-Gifford stability class. Stability class 1 is the most turbulent and class 6 the least. Thus, air pollution dissipates the best during stability class 1 conditions and the worst when stability class 6 prevails. In the eastern Kauai area, stability classes 5 or 6 occasionally occur,

developing during clear, calm nighttime or early morning hours when temperature inversions form due to radiational cooling or to drainage flow from the mountainous interior of the island. Stability classes 1 through 4 occur during the daytime, depending mainly on the amount of cloud cover and incoming solar radiation and the onset and extent of the sea breeze.

Mixing height is defined as the height above the surface through which relatively vigorous vertical mixing occurs. Low mixing heights can result in high ground-level air pollution concentrations because contaminants emitted from or near the surface can become trapped within the mixing layer. In Hawaii, minimum mixing heights tend to be high because of mechanical mixing caused by the trade winds and because of the temperature moderating effect of the surrounding ocean. Low mixing heights may sometimes occur, however, at inland locations and even at times along coastal areas early in the morning following a clear, cool, windless night. Coastal areas also may experience low mixing levels during sea breeze conditions when cooler ocean air rushes in over warmer land. Mixing heights in Hawaii typically are above 3000 feet (1000 meters).

Rainfall can have a beneficial effect on the air quality of an area in that it helps to suppress fugitive dust emissions, and it also may "washout" gaseous contaminants that are water soluble. Rainfall in Hawaii is highly variable depending on elevation and on location with respect to the trade wind. The Lihue area has a moderately wet climate. Normal annual rainfall for Lihue Airport is about 43 inches [1]. Three-fourths of this total, on the average, falls during the wet season of October through April. Widespread rainstorms, which account for much of the

precipitation, occur most frequently during this period. January is the wettest month, averaging over six inches.

5.0 PRESENT AIR QUALITY

Present air quality in the project area is mostly affected by air pollutants from vehicular, industrial, natural and/or agricultural sources. Table 3 presents an air pollutant emission summary for the island of Kauai for calendar year 1993. The emission rates shown in the table pertain to manmade emissions only, i.e., emissions from natural sources are not included. As suggested in the table, much of the particulate emissions on Kauai originate from area sources, such as the mineral products industry and agriculture. Sulfur oxides are emitted almost exclusively by point sources, such as power plants and other fuel-burning industries. Nitrogen oxides emissions emanate predominantly from area sources (mostly motor vehicle traffic), but industrial point sources also contribute a significant share. The majority of carbon monoxide emissions occur from area sources (motor vehicle traffic), while hydrocarbons are emitted mainly from point sources.

The State Department of Health (DOH) operates a network of air quality monitoring stations at various locations around the state. Each station, however, typically does not monitor the full complement of air quality parameters. Very little data are available for the island of Kauai. The DOH monitoring station closest to the project corridor is located at Lihue. PM-10 (particulate matter less than or equal to 10 microns in diameter) is the only pollutant monitored at this location. The annual maximum 24-hour average PM-10 concentrations monitored at Lihue ranged from 31 to 41 $\mu\text{g}/\text{m}^3$ between 1994 and 1998 [2]. Average

annual concentrations for this period were approximately 20 µg/m³. All values reported were well within the state and national AAQS.

Although very little ambient air quality data are available to characterize existing conditions, due to the relatively small number of emission sources in the project area, it is likely that all ambient air quality standards are currently being met except perhaps for some areas near agricultural sources or near traffic congested locations. Present worst-case concentrations of carbon monoxide due to traffic-related emissions in the project area are estimated later in this study using computerized emissions and atmospheric dispersion models.

6.0 SHORT-TERM IMPACTS OF PROJECT

Almost any type of development may involve short-term direct and indirect impacts on air quality during project construction. For a project of this nature, there are two potential types of air pollution emissions that could directly result in short-term air quality impacts during construction: (1) fugitive dust from vehicle movement and soil excavation; and (2) exhaust emissions from on-site construction equipment. Indirectly, there also could be short-term impacts from slow-moving construction equipment traveling to and from the project site and from the disruption of normal traffic flow caused by roadway closures.

Fugitive dust emissions may arise from the grading and dirt-moving activities associated with land clearing and preparation work. The emission rate for fugitive dust emissions from construction activities is difficult to estimate accurately because of its elusive nature of emission and because the potential for its generation varies greatly depending upon the

type of soil at the construction site, the amount and type of dirt-disturbing activity taking place, the moisture content of exposed soil in work areas, and the wind speed. The EPA [3] has provided a rough estimate for uncontrolled fugitive dust emissions from construction activity of 1.2 tons per acre per month under conditions of "medium" activity, moderate soil silt content (30%), and precipitation/evaporation (P/E) index of 50. Uncontrolled fugitive dust emissions in the project area would likely be somewhere near this level. In any case, State of Hawaii Air Pollution Control Regulations [4] prohibit visible emissions of fugitive dust. Thus, an effective dust control plan for the project construction phase is essential.

Adequate control of fugitive dust in active construction areas can usually be accomplished by the establishment of a frequent watering program. In sensitive or dust-prone areas, limiting the area that can be disturbed at any given time and/or using wind screens may also be required. Wind erosion of inactive areas can be controlled by mulching or by the use of chemical soil stabilizers. Haul trucks tracking dirt onto paved streets from unpaved areas is oftentimes a significant source of dust in construction areas. Some means to alleviate this problem, such as tire washing or road cleaning, may be appropriate. Control regulations further stipulate that open-bodied trucks be covered at all times when in motion if they are transporting wind-erodible materials. Establishment of landscaping as early in the construction schedule as possible can also lower the potential for fugitive dust emissions.

On-site mobile and stationary construction equipment also will emit air pollutants from engine exhausts. The largest of this equipment is usually diesel-powered. Nitrogen oxides emissions from diesel engines can be relatively high compared to gasoline-

powered equipment, but the standard for nitrogen dioxide is set on an annual basis and is not likely to be violated by short-term construction equipment emissions. Carbon monoxide emissions from diesel engines, on the other hand, are low and should be relatively insignificant compared to vehicular emissions on nearby roadways.

Project construction activities at times will also likely obstruct the normal flow of traffic causing overall vehicular emissions in the project area to be increased. The only means to alleviate this problem will be to attempt to keep roadways open during peak traffic hours and to move heavy construction equipment to and from construction areas during periods of low traffic volume.

7.0 LONG-TERM IMPACTS OF PROJECT

After construction is completed, the proposed roadway improvements should result in a more efficient flow of motor vehicle traffic in the project vicinity and, in general, bring about favorable long-term impacts on ambient air quality at most locations in the immediate area. Potential microscale air quality impacts may occur, however, at locations where roadways have been widened or traffic signals have been installed. In most traffic-related air quality assessments, roadway intersections are one of the primary concerns because of traffic congestion and because of the increase in vehicular emissions associated with traffic queuing. To investigate potential air quality impacts near roadway intersections within the project area, microscale analyses were performed for selected locations using computerized emission and atmospheric dispersion models to estimate worst-case ambient carbon monoxide concentrations. Carbon monoxide was selected for the microscale analyses because it is both the most stable and the

most abundant of the pollutants generated by motor vehicles. Furthermore, carbon monoxide air pollution is generally considered to be a microscale problem that can be addressed locally to some extent, whereas other air pollutants most often are regional issues that cannot be addressed by a single roadway improvement project.

For this project, three scenarios were selected for the carbon monoxide modeling study: (1) year 1998 with present conditions, (2) year 2020 (the project planning year) without the project, and (3) year 2020 with the project. To begin the modeling study, critical receptor areas in the vicinity of the project were identified for analysis. Generally speaking, roadway intersections are the primary concern because of traffic congestion and because of the increase in vehicular emissions associated with traffic queuing. For this study, four key intersections identified by the project traffic engineers were selected for air quality analysis. These included the following:

- Kaunualii Highway at Nawiliwili Road
- Kaunualii Highway at Kalepa Street
- Kaunualii Highway at Puhi Road
- Kaunualii Highway at Maluhia Road

Intersection configurations and traffic conditions at each of these locations are detailed in the traffic impact report for the project [5].

The main objective of the modeling study was to estimate maximum 1-hour average carbon monoxide concentrations for each of the three scenarios studied. To evaluate the significance of the estimated concentrations, a comparison of the predicted values for

each scenario can be made. Comparison of the estimated values to the national and state AAQS was also used to provide another measure of significance.

Maximum carbon monoxide concentrations typically coincide with peak traffic periods. The traffic impact assessment report evaluated morning and afternoon peak traffic periods. These same periods were evaluated in the air quality impact assessment.

The EPA computer model MOBILE5A [6] was used to calculate vehicular carbon monoxide emissions for each year studied. One of the key inputs to MOBILE5A is vehicle mix. Unless very detailed information is available, national average values are typically assumed, which is what was used for the present study. Based on national average vehicle mix figures, the present vehicle mix in the project area was estimated to be 62.2% light-duty gasoline-powered automobiles, 27.2% light-duty gasoline-powered trucks and vans, 3.1% heavy-duty gasoline-powered vehicles, 0.3% light-duty diesel-powered vehicles, 6.5% heavy-duty diesel-powered trucks and buses, and 0.7% motorcycles. For the future scenarios studied, the estimated national average vehicle mix percentages were substantially the same except that light-duty gasoline-powered automobiles decreased by about 5% while light-duty gasoline-powered trucks and vans increased by about the same amount.

Other key inputs to the MOBILE5A emission model are the cold/hot start fractions. Motor vehicles operating in a cold- or hot-start mode emit excess air pollution. Typically, motor vehicles reach stabilized operating temperatures after about 4 miles of driving. For traffic operating on surface roadways within the project area, it was assumed that about 21 percent of all vehicles would be operating in the cold-start mode and that about 27 percent would

be operating in the hot-start mode. These are typical default (national average) values.

Ambient temperatures of 59 and 68 degrees F were used for morning and afternoon peak-hour emission computations, respectively. These are conservative assumptions since morning/afternoon ambient temperatures will generally be warmer than this, and emission estimates given by MOBILE5A are inversely proportional to the ambient temperature.

After computing vehicular carbon monoxide emissions through the use of MOBILE5A, these data were then input to an atmospheric dispersion model. EPA air quality modeling guidelines [7] currently recommend that the computer model CAL3QHC [8] be used to assess carbon monoxide concentrations at roadway intersections, or in areas where its use has previously been established, CALINE4 [9] may be used. Until about two years ago, CALINE4 was used extensively in Hawaii to assess air quality impacts at roadway intersections. In December 1997, the California Department of Transportation recommended that the intersection mode of CALINE4 no longer be used because it was thought the model has become outdated. Studies have shown that CALINE4 may tend to over-predict maximum concentrations in some situations. Because of this, CAL3QHC was used for the subject analysis.

CAL3QHC was developed for the U.S. EPA to simulate vehicular movement, vehicle queuing and atmospheric dispersion of vehicular emissions near roadway intersections. It is designed to predict 1-hour average pollutant concentrations near roadway intersections based on input traffic and emission data, roadway/receptor geometry and meteorological conditions.

Although CAL3QHC is intended primarily for assessing atmospheric dispersion near signalized roadway intersections, it can also be used to evaluate unsignalized intersections. This is accomplished by manually estimating queue lengths and then applying the same techniques used by the model for signalized intersections. Currently, three of the four study intersections are signalized, and all four intersections were assumed to be signalized for the future with-project scenario.

Input peak-hour traffic data were obtained from the traffic study cited previously. This included vehicle approach volumes, saturation capacity estimates, intersection laneage and signal timings. All emission factors that were input to CAL3QHC for free-flow traffic on area roadways were obtained from MOBILE5A based on assumed free-flow vehicle speeds of 25 to 45 mph, depending on location.

Model roadways were set up to reflect roadway geometry, physical dimensions and operating characteristics. Sidewalks currently exist only near some of the roadway intersections studied. Concentrations predicted by air quality models generally are not considered valid within the roadway mixing zone. The roadway mixing zone is usually taken to include 3 meters on either side of the traveled portion of the roadway and the turbulent area within 10 meters of a cross street. Model receptor sites were thus located at the edges of the mixing zones near all intersections that were studied (whether or not sidewalks currently exist). All receptor heights were placed at 1.8 meters above ground to simulate levels within the normal human breathing zone.

Input meteorological conditions for this study were defined to provide "worst-case" results. One of the key meteorological inputs is atmospheric stability category. For these analyses, atmospheric stability category 6 was assumed for the morning case, and stability category 4 was assumed for the afternoon case. These are the most conservative stability categories that are generally used for estimating worst-case pollutant dispersion within suburban or rural areas for these periods. A surface roughness length of 100 cm and a mixing height of 1000 meters were used in all cases. Worst-case wind conditions were defined as a wind speed of 1 meter per second with a wind direction resulting in the highest predicted concentration. Concentration estimates were calculated at wind directions of every 5 degrees.

Existing background concentrations of carbon monoxide in the project vicinity are believed to be at relatively low levels. Thus, background contributions of carbon monoxide from sources or roadways not directly considered in the analysis were accounted for by adding a background concentration of 0.5 ppm to all predicted concentrations for 1998. Although increased traffic is expected to occur within the project area within the next several years with or without the project, background carbon monoxide concentrations may not change significantly since individual emissions from motor vehicles are forecast to decrease with time. Hence, a background value of 0.5 ppm was assumed to persist for the future scenarios studied.

Predicted Worst-Case 1-Hour Concentrations

Table 4 summarizes the final results of the modeling study in the form of the estimated worst-case 1-hour morning and afternoon ambient carbon monoxide concentrations. These results can be compared directly to the state and the national AAQS. Estimated

worst-case carbon monoxide concentrations are presented in the table for three scenarios: year 1998 with existing traffic, year 2020 without the project and year 2020 with the project. The locations of these estimated worst-case 1-hour concentrations all occurred at or very near the indicated intersections.

As indicated in the table, the highest estimated 1-hour concentration within the project vicinity for the present (1998) case was 11.7 mg/m³. This was projected to occur during the morning peak-traffic hour near the intersection of Kaunualii Highway and Puhi Road. The next highest value, 11.0 mg/m³, was estimated to occur during the morning peak-traffic hour at the intersection of Kaunualii Highway and Kalepa Street. Concentrations at other locations and times studied ranged between about 3 and 10 mg/m³. All predicted worst-case 1-hour concentrations for the 1998 scenario were well within the national AQOS of 40 mg/m³, but concentrations at three of the four intersections studied either equaled or slightly exceeded the more stringent state standard (which is set at 10 mg/m³). It should be noted that because the state 1-hour carbon monoxide standard is set at such a stringent level, it is likely that it is currently exceeded at many locations in the state that have even moderate traffic volumes.

In the year 2020 without the proposed project, a worst-case 1-hour concentration of 13.5 mg/m³ was predicted to occur during the morning peak-traffic hour near the intersection of Kaunualii Highway and Puhi Road. The next highest value for the project area was 12.3 mg/m³ and occurred during the morning near the intersection of Kaunualii Highway and Nawiliwili Road. Peak-hour worst-case values at the other locations and times studied for the 2020 without-project scenario ranged between about 7 and 12 mg/m³. Similar to the existing case, predicted worst-case 1-hour concentrations for the 2020 without-project scenario were within

the national AQOS, but concentrations were estimated to exceed the state AQOS at all four of the locations that were studied. The predicted concentrations at all locations were higher compared to the 1998 scenario, particularly at the intersection of Kaunualii Highway and Maluhia Road. Very long traffic queues would occur at this location because of over capacity conditions.

Predicted 1-hour worst-case concentrations for the 2020 without-project scenario ranged from 4.7 mg/m³ during the afternoon at the Kaunualii Highway/Maluhia Road intersection to 12.6 mg/m³ during the morning at the Kaunualii Highway/Puhi Road intersection. Compared to the 2020 without project case, predicted worst-case concentrations for 2020 with the project were either lower or about the same except at the intersection of Kaunualii Highway and Kalepa Street where a slight increase was predicted during the afternoon. Substantial improvement was predicted for the area near the intersection of Kaunualii Highway and Maluhia Road. All of the locations studied were predicted to meet the national AQOS, but locations near three of the four intersections modeled were predicted to potentially exceed the more stringent state standard.

Predicted Worst-Case 8-Hour Concentrations

Worst-case 8-hour carbon monoxide concentrations were estimated by multiplying the worst-case 1-hour values by a persistence factor of 0.5. This accounts for two factors: (1) traffic volumes averaged over eight hours are lower than peak 1-hour values, and (2) meteorological conditions are more variable (and hence more favorable for dispersion) over an 8-hour period than they are for a single hour. Based on monitoring data, 1-hour to 8-hour persistence factors for most locations generally vary from 0.4 to 0.8 with 0.6 being the most typical. One recent study based on modeling [10] concluded that 1-hour to 8-hour persistence factors

could typically be expected to range from 0.4 to 0.5. EPA guidelines (11) recommend using a value of 0.7 unless a locally derived persistence factor is available. Although there is no data for Kauai, recent monitoring data for locations on Oahu reported by the Department of Health (2) suggest that this factor may range between about 0.2 and 0.6 depending on location and traffic variability. Considering the location of the project and the traffic pattern for the area, a 1-hour to 8-hour persistence factor of 0.5 will likely yield reasonable estimates of worst-case 8-hour concentrations.

The resulting estimated worst-case 8-hour concentrations are indicated in Table 5. For the 1998 scenario, the estimated worst-case 8-hour carbon monoxide concentrations for the locations studied ranged from 2.5 to 5.8 mg/m³. The estimated worst-case concentrations either equaled or slightly exceeded the state standard of 5 mg/m³ at three of the four locations studied but remained well within the national limit of 10 mg/m³.

For the year 2020 without-project scenario, the estimated worst-case concentrations ranged between 5.8 and 6.8 mg/m³. All locations were predicted to experience increased concentrations compared to the existing case, and a substantial increase was indicated at the intersection of Kaunualii Highway at Maluhia Road. The worst-case concentration estimates for all locations studied met the national 8-hour standard but exceeded the state 8-hour standard.

For the 2020 with-project scenario, the predicted worst-case concentrations ranged from 3.4 to 6.3 mg/m³. Worst-case concentrations at all locations studied were predicted to decrease compared to the without-project scenario. Similar to the without-

project scenario, all predicted 8-hour concentrations for this scenario were within the national AAQS, but three of the four locations studied exceeded the more stringent state AAQS.

Again, it should be noted that, because the state 8-hour carbon monoxide standard is set at such a stringent level, it is likely that it is currently exceeded at many locations in the state that have even moderate traffic volumes.

Conservativeness of Estimates

The results of this study reflect several assumptions that were made concerning both traffic movement and worst-case meteorological conditions. One such assumption concerning worst-case meteorological conditions is that a wind speed of 1 meter per second with a steady direction for 1 hour will occur. A steady wind of 1 meter per second blowing from a single direction for an hour is extremely unlikely and may occur only once a year or less. With wind speeds of 2 meters per second, for example, computed carbon monoxide concentrations would be only about half the values given above. The 8-hour estimates are also conservative in that it is unlikely that anyone would occupy the assumed receptor sites (within 3 m of the roadways) for a period of 8 hours.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Air quality in the project area is currently relatively good except possibly for occasional dust and smoke from nearby agricultural activities. Based on air quality modeling results, the state standards for carbon monoxide may also occasionally be

exceeded in small hot-spot areas near traffic-congested intersections along Kaunualii Highway at the present time.

The major potential short-term impact of the project on air quality will occur from the emission of fugitive dust during construction. Uncontrolled fugitive dust emissions from construction activities are estimated to amount to about 1.2 tons per acre per month or more, depending on rainfall. To control dust, active work areas and any temporary unpaved work roads should be watered at least twice daily on days without rainfall. Use of wind screens in sensitive areas and/or limiting the area that is disturbed at any given time will also help to contain fugitive dust emissions. Wind erosion of inactive areas of the project that have been disturbed could be controlled by mulching or chemical stabilization. Dirt-hauling trucks should be covered when traveling on roadways to prevent windage. A routine road cleaning and/or tire washing program will also help to reduce fugitive dust emissions that may occur as a result of trucks tracking dirt onto paved roadways in the project area. Establishment of landscaping early in the construction schedule will also help to control dust.

During construction phases, emissions from engine exhausts (primarily consisting of carbon monoxide and nitrogen oxides) will also occur from on-site construction equipment, from vehicles used by construction workers and from trucks traveling to and from the project. Disruption of traffic due to road closures may also increase tailpipe emissions. Increased vehicular emissions due to the disruption of traffic by construction activities should be mitigated by moving equipment and personnel to the site during off-peak traffic hours and by minimizing road closures during peak-traffic periods.

Assuming the proposed project is built, carbon monoxide concentrations near roadway intersections in the project area will likely decrease and air quality will improve compared to the without-project case, particularly at the intersection of Kaunualii Highway and Maluhia Road. However, worst-case carbon monoxide concentrations may continue to exceed the state standards with or without the project. All locations should meet the less stringent national standards with or without the project.

Due to the low levels at which the state carbon monoxide standards are set, it may not be possible to achieve continuous compliance with the standards, at least within some small hot-spot areas near high-volume intersections in the project area. Because the state standards are set at such stringent levels, it is likely that the standards are currently exceeded at many locations in the state that have even moderate traffic volumes.

Options available to mitigate long-term, traffic-related air pollution are generally to further improve roadways, to reduce individual vehicular emissions or to reduce traffic volumes. Further improvement of roadways may not always provide reductions in maximum carbon monoxide concentrations. In some cases, roadway improvements may actually result in higher maximum concentrations when, for example, traffic lanes are added and more traffic becomes concentrated near an intersection. Reduction of emissions from individual vehicles would have to be achieved through the promulgation of local, state or federal air pollution control regulations. Currently, the state standards for tailpipe emissions are not commensurate with the stringent state air quality standards. Also, Hawaii currently does not require annual

inspections of motor vehicle air pollution control equipment, which would likely provide reduced emissions and improved air quality. Reducing traffic volumes could conceivably be achieved by promoting bus service and carpooling and by staggering local school and business hours to begin and end during off-peak traffic periods.

Another potential mitigation measure might be to provide added buffer zones between new walkways and roadways where possible, although technically, the public would have to somehow be excluded from the buffer zones. The predicted worst-case concentrations in this report are based on a separation distance of 3 m (10 ft) between walkways and roadways. Doubling this distance to about 6 m (20 ft) would reduce maximum concentrations by about 10 to 15 percent.

Given that the predicted worst-case carbon monoxide concentrations are well within the national ambient air quality standards, that the more stringent state standards are probably currently exceeded near many roadway intersections in the state where traffic volumes are moderate to high, and that the proposed project would result in a slight to moderate improvement in carbon monoxide levels, implementing air quality mitigation measures for long-term traffic-related impacts is probably unnecessary and unwarranted.

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Figure 1 - PROJECT LOCATION MAP

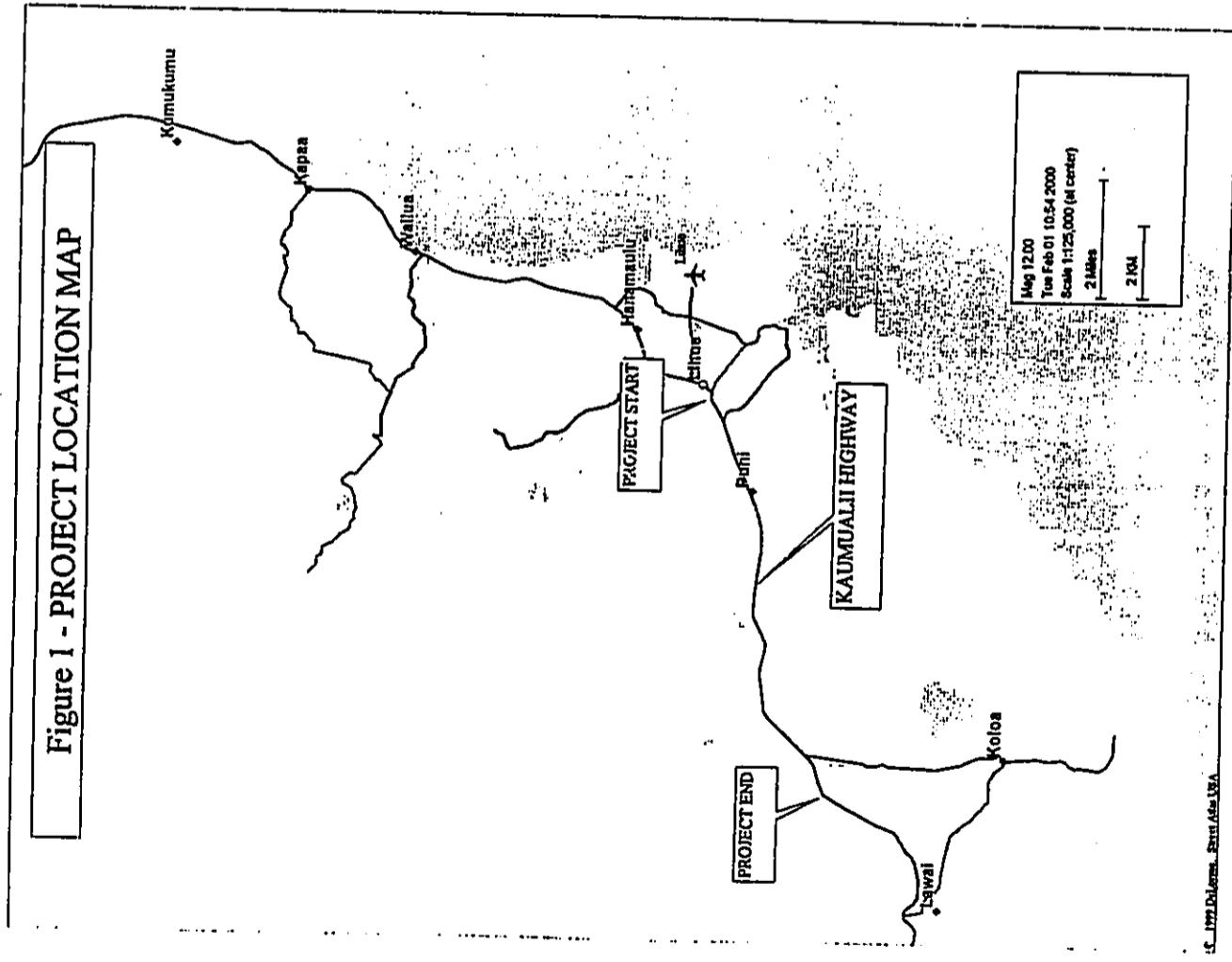


Table 1

SUMMARY OF STATE OF HAWAII AND NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Units	Averaging Time	Maximum Allowable Concentration		
			National Primary	National Secondary	State of Hawaii
Particulate Matter (<10 microns)	µg/m³	Annual 24 Hours	50 ^a	50 ^a	50
			150 ^b	150 ^b	150 ^c
Particulate Matter (<2.5 microns)	µg/m³	Annual 24 Hours	15 ^a	15 ^a	-
			65 ^d	65 ^d	-
Sulfur Dioxide	µg/m³	Annual 24 Hours 3 Hours	80	-	80
			365 ^e	-	365 ^e
			-	1300 ^f	1300 ^f
Nitrogen Dioxide	µg/m³	Annual	100	100	70
Carbon Monoxide	ppm	8 Hours	10 ^g	-	5 ^g
		1 Hour	40 ^g	-	10 ^g
Ozone	µg/m³	8 Hours	157 ^h	157 ^h	-
		1 Hour	235 ⁱ	235 ⁱ	100 ^g
Lead	µg/m³	Calendar Quarter	1.5	1.5	1.5
Hydrogen Sulfide	µg/m³	1 Hour	-	-	35 ^j

^a Three-year average of annual arithmetic mean.
^b 99th percentile value averaged over three years.
^c Not to be exceeded more than once per year.
^d 98th percentile value averaged over three years.
^e Three-year average of fourth-highest daily 8-hour maximum.
^f Standard is attained when the expected number of exceedances is less than or equal to 1.
^g Note: Standards for particulate matter (<2.5 microns) and for 8-hour ozone are subject to court appeal.

Table 2
 MEAN WIND SPEED AND PREVAILING DIRECTION
 FOR LIHUE AIRPORT, KAUAI

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Speed (mph)	11.0	11.5	12.6	13.2	12.6	13.0	13.6	13.0	11.6	11.4	12.2	11.7	12.3
Direction	ENE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

Source: "Local Climatological Data, Annual Summary With Comparative Data, Lihue, Hawaii, 1992", U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Environmental Data Service, National Climatic Center, Asheville, NC.

Table 3
 AIR POLLUTION EMISSIONS INVENTORY FOR
 ISLAND OF KAUAI, 1993

Air Pollutant	Point Sources (tons/year)	Area Sources (tons/year)	Total (tons/year)
Particulate	614	4,817	5,431
Sulfur Oxides	703	nil	703
Nitrogen Oxides	4,072	7,054	11,126
Carbon Monoxide	2,315	11,974	14,289
Hydrocarbons	859	224	1,083

Source: Final Report, "Review, Revise and Update of the Hawaii Emissions Inventory Systems for the State of Hawaii", prepared for Hawaii Department of Health by J.L. Shoemaker & Associates, Inc., 1996

Table 4

ESTIMATED WORST-CASE 1-HOUR CARBON MONOXIDE CONCENTRATIONS
AT SELECTED INTERSECTIONS ALONG KAUNALII HIGHWAY
(milligrams per cubic meter)

Roadway Intersection	Year/Scenario					
	1998/Present		2020/Without Project		2020/With Project	
	AM	PM	AM	PM	AM	PM
Kaunualii Highway at Nawiliwili Road	10.0	7.0	12.3	8.3	12.0	8.4
Kaunualii Highway at Kalepa Street	11.0	6.9	11.6	6.7	10.7	8.0
Kaunualii Highway at Puhi Road	11.7	6.9	13.5	7.0	12.6	7.2
Kaunualii Highway at Maluhia Road	5.0	3.0	11.7	7.7	6.8	4.7

Hawaii State AAQS: 10
National AAQS: 40

Table 5

ESTIMATED WORST-CASE 8-HOUR CARBON MONOXIDE CONCENTRATIONS
AT SELECTED INTERSECTIONS ALONG KAUNALII HIGHWAY
(milligrams per cubic meter)

Roadway Intersection	Year/Scenario		
	1998/Present	2020/Without Project	2020/With Project
Kaunualii Highway at Nawiliwili Road	5.0	6.2	6.0
Kaunualii Highway at Kalepa Street	5.5	5.8	5.4
Kaunualii Highway at Puhi Road	5.8	6.8	6.3
Kaunualii Highway at Maluhia Road	2.5	5.8	3.4

Hawaii State AAQS: 5
National AAQS: 10

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

APPENDIX E

Noise Analysis Report



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ACOUSTICAL CONSULTANTS

Project No. 99-66

ENVIRONMENTAL NOISE ASSESSMENT STUDY
KAUMUALII HIGHWAY WIDENING
KAUAI, HAWAII

February, 2000

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1.0 SUMMARY

- 1.1 A traffic noise assessment for two noise sensitive locations along Kaunualii Highway was conducted. Existing noise measurements were taken and future traffic noise levels were predicted based on traffic data provided by Austin, Tsutsumi & Associates, Inc.
- 1.2 No existing noise sensitive areas in the project area are expected to be impacted by future traffic noise levels. In fact, decreases in traffic noise levels are expected due to the physical realignment of the existing Kaunualii Highway.
- 1.3 The dominant noise sources during project construction will probably be earth moving equipment, such as bulldozers and diesel powered trucks. The noise from construction activities could impact nearby residences. Noise from construction activities should be short term and must comply with State Department of Health noise regulations.

2.0 PROJECT DESCRIPTION

The proposed project, shown in Figure 1, is located on the island of Kauai and involves the widening of Kaunualii Highway from a two lane to a four lane roadway. Re-alignments of the Kaunualii Highway are also included in the project, which involves improvements along 6.8 miles of existing roadway from Lihue to Mahulia Road. Noise sensitive land uses near the project which may be impacted by the project include the residential properties along Welau Street and Anonui Street.

3.0 NOISE STANDARDS AND GUIDELINES

Various local and federal agencies have established guidelines and standards for assessing environmental noise impacts and set noise limits as a function of land use. A brief description of common acoustic terminology used in these guidelines and standards is presented in Appendix A.

3.1 U.S. Federal Highway Administration (FHWA)

The current FHWA procedures for highway traffic noise analysis and abatement are contained in 23 CFR 772 [Reference 1]. These procedures specify the requirements that State highway agencies must meet when using Federal-aid funds for highway projects. FHWA noise abatement criteria, as a function of land use activity categories, are given in these procedures. The maximum hourly equivalent sound levels, L_{eq} , for traffic noise exposure for corresponding land use categories are listed in Table 1.

3.2 U.S. Environmental Protection Agency (EPA)

The U.S. EPA has identified a range of yearly day-night equivalent sound levels, L_{dn} , sufficient to protect public health and welfare from the effects of environmental noise [Reference 2]. The EPA has established a goal to reduce exterior environmental noise to an L_{dn} not exceeding 65 dBA and a future goal to further reduce exterior environmental noise to an L_{dn} not exceeding 55 dBA. Additionally, the EPA states that these goals are not intended as regulations as it has no authority to regulate noise levels, but rather they are intended to be viewed as levels below which the general population will not be at risk from any of the identified effects of noise.

3.3 Hawaii Department of Transportation (HDOT)

The HDOT has adopted FHWA's design goals for traffic noise exposure in its noise analysis and abatement policy [Reference 3]. According to the policy, a traffic noise impact occurs when the predicted traffic noise levels "approach" or exceed FHWA's design goals or when the predicted traffic noise levels "substantially exceed the existing noise levels." The policy also states that "approach" means at least 1 dB less than FHWA's design goals and "substantially exceed the existing noise levels" means an increase of at least 15 dB.

3.4 State Department of Health (DOH)

The State Department of Health defines a heavy vehicle as a vehicle which has a manufacturer's gross vehicular weight rating of ten thousand pounds or greater. Such vehicles shall not be operated on any trafficway in such a manner that it emits noise in excess of the limits specified in Reference 4. If these limits will be exceeded a permit from the DOH director is required.

3.5 U.S. Department of Housing and Urban Development (HUD)

HUD's environmental noise criteria and standards in 24 CFR 51 [Reference 5] were established for determining housing project site acceptability. These standards are based on day-night equivalent sound levels, L_{dn} , and are not limited to traffic noise exposure. However, for project sites in the vicinity of highways, the L_{dn} may be estimated to be equal to the design hour L_{eq} , provided "heavy trucks (vehicles with three or more axles) do not exceed 10 percent of the total traffic flow in vehicles per 24 hours and the traffic flow between 10:00 p.m. and 7:00 a.m. does not exceed 15 percent of the average daily traffic flow in vehicles per 24 hours." For these same conditions, L_{dn} may also be estimated as 3 dB less than the design hour L_{eq} .

HUD site acceptability criteria rank sites as Acceptable, Normally Unacceptable, or Unacceptable. "Acceptable" sites are those where exterior noise levels do not exceed an L_{50} of 65 dBA. Proposed housing projects on "Acceptable" sites do not require additional noise attenuation other than that provided by customary building techniques. "Normally Unacceptable" sites are those where the L_{50} is above 65 dBA, but does not exceed 75 dBA. Housing on "Normally Unacceptable" sites requires some form of noise abatement, either at the property line or in the building construction, to ensure the interior noise levels are acceptable. "Unacceptable" sites are those where the L_{50} is 75 dBA or higher. The term "Unacceptable" does not necessarily mean that housing cannot be built on those sites. It means that more sophisticated sound attenuation will likely be needed.

4.0 EXISTING ACOUSTICAL ENVIRONMENT

Existing peak hour noise levels were measured at two locations in the vicinity of the project site on Tuesday, February 1, 2000 and Wednesday, February 2, 2000. The measurements were obtained using Larson-Davis Laboratories, Models 800B and 700, sound level meters. The weather during the measurements was partly sunny skies with temperatures in the low 80's and trade winds blowing 5 to 10 miles per hour. The results of the measurements are presented in Table 2 and the measurement locations are shown in Figure 2. The dominant noise source at these locations was traffic.

In addition to noise levels, vehicle counts and classification, i.e., number of automobiles, vehicles with two axles and six wheels (medium trucks) and vehicles with three or more axles (heavy trucks) were made during the measurements. This information was then used in conjunction with the FHWA's Traffic Noise Prediction Model (TNM) to calculate existing and future noise levels.

5.0 POTENTIAL NOISE IMPACT DUE TO THE PROJECT AND NOISE MITIGATION

5.1 Project Generated Traffic Noise

FHWA's Traffic Noise Prediction Model, TNM Version 1.0b, and the traffic data provided by others [Reference 6] were used to calculate the existing and future year 2020 "no-build" and "build" traffic noise levels during morning and afternoon peak-traffic hours. The noise levels were calculated at the following noise sensitive locations.

- 1 - 225 feet from the proposed Kaunualii Highway alignment, which is the approximate location of the closest residential homes on Welau Street.

- 2 - 82 feet from the proposed Kaunualii Highway alignment on the east side of Anonui Street, which is the nearest buildable lot to Kaunualii Highway.

The calculated existing and future peak hour noise levels are presented in table 3. From these results, future AM and PM peak hour traffic noise level changes were determined and are presented in Table 4.

It is important to note that the difference between the Future No-Build and the Build traffic noise levels are due to the physical differences between the existing roadways and the proposed widened roadways, and not due to changes in traffic volumes.

As can be seen in Table 3, the project is not anticipated to result in increased traffic noise levels at the noise sensitive assessment locations. In addition, the resulting traffic noise levels with the project will be below the FHWA's traffic noise abatement criteria (Table 1).

5.2 Project Construction Noise

Development of project areas will involve excavation and grading. The various construction phases of the project may generate significant amounts of noise, which may impact residences and other noise sensitive areas. The actual noise levels produced will be a function of the methods employed during each stage of the construction process. Typical ranges of construction equipment noise are shown in Figure 5. Earth moving equipment, e.g., bulldozers and diesel-powered trucks, will probably be the loudest equipment used during construction.

In cases where construction noise exceeds, or is expected to exceed the State DOH's "maximum permissible" property line noise levels [Reference 7], a permit must be obtained from the DOH to allow the operation of vehicles, construction equipment, power tools, etc., which emit noise levels in excess of the "maximum permissible levels." Specific permit restrictions for construction activities are:

"No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels... before 7:00 a.m. and after 6:00 p.m. of the same day, Monday through Friday."

"No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels... before 9:00 a.m. and after 6:00 p.m. on Saturday."

"No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels on Sundays and on holidays."

In addition, construction equipment and on-site vehicles or devices whose operations involve the exhausting of gas or air, excluding pile hammers and pneumatic hand tools weighing less than 15 pounds, must be equipped with mufflers, and construction vehicles using trafficways must satisfy the DOH's vehicular noise requirements [Reference 7].

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6. *Kaunialii Highway Widening Lihue to Mahukia Road Project No. 50DE-02-95 Traffic Assessment Report Kauai, Hawaii*. Austin, Tsutsumi Associates Inc, July 1998
7. Chapter 46, *Community Noise Control*, Department of Health, State of Hawaii, Administrative Rules, Title 11, September 23, 1996.

TABLE 1
FHWA NOISE ABATEMENT CRITERIA

Activity Category	L_{eq}^1 (in dBA)	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 above.
D	--	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

• L_{eq}^1 is the hourly equivalent sound level that represents a constant level of sound having the same total acoustic energy as that contained in the actual time-varying sound measured during the one-hour period.

TABLE 2
NOISE MEASUREMENT RESULTS

Measurement Location*	Start Time/ Date	Measured L_{eq}^{**} (in dBA)	Duration of Measurement
A	7:00 am 2/2/00	69.4	60 min
	4:00 pm 2/1/00	69.5	60 min
B	7:00 am 2/2/00	69.3	60 min
	4:00 pm 2/1/00	68.4	60 min

• Location A was approximately 25 feet from the existing Kaunuaui Highway right-of-way and approximately 150 feet to the west of Nani Street. Location B was approximately 25 feet from the existing Kaunuaui Highway right-of-way and approximately 100 feet east of Anonui Street.

** L_{eq} is the equivalent sound level that represents a constant level of sound having the same total acoustic energy as that contained in the actual time-varying sound measured over a specific time period.

TABLE 3

EXISTING AND PROJECTED FUTURE PEAK HOUR
TRAFFIC NOISE LEVELS (L_{eq} in dBA)

	Location 1*		Location 2*	
	AM	PM	AM	PM
Existing Level (Calculated)	60.9	58.1	67.0	64.9
Future Without Project (2020)	62.8	60.9	68.8	68.2
Future With Project (2020)	61.9	59.5	65.4	65.2

* Location 1 and 2 are shown on Figure 2 and described in Section 5.1.

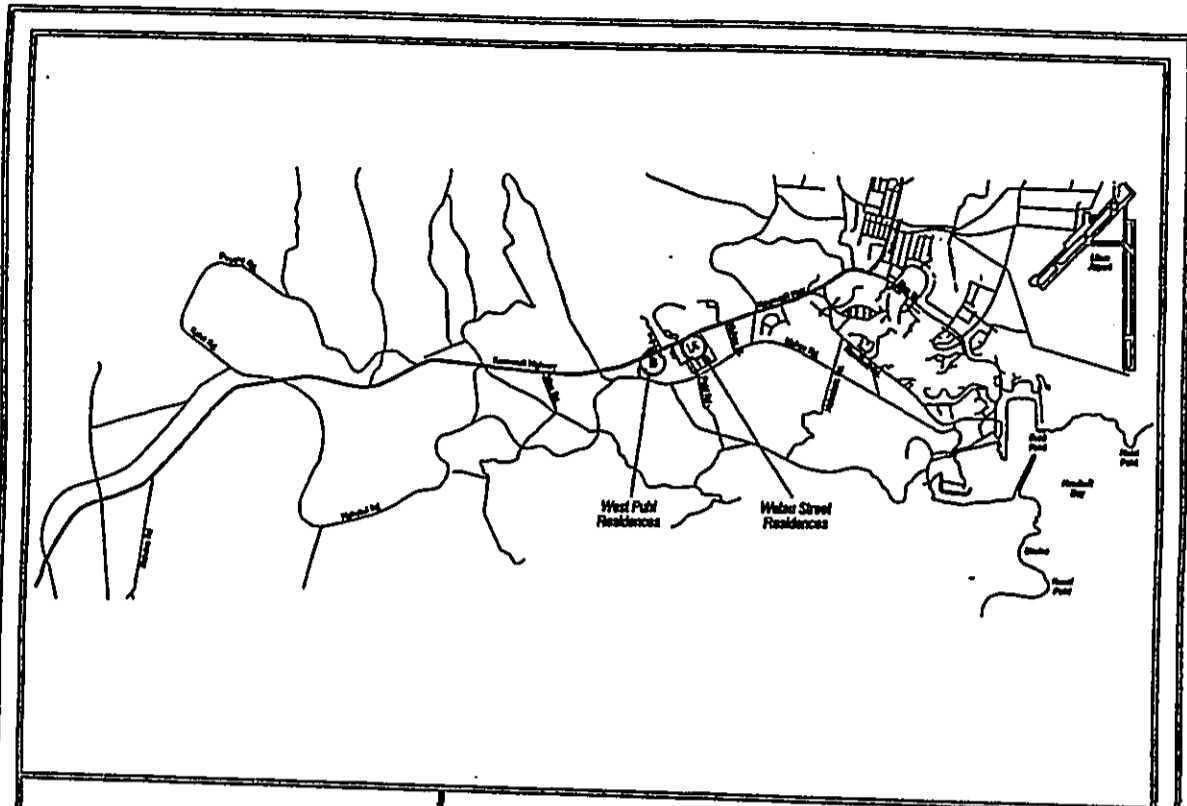
TABLE 4

PROJECTED FUTURE PEAK HOUR TRAFFIC NOISE
LEVEL INCREASES (L_{eq} in dBA)

	Location 1*		Location 2*	
	AM	PM	AM	PM
Future Increase Without Project (2020)	1.9	2.8	1.8	3.3
Future Increase With Project (2020)	1.0	1.4	-1.6	-0.3
Increase Due to the Project (2020)	-0.9	-1.4	-3.4	-3.6

* Location 1 and 2 are shown on Figure 2 and described in Section 5.1.

2.3 1.3 1.1 1.0 0.9 0.8 0.7 0.6 0.5 0.4 0.3 0.2 0.1 0.0




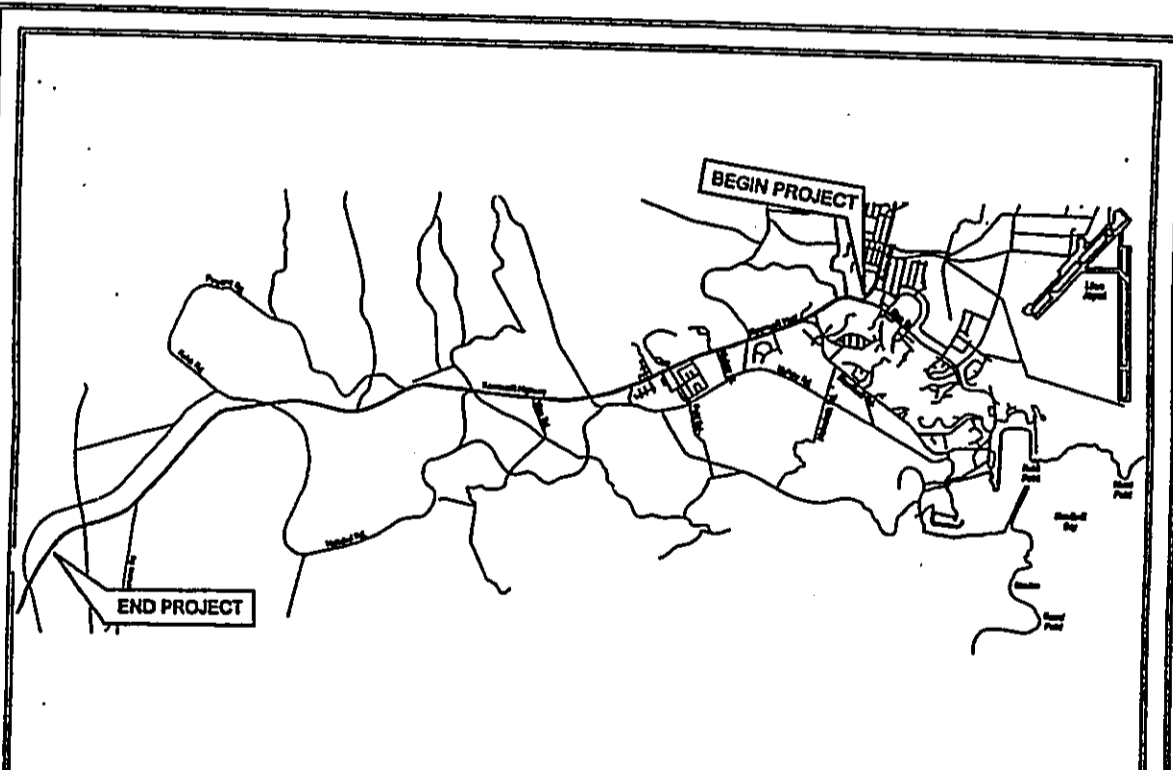

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FIGURE 2 - NOISE MEASUREMENT AND NOISE ASSESSMENT LOCATIONS





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FIGURE 1 - PROJECT LOCATION AND STUDY AREA

Appendix A
Acoustical Terminology (Continued)

Statistical Sound Levels

The sound levels of long-term noise producing activities, such as traffic movement, aircraft operations, etc., can vary considerably with time. In order to obtain a single number rating of such a noise source, a statistically-based method of expressing sound or noise levels developed. It is known as the Exceedence Level, L_x . The Exceedence Level, L_x , represents the sound level which is exceeded for $x\%$ of the measurement time period. For example, $L_{10} = 60$ dBA indicates that for the duration of the measurement period, the sound level exceeded 60 dBA 10% of the time. Commonly used Exceedence Levels include L_1 , L_{10} , L_{50} , and L_{90} , which are widely used to assess community and environmental noise. Figure A-2 illustrates the relationship between selected statistical noise levels.

Equivalent Sound Level

The Equivalent Sound Level, L_{eq} , represents a constant level of sound having the same total acoustic energy as that contained in the actual time-varying sound being measured over a specific time period. L_{eq} is commonly used to describe community noise, traffic noise, and hearing damage potential. It has units of dBA and is illustrated in Figure A-2.

Day-Night Equivalent Sound Level

The Day-Night Equivalent Sound Level, L_{dn} , is the Equivalent Sound Level, L_{eq} , measured over a 24-hour period. However, a 10 dB penalty is added to the noise levels recorded between 10 pm and 7 am to account for people's higher sensitivity to noise at night when the background noise level is typically lower. The L_{dn} is a commonly used noise descriptor in assessing land use compatibility, and is widely used by federal and local agencies and standards organizations. Qualitative descriptions, as well as local examples of L_{dn} , are shown in Figure A-3.

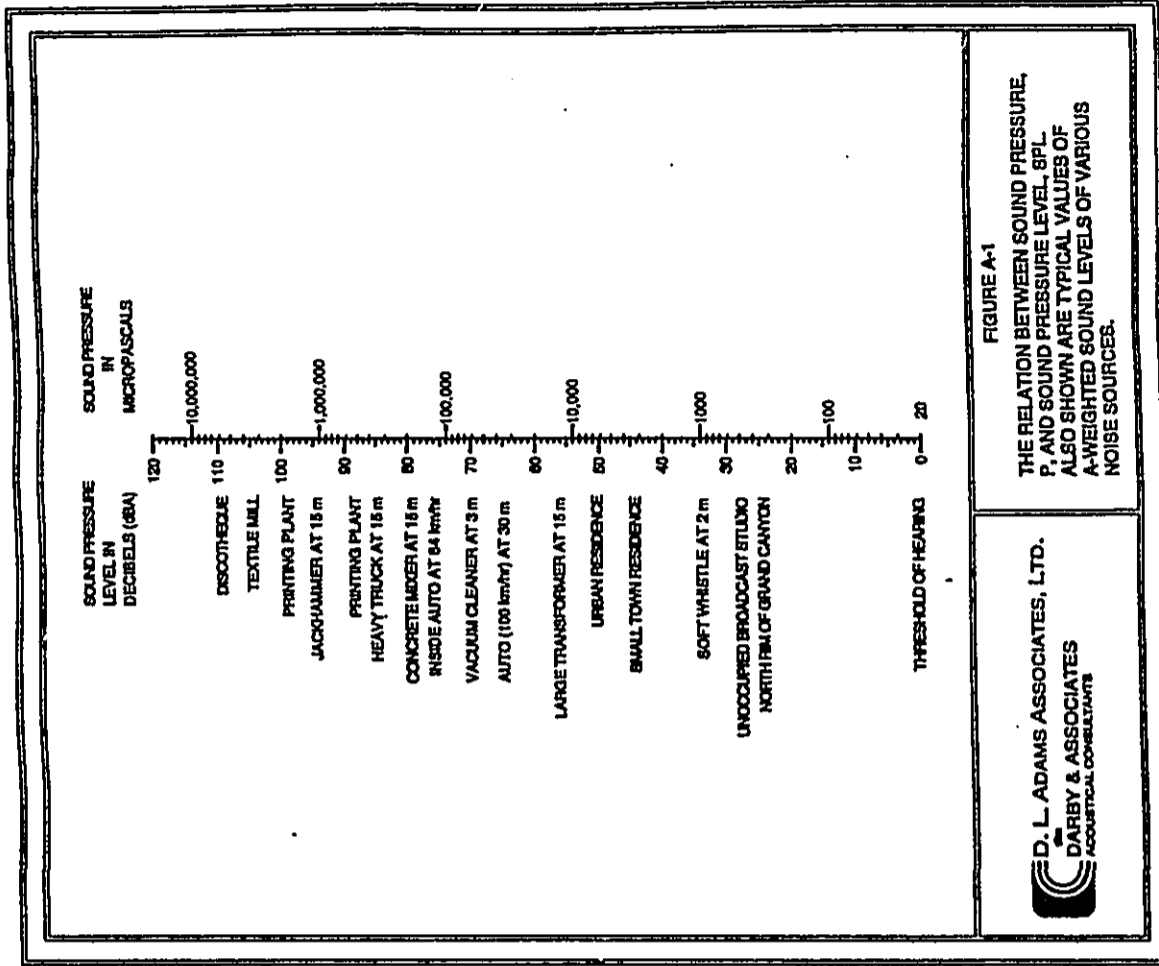
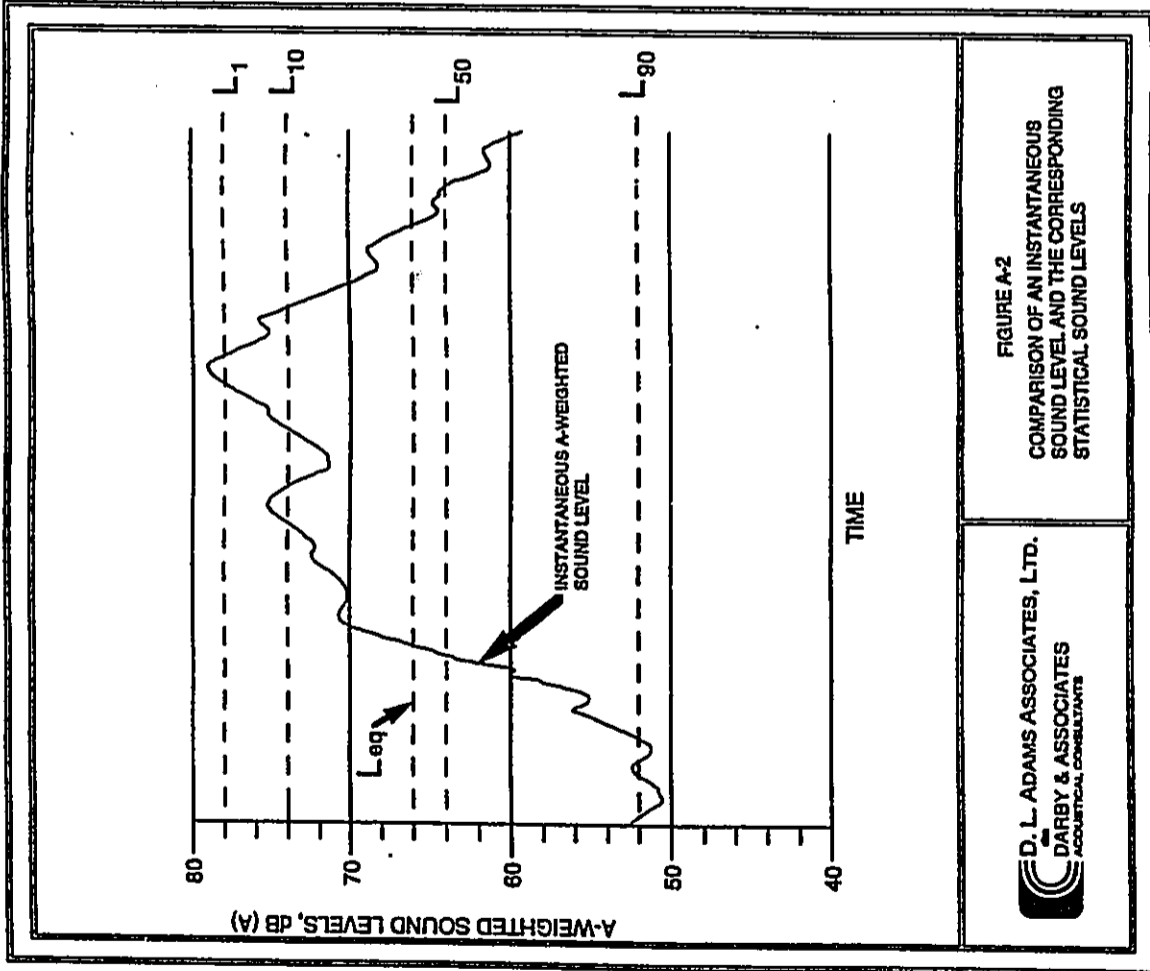


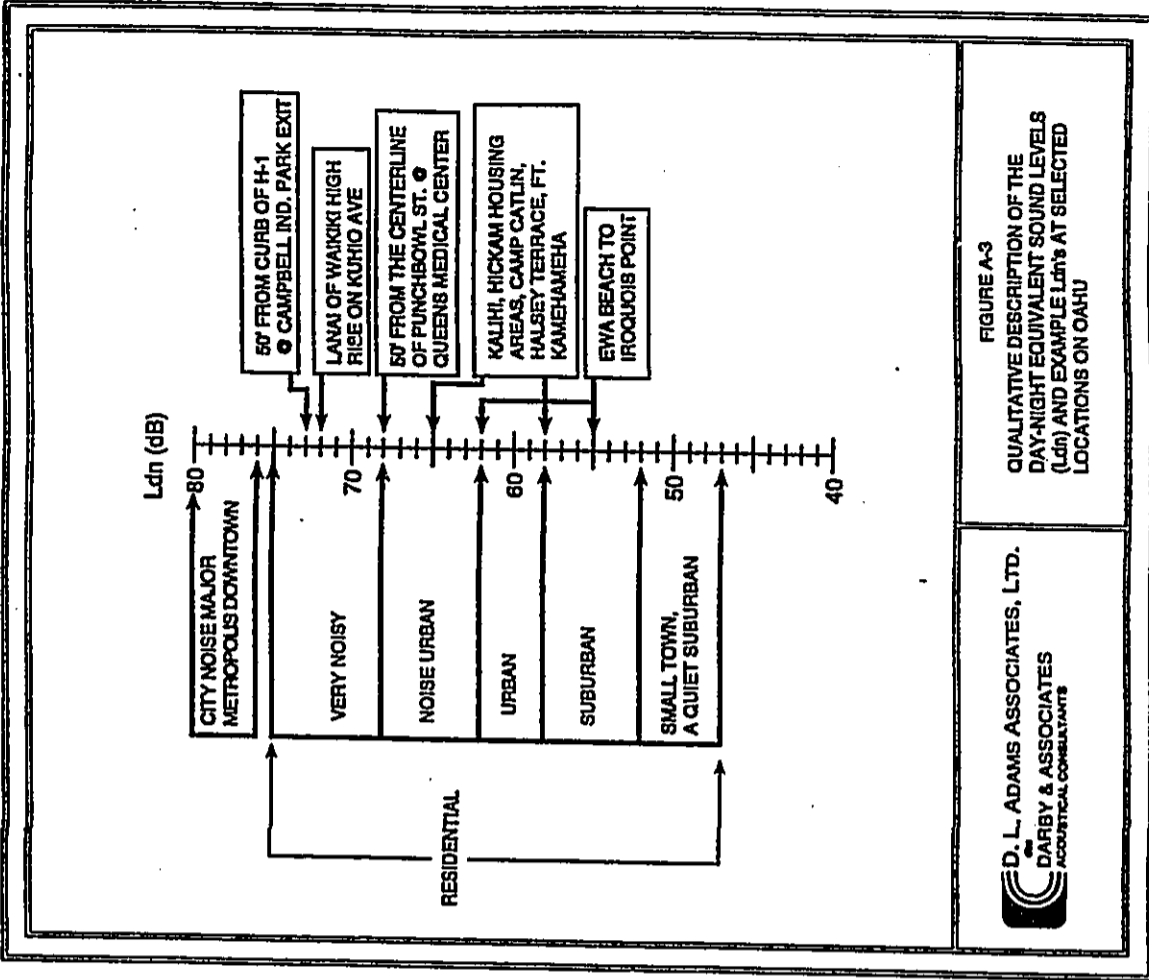
FIGURE A-1
THE RELATION BETWEEN SOUND PRESSURE, P, AND SOUND PRESSURE LEVEL, SPL. ALSO SHOWN ARE TYPICAL VALUES OF A-WEIGHTED SOUND LEVELS OF VARIOUS NOISE SOURCES.

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FIGURE A-2
 COMPARISON OF AN INSTANTANEOUS SOUND LEVEL AND THE CORRESPONDING STATISTICAL SOUND LEVELS



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FIGURE A-3
 QUALITATIVE DESCRIPTION OF THE DAY-NIGHT EQUIVALENT SOUND LEVELS (L_{dn}) AND EXAMPLE L_{dn}'s AT SELECTED LOCATIONS ON OAHU

APPENDIX F

Wetland Delineation Report

WETLAND DELINEATION

FOR THE

KAUMUALII HIGHWAY IMPROVEMENT PROJECT, ISLAND OF KAUAI, HAWAII

FINAL SUBMITTAL May 2000

U.S. Army Corps of Engineers
Honolulu District



Final
May 2000



Wetland Mapping, Kaumualii Highway Improvement, Lihue to West of Maluhia Road
Island of Kauai, Hawaii
U.S. Army Engineer District, Honolulu
Manuscript/1000.DOC

EXECUTIVE SUMMARY

Lihue is the County seat and the business center for Kauai. Kauai's main airport is located in Lihue as well as Kauai's principal harbor (Nawiliwili Harbor). Kaumualii Highway is the main road artery between Lihue and western Kauai. The proposed Kaumualii Highway improvement project would increase the vehicular capacity of a 7.5 mile stretch between Maluhia Road near Koloa and Rice Street in Lihue.

The Honolulu District, U.S. Army Corps of Engineers has been tasked with delineating wetlands and identifying the waters of the U.S. within the project boundaries. Wetland delineations and field surveys were conducted jointly by representatives from the State Department of Transportation (DOT) Highways Division, Federal Highway Administration (FHWA), U.S. Environmental Protection Agency (USEPA), U.S. Fish and Wildlife Service (USFWS), and U.S. Army Corps of Engineers (Corps) during the week of January 31 through February 4, 2000. This report documents the wetland delineation and assembles the information on this project related to wetlands and waters of the U.S. The delineations were performed in accordance with the Corps of Engineers 1987 Wetland Delineation Manual and were certified for regulatory purposes by the Corps Honolulu District for five years.

Wetlands are dynamic in nature and their characteristics and size vary with changes in land use, hydrology patterns and other natural and human actions. This report and its contents are a snapshot of the wetlands that will surely change over time. It is intended that the research, mapping, and data that has been accomplished for this effort be put in a format that can be used for future updates. Geographic Information Systems (GIS) and Global Positioning System (GPS) techniques were used to provide a layer of information of present wetland conditions and forms a basis for collecting comparative data in the future.

A digital wetland map is included in a CD that is part of this report. The report and a copy of the draft Environmental Assessment are also included in the project CD. Text documents were scanned in Adobe Acrobat PDF format. A foldout map showing the waters of the U.S. is also a part of this report.

A total of 2 wetlands and 10 waters of the U.S. were found within the project corridor. This report will be provided to the State DOT Highways Division for use in determining the amount of wetland impact.

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Chapter 1 - Introduction

1.1 Study Purpose

The purpose of this project was to map wetlands within the existing alignment of the Kamehameha Highway improvement project. Several meetings were held between DOT, FHWA, ParEn Inc. (engineering consultant to DOT), Parsons Brinkerhoff Quade and Douglas (environmental consultant to DOT), and the Corps to discuss the project and determine the scope of work. Based on these meetings and a subsequent public hearing, it was determined that the objectives of the project are to: (1) provide certified delineations of wetlands within the project alignment; (2) provide a map showing waters of the U.S. including wetlands; (3) provide a report describing the wetlands; (4) include an alternative alignment; and (5) provide recommendations to minimize wetland impacts. The project limits and pertinent landmarks are shown in figure 1.

1.2 Wetland Functions and Values

In the past, wetlands were called swamps and treated accordingly. People had visions of mosquitoes and considered the swamps as convenient places for dumps and places to build facilities that were unwanted in their neighborhoods. Kawai Nui Marsh on Oahu was used as a sewage disposal area and partially filled with construction debris and other industrial, commercial, and personal waste. Waikiki and Ala Moana were formerly marshes that were dredged and filled to reclaim land. Prior to human alterations, all three of these areas historically functioned as sediment basins, stormwater retention areas, nurseries for fish, and prime nesting areas for currently endangered waterbirds.

Wetlands can be productive natural ecosystems for fish and wildlife. In the main Hawaiian islands, there are four endangered waterbirds: the *Koioa maoli* or Hawaiian Duck (*Anas wyvilliana*); the Hawaiian Silt (*Himantopus mexicanus knudseni*); the Hawaiian moorhen (*Gallinula chloropus sandvicensis*); and the Hawaiian Coot (*Fulica alai*). For the island of Kauai, the *Hawaiian Waterbird Recovery Plan* (USFWS, 1977) designated Waita Reservoir and settling basins in the Koioa area as primary habitat for these endangered waterbirds. Primary habitat provide all of the requirements for completion of the annual life cycle for a significant number of birds in a region. Secondary habitat are of lesser importance and support a small number of birds. Areas downstream of the project identified as secondary habitat by the plan are Alokoko Pond (Menehune Fishpond), Kipu Reservoir, Huleia National Wildlife Refuge, and a sugar settling basin at Koioa. The Draft Revised Recovery Plan for Hawaiian Waterbirds, Second Revision (USFWS, 1999) is less specific. While it recognizes Huleia National Wildlife Refuge as an important managed wetland, it is silent on the other regional reservoirs. Figure 6 of this report is a large scale map which circles a broad area indicating that the "Koioa reservoirs" are one of nine core wetland localities on the island of Kauai.

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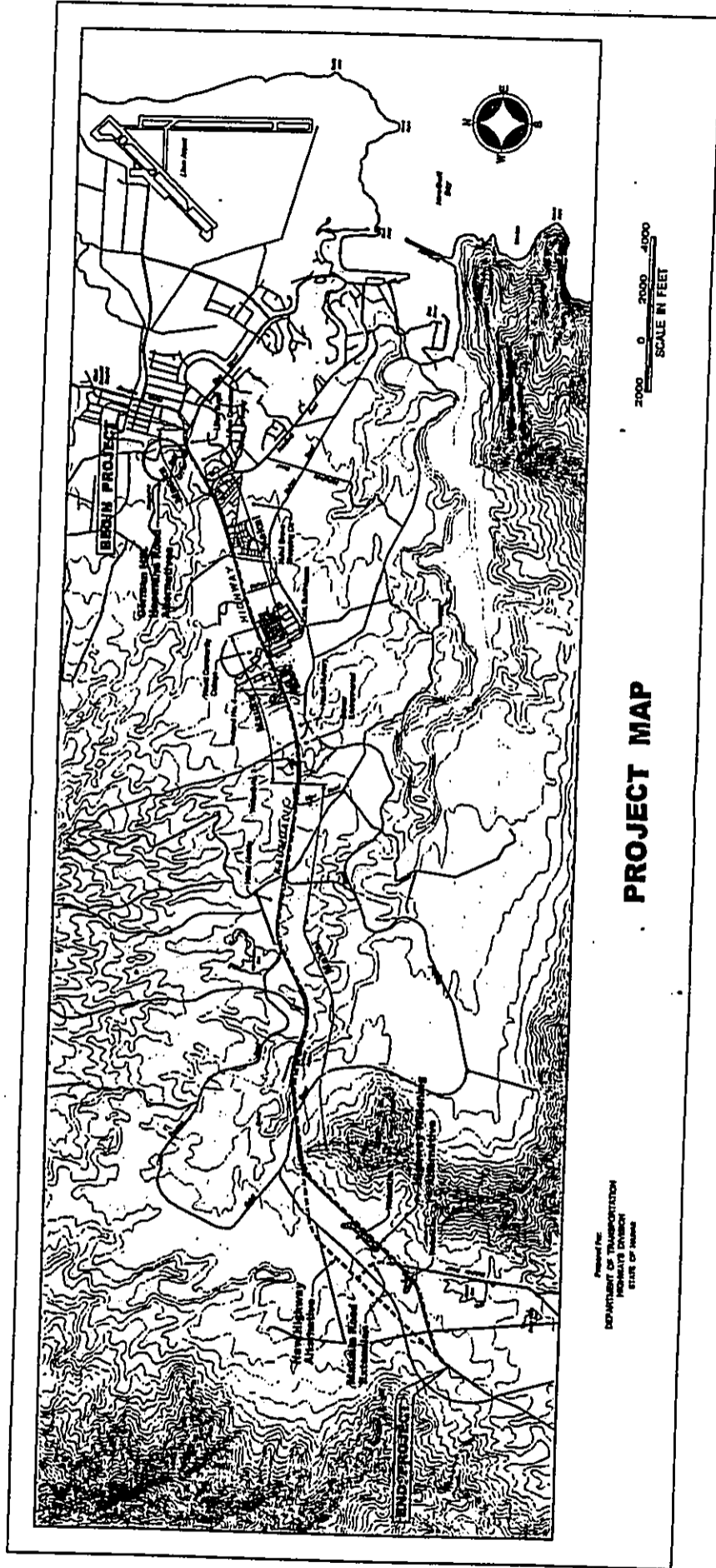


Figure 1 - Project Plan
 (Figure provided by Parsons Brinckerhoff
 Quate and Douglas, Inc.)

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

The Huleia National Wildlife Refuge (NWR) is one of three U.S. Fish and Wildlife Service NWR's established on Kauai. This refuge is downstream of the project site and a receiving area for much of the runoff through the project area. Huleia NWR is adjacent to Menehune Fishpond, a registered National Historic Landmark. The Huleia Refuge is approximately 241 acres, and was established in 1973 to provide open, productive wetlands for endangered Hawaiian waterbirds.

In general, wetlands along the coastline, streams and ponds also provide habitat for fish and crustaceans which are part of the food chain. Streams and brackish water areas are also used by native anadromous species (eg. native gobies, hihiwai, native shrimp) during their life cycle.

In addition to providing wildlife habitat, wetlands slow water velocities and help to trap sediments and pollutants before they enter the ocean. Wetlands can break down the pollutants and reduce the sediment and pollutant load to improve water quality in coastal areas. Wetland plants absorb nutrients and help to purify the water much like a kidney. In some areas of the world, wetlands are created to help treat sewage and stormwater runoff.

Another function of wetlands is to store and absorb excess water during floods which is then slowly released. This helps to reduce the peak discharges caused by floods. The longer detention time allows water to percolate and recharge the groundwater table. Wetland vegetation also stabilize and protect stream banks from scouring. However, aggressive vegetation such as California grass (*Brachiaria mutica*), hau (*Hibiscus tiliaceus*) and Job's tears (*Coix lachryma-jobi*) can also lead to unwanted land building, obstruction of the view plane, and worsening drainage conditions. Most of the drainageways in the project corridor are choked with vegetation.

In the past, Hawaiian wetlands were extensively used for fishponds and agricultural purposes. While some wetlands are still being actively farmed for watercress, lotus root, and taro, none of these crops are actively cultivated in the wetlands or streams along the Kaunaloa Highway corridor. However, other crops such as banana, eggplants, heliconia and ginger were planted along several of the stream banks within the project area.

The aesthetic values and recreational values provided by wetlands for fishing, hiking and wildlife watching are also important. In recent years, society has come to realize the values and functions of wetlands. Filling small wetlands may seem insignificant especially when looking only at the adjacent environment. However, filling a number of small wetlands can cause a cumulative effect and irretrievable damage to these special aquatic sites.

1.3 Wetland Definition

Since 1899, the Corps has been regulating the nation's navigable waters under the authority of the Rivers and Harbors Act. In 1972, the Clean Water Act was enacted. In 1975, the Corps adopted new regulations that added nonnavigable waters, including wetlands, into the definition of "waters of the U.S.". Of particular interest is Section 404 of the act which requires a permit to be obtained from the Corps of Engineers before dredge or fill materials can be discharged into waters of the U.S. including wetlands.

The Corps has come out with guidance on how wetlands are defined. The Corps authored a wetland delineation manual in 1987. The manual was rewritten in 1989 and this version was used for several years. Later, the Corps signed a Memorandum of Agreement (MOA) with the Natural Resource Conservation Service, USEPA, and USFWS to discontinue using the 1989 manual and to use the 1987 Wetland Delineation Manual instead.

Other entities such as the USFWS National Wetland Inventory (NWI) and the State of Hawaii have a broader wetland definition. In the 1987 manual, a wetland must exhibit hydric soil, water, and vegetation indicators. In contrast, the NWI only requires the presence of one of these attributes.

Corps of Engineers and U.S. Environmental Protection Agency Wetland Definition

"Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under natural circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas."

COE definition codified at 33 CFR 328.3
USEPA definition codified at 40 CFR 230.3

Geographic Decision Systems International (GDSI) and are available in an ArcView shape file through the State of Hawaii or GDSI. Although the scale is rather coarse and many of the wetlands have changed, the NWI effort and the Hall and Elliott study are the only sets of wetland maps that offer coverage over most of the Hawaiian Islands.

The NWI map is overlaid upon the USGS topo map of the project area and shown in Appendix A. The NWI indicated wetlands at Wetland #1, Halfway Bridge (upstream of project), Halemanahu Reservoir (upstream of project), Wetland #4, and reservoirs in the Puhi area. The map is rather coarse in scale but confirms the presence of the major wetlands in the area.

ParEn Inc. prepared a Draft Environmental Assessment (EA) dated January 1999. This document has been scanned by Pacific Scanning and Imaging in Adobe Acrobat format and is included in the project CD. The EA includes appendices on a botanical survey and wetland assessment, faunal surveys and stream surveys which were very helpful in the writing of this report. The botanical survey was performed by Char and Associates (1998) and described 3 areas as possible wetland areas and a fourth area as a stream crossing.

2.1.2 Other Information

In addition to the written literature, ParEn, Inc. provided engineering drawings in hardcopy and digital formats. The drawings contained topo information near the roadway and identified most of the existing culverts and stream crossings under Kananali Highway. Unfortunately, the CADD file from the topo survey was provided to the Corps after the wetland survey was completed. Thus we were not able to overlay this data prior to the wetland survey.

ParEn, Inc. also purchased a set of 5 false color infrared aerial photographs from Air Survey Hawaii dated 1992 that covered the west side of the project to Kauai Community College. The photographs were scanned in and roughly rectified using street intersections from the USGS map as control points. This provided a rough background that was useful in the field for locating ditches and access roads. After the CADD topographical information was delivered, the aerial photographs were rectified again which provided a better match with the USGS map, the GIS coverages, and other data. Due to concerns on copyright infringement, the scanned images are not included in the project CD.

2.2 Naming Convention

2.2.1 Wetland Names

To remain consistent with previous reports and drawings, the previous wetland numbers 1-4 are retained when referring to these areas whether they are jurisdictional wetlands or

Chapter 2 - Background

2.1 Literature Search

2.1.1 Available Reports and References

Wetland mapping for a large area such as the Kananali Highway improvement project is made more efficient by researching previous efforts. In this manner, efforts can be focused on areas that are believed to have the highest potential for wetlands. Wetlands are dynamic and change over time so history and land use is important in the development and evolution of these special aquatic sites.

In the early 1970's, the Corps of Engineers regulatory permit jurisdiction was increased to include Section 404 of the Clean Water Act. This act expanded the Corps' jurisdiction from navigable waters to include wetlands, streams and inland waterways. To help implement this portion of the permit program, the first comprehensive wetland inventory for the State of Hawaii was developed with Hall and Elliott's *Wetlands and Wetland Vegetation of Hawaii* (1977). This report focused on major wetlands and included 78 sites on the islands of Kauai, Oahu, Molokai, Maui, and Hawaii. The maps are based on the 1:24,000 USGS quadrangle maps, U-2 false color infrared imagery and 1:6,000 panchromatic aerial photographs. This inventory was prepared prior to the development of a wetland delineation manual and prior to the establishment of a wetland plant list for Hawaii. Given the available technology and knowledge of wetlands, this document provides excellent information and pioneered the way for wetland mapping in Hawaii.

The Hall and Elliott report describes wetlands at Kipu, Niunulu, Huleia, and Waita reservoir, all downstream of the project. Provided that the proposed improvements do not make major changes to existing drainage patterns, this project will not have a direct impact on these downstream wetlands.

An Ornithological Survey of Hawaii Wetlands (1977) was written by Ahuimau Productions for the Corps of Engineers to comply with the Fish and Wildlife Coordination Act and Endangered Species Act during evaluation of Department of the Army permit applications. The two-volume report included excellent descriptions of the waterbirds, wetland habitat, and copies of aerial photographs. A companion reference to the Hall and Elliott report, the same seventy-eight sites were visited. Comparing the status of the wetlands and waterbird species at the time with the conditions and land uses of the present shows how manmade changes have impacted wetlands and wetland habitat.

The National Wetland Inventory (NWI) was developed by the U.S. Fish and Wildlife Service using the Cowardin System. The NWI covers the nation including the main Hawaiian Islands. The maps were originally done in the early 1980's using pen and ink on an overlay of the USGS 1:24,000 quad sheets. The maps were later digitized by

not. Two additional wetlands were found on the opposite side of Kaunuauii Highway from wetland 1. The wetland on the Kekaha side of Maluhia Road is named wetland 1a. The other wetland closer to Lihue is named wetland 1b.

2.2.2 Photographs

Thirteen disks of photographs were taken during the five days of field work. They are mounted and labeled in Appendix B. The files were downloaded and mounted at the end of each day so the photos are grouped into separate files by date. Digital copies of the mounted photographs are included in the project CD.

2.2.3 Data Sheets

File names for the data sheets comply with the naming convention of the Corps' wetland database. The data sheets are named by date followed by a letter in alphabetical order. The date format is the year in the first four characters followed by two characters for the month and two characters for the day. The data sheets are included in Appendix C and in the project CD.

2.3 Mapping

In this project, waters of the U.S. include both streams and wetlands. The stream crossings were identified from the CADD drawings and overlaid on the USGS topographic map using ArcView GIS software. They were then field verified and are discussed further in chapter 4.

There were two areas considered jurisdictional wetlands in this project. Wetland number 2 is well demarcated and lies partially in a ravine. The ravine is covered by a thicket of hau and guava trees which makes it extremely difficult to survey. The edges of the ravine closest to the highway was noted by the previous topographical survey. The color infrared photograph matched the CADD drawing fairly well and it was decided to use the photograph to map wetland number 2. This mapping technique is conservative in that it slightly overestimates the actual extent of jurisdictional wetlands.

Wetland 4 was within a tree covered stream that made it impossible to survey by GPS or to use aerial photography. Sample points were taken and we walked the edges of the wetland and tied numbered flagging. ParEn, Inc. marked the wetland boundaries on the CADD topo map as shown in Chapter 3.

Chapter 3 - Descriptions of Wetlands

3.1 General

As indicated in Chapter 2, the wetland naming convention follows that of the construction drawings. Figure 2 shows the drainage patterns and features around wetlands #1, #1a, #1b, and #2. Note that only wetlands #1a, #1b, #2 and #4 were determined to be jurisdictional wetlands. Wetlands #1 and #3 are not jurisdictional wetlands.

3.2 Wetland #1

An irrigation ditch, a pond, and an overflow ditch comprise the area identified as "wetland #1". The irrigation ditch flows through a presently fallow field. A berm created from ditch excavation runs along the irrigation ditch. The berm prevents water from the irrigation ditch from flowing into the overflow ditch and pond. Job's tears (*Coix lacrym-jobi*) and California grass (*Brachiaria mutica*) are found at the edges of the irrigation ditch near wetland #1. The ditch crosses Kaunuauii Highway at bridge 7-F. (Figure 3)



Figure 3 - Upstream end of bridge 7-F.

The pond is estimated to be 3-4 feet deep and is approximately 5,400 square feet in size. The overflow ditch drains the pond when water levels exceed the sill height. Soils, vegetation, and hydrology parameters were sampled and evaluated at this location. The soils were not hydric and the hydrology is controlled by the overflow of the pond. The overflow ditch is dominated by upland species such as octopus tree (*Schefflera actinophylla*), Koster's curse (*Clidemia hirta*) and guava. The outlet of this ditch was clogged 25 feet upstream of culvert #5 leaving the ditch dry upstream and downstream of the culvert with a little patch of ponded water above the clog. Due to the lack of soils, dominance of upland vegetation, and infrequent flow, this area is not a jurisdictional wetland.



Figure 4 - Pond at Wetland 1.

The two ditches and pond that make up Wetland #1 are not considered jurisdictional wetlands, although the pond is considered a water of the U.S. Based on the topography and available information, the irrigation ditch is clearly a manmade feature and part of

the system that connects the flumes and reservoirs upstream of the highway with the Mauka, Puu O Heva, and Waita reservoirs downstream. Because this feature was created as part of an agricultural irrigation system, it is exempt from regulation under Section 404 of the Clean Water Act and is described in more detail in Chapter 4. The connection to the pond is not readily apparent and a resident had indicated that the pond was constructed for aesthetic purposes and not irrigation. Thus the pond is considered a water of the U.S. A more detailed description of the pond can be found in Chapter 4.

3.3 Wetlands #1a and #1b

This wetland is bounded by the irrigation ditch, Kaunualii Highway, Maluhia Road, and a dirt road to the south. The wetland is dominated by thickets of hau, and discarded and fallen tree branches. On the Maluhia Road side of the wetlands, swamp mahogany lines both sides of the road creating the 'tree tunnel' which towers over the hau.

Pockets of ponded water were seen as well as a flowing interior ditch. The ground elevation of this wetland is below the shoulder elevations of Kaunualii Highway and Maluhia Road. A water control structure in the irrigation ditch on the western exterior of the wetland shunts a portion of the water through the interior ditch in wetland 1a (Figure 5). Water flows through the interior ditch and beneath Maluhia Road to wetland #1b. The interior ditch is the low part of the wetland. Because of the difference in elevation with the ditch, wetlands 1a and 1b appear to be hydrologically supported or augmented by a water source independent of the irrigation ditch.



Figure 5 - Water control structure at wetland 1a.

Wetlands #1a and #1b exhibit the three hydric parameters and are considered jurisdictional wetlands. A conservative rule of thumb would be to take the top of the slopes into the wetlands as a buffer zone and ensure that no fill material goes past that line. Wetland #1a was flagged near the highway in the event that work occurs in this area. Wetland #1b is setback from Kaunualii Highway so there was no need to flag this wetland.

3.4 Wetland #2

Wetland #2 (Figure 6) begins on the inland side of Kaunualii Highway approximately 1000 feet on the Lihue side of the intersection with Maluhia Road. There is a ravine like feature approximately 30-40 feet high which tapers into a swale and blends into Weoweopitau Stream.

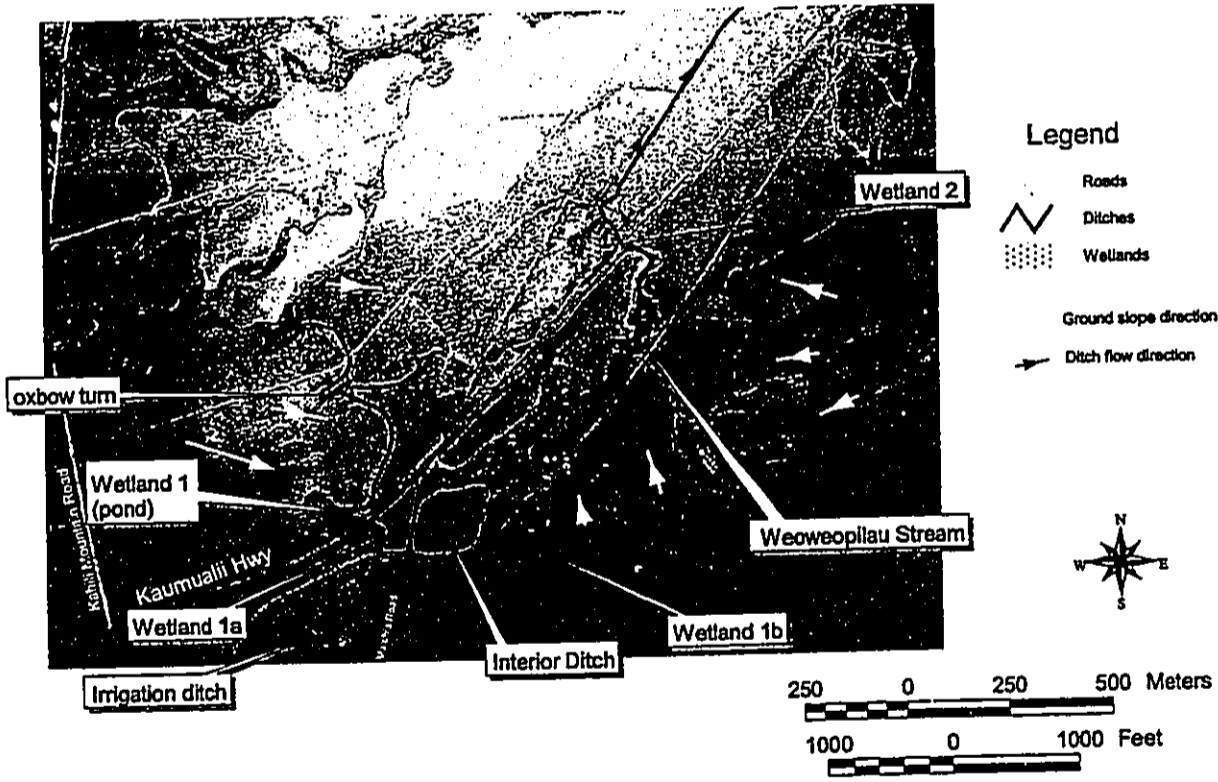


Figure 2 - Drainage Patterns near Wetlands 1, 1a, 1b, and 2



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Kaunualii Highway Improvements

The hydrology for this wetland is provided by sheet flow since the topography in this area slopes from Kahili Mountain Road towards the highway and Weowaopila Stream. As shown in Figure 2, an irrigation ditch flows down the slope and then cuts against the natural slope (the ditch is up to 6 feet below the natural ground in some places) towards wetland 1. Drawing a line from the oxbow turn in the ditch, it is likely that water could jump the ditch during high flows. The false color infrared aerial photographs show a line in this area. Groundwater and surface runoff trickles in from the top of the ravine creating a waterfall down the steep slope. During a February 4, 2000 walkthrough of the cane haul roads above wetlands #1 and #2, a 100-150 foot section of the cane road closest to wetland #2 was moist and/or ponded. *Cyperus polytrachyos* and *Fimbristylis littoralis* (both listed as facultative plants) were seen in the road. However, no defined waterways were found. The natural topography slopes towards the ravine in wetland #2.

The slopes of the ravine are dominated by guava and hau. Soils at the base of the ravine are dark, soft and contains a lot of fine material. At the base of the 'waterfall', the slope becomes gentler and the ravine gets wider. Sword tails (*Xiphophorus helleri*), guppies (*Poecilia sp.*), and bullfrogs were observed in the upper reaches of this wetland. The hau dominated ravine continues parallel to the roadway for several hundred feet before it turns into a California grass meadow.

Sporadic pockets of primrose willow (*Ludwigia octovalvis*) occurs in the California grass meadow along with pockets of open water. A small open ditch 2 to 3 feet wide extends from the hau towards the stream but eventually widens out and becomes indistinguishable. A few specimens of sawgrass (*Cladium jamaicense*) were found within the ditch. *Wedelia trilobata* is common along the roadside in this section of the road and some of it can be found growing in small areas of the California grass meadow. Sword ferns (*Nephrolepis exaltata*) are also common in this meadow. Further downstream, the wetland community is interspersed with other vegetation such as rose myrtle (*Rhodomyrtus tomentosa*) and rose apple (*Syzygium jambos*). Pig trails were seen throughout the meadow and pig wallows were observed under the guava trees.

Several data points were taken and the border of the wetland was flagged as shown on figure 6. The data sheets for these data points can be found in Appendix C.

The functions and values of this wetland include nutrient uptake, soil stabilization, sediment trapping, ground water recharge, flood storage and habitat for nonnative aquatic species in the areas with open water.

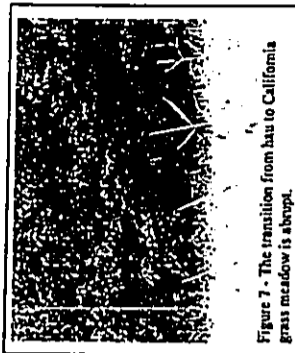
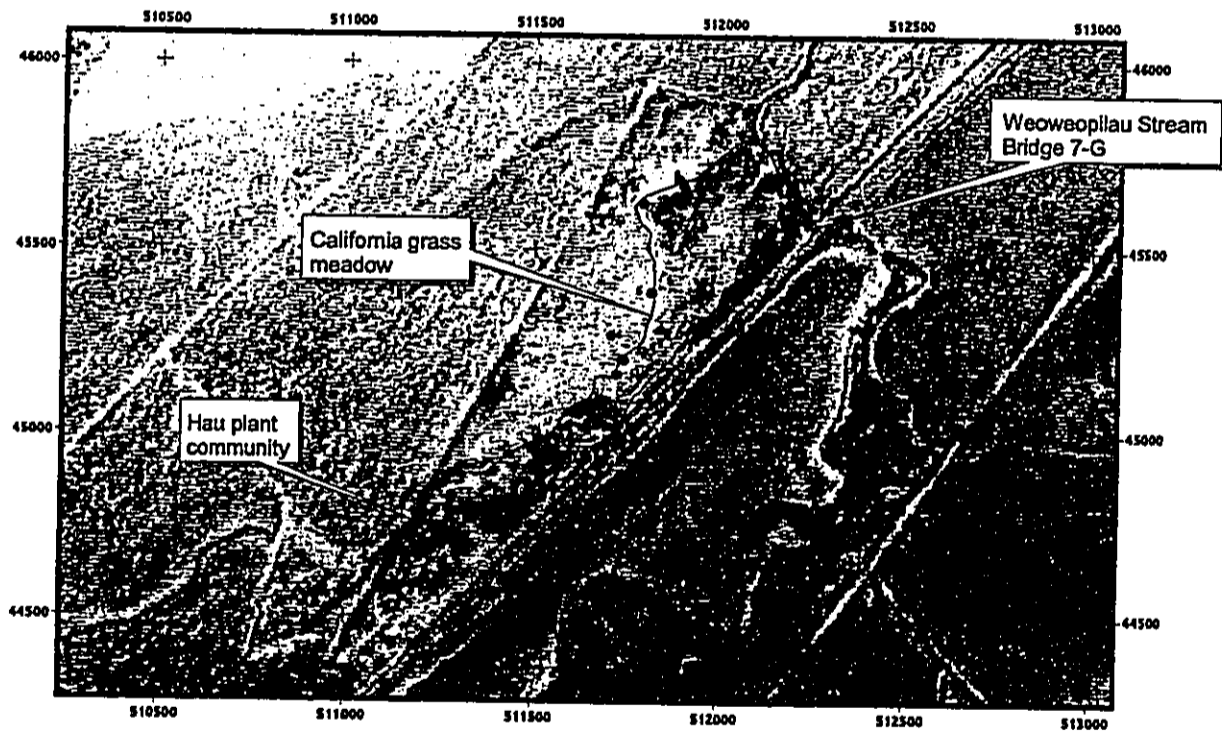


Figure 7 - The transition from hau to California grass meadow is abrupt.



Themes Used

- GPS Point
- Datasheet
- GPS Line
- Wetland Boundary

500 0 500 Feet
 100 0 100 200 Meters

Figure 6 - Wetland 2
 Kaunuaui Highway Improvements

3.5 Wetland #3

According to the DEIS and supplementing documents, this wetland is supposed to occur on the east side of Hainakaunalehua Stream which flows towards Brewer Environmental's facilities at Puhii. This area is a very steep gully with mango and java plum trees at the top edge. Approximately 40 feet below is a flowing perennial stream. Sugar cane is currently being grown in the surrounding area and the fields were recently plowed. There were no indicators of a wetland within the area. See Chapter 4.3. for further information on this water of the U.S.

3.6 Wetland #4

A dirt road splits the two forks of Puhii Stream at their confluence on the upstream side of Kaunualii Highway. Wetland #4 is in the east fork of Puhii Stream as shown on figure 7a. The west fork of the stream appears intermittent and is not a wetland.

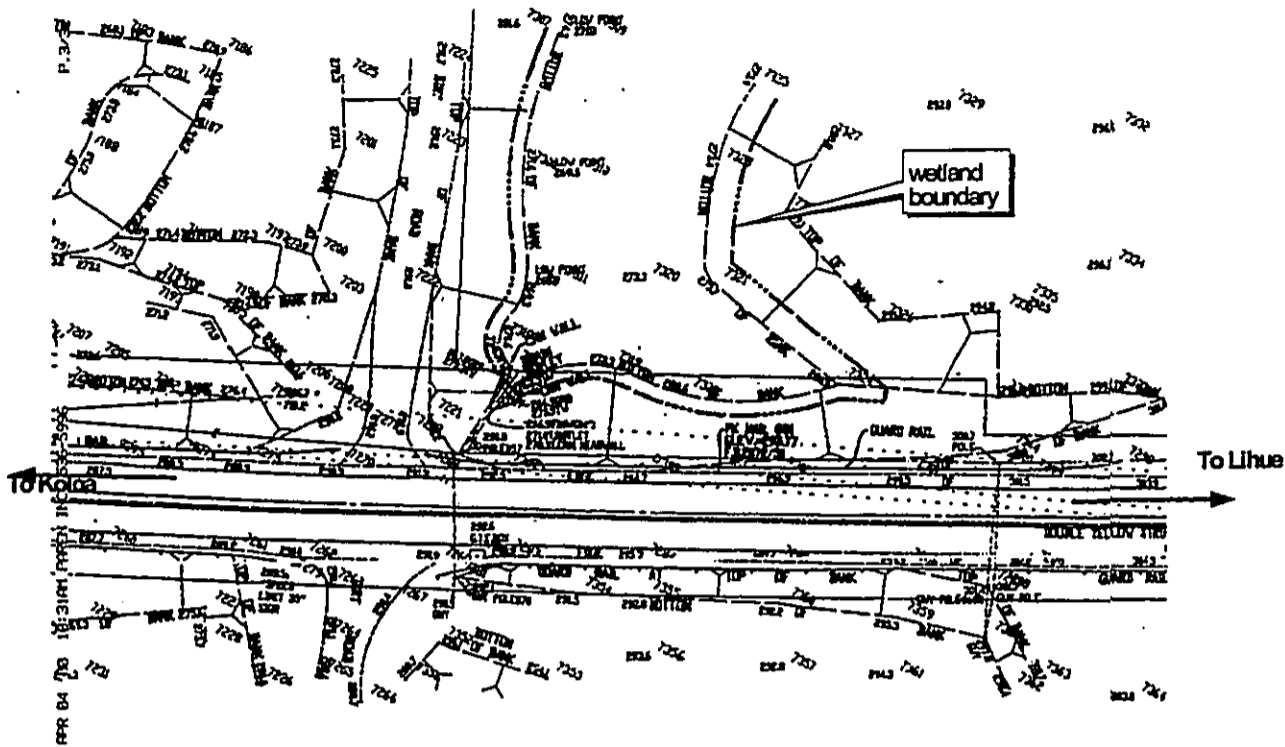
The eastern fork had a gently flowing stream which exited under the highway through a 2-foot-wide by 4-foot-tall culvert. Further description of the east branch streambed and west branch can be found in Chapter 4.3.12.

The stream bed sloped upwards into a bench which contained banana (*Musa x paradisiaca*), white shrimp plant (*Justicia betonica*), castor bean (*Ricinus communis*) and California grass. A lot of this vegetation was covered by vines such as purple allamanda (*Thunbergia laurifolia*) and Koa'i 'awa (*Sporobolus indica*). The slope got steeper and continued until it reached a second bench.

Outflow from the east fork is controlled by a 2-foot-wide by 4-foot-high culvert beneath Kaunualii Highway. This is likely to be inadequate in times of high flow but the road is at least 25 feet higher than the culvert invert elevation and there is substantial area where water can be stored. The low outflow probably contributes to the wetland conditions along the banks of this stream.

The soils in this area is mapped as Marsh (M2). Soils samples confirmed this designation.

Dominant wetland vegetation included California grass, homohono, and Jobs tears. Upland and facultative plants such as Elephant grass (*Pennisetum purpureum*), *Macaranga tanarius*, and woodrose (*Merrillia tuberosa*) were also present. Approximately 250 feet from the highway, bulrush was growing along the edges of the wetland.



Note: Map provided by ParEn Inc.



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Figure 7a - Wetland #4
 Kaunualii Highway Improvement Project

The functions and values of this wetland include nutrient uptake, soil stabilization, sediment trapping, ground water recharge, flood storage and habitat for nonnative aquatic species in the areas with open water.



Chapter 4 - Other Waters of The U.S.

4.1 General

Chapter 3 described the wetlands within the project corridor. Chapter 4 will describe other waters of the U.S. (that are not wetlands) which are subject to regulation under Section 404 of the Clean Water Act. None of the streams or drainageways within the project corridor are considered navigable nor are they subject to interstate commerce. The waterways are also well above the tidal influence. Based on these considerations, none of the activities from this project are subject to Section 10 of the River and Harbor Act regulations.

4.2 Methodology

The State DOT's engineering consultant, ParEn, Inc., provided the Corps with excerpts from a draft set of blue-line engineering drawings which show the existing road, proposed improvement alignment, and the bridge and culvert crossings. The drawings indicate the size and type of both existing and replacement culverts and bridges. These drawings were cross referenced with the U.S. Geological Survey topographic maps to verify that marked water courses were not missed.

All of the indicated culverts and bridge crossings plus three culverts west of the highway intersection with Kahili Mountain Road are listed in Table 1 and shown in figure 8 (oversize drawing, see pocket at end of report). Most of the culverts were checked and verified although some ends of the culverts were inaccessible due to heavy vegetation and steep slopes. In these cases, the surrounding areas upstream and downstream were noted.

The waterways crossing beneath Kaunualii Highway through culverts and bridges were classified, for informational purposes, into six general categories: (1) perennial streams; (2) intermittent streams; (3) agricultural drainage ditches; (4) highway drainage ditches; (5) other drainage ditches; and (6) irrigation ditches. Named streams within the project corridor included Weoweopila Stream, Halenahu Stream, Hulcia Stream, Hainakaunahua Stream, Puhi Stream, Puali Stream and Nawiliwili Stream.

4.3 Descriptions of Culvert and Bridge Crossings

4.3.01 Tree Tunnel Bypass Alternative (Culverts COE-1, COE-2, COE-3, #1 & #2)

The State DOT Highways Division held a public meeting on Kauai in January, 2000. Speakers at the meeting expressed concerns about the proposed project impact on the tree tunnel at Maluhia Road. One of the people at the meeting suggested an alternative to bypass Maluhia Road and wetland #1 and #2 by branching off the existing Kaunualii

Table 1 - Stream and Culvert Crossings Beneath Kamuali Highway

Name or description	Watershed	Location description	ID#	Sheet #	Type	Size	Water Upstream?	Water Downstream?	Water of the US?	Approx height from invert road	Plants	Animals	Photos	Type
Culvert #COE-1	drainage ditch	Culvert #1: Pole 242, 150' west	COE #1	n/a	Double box culvert	26x18	No	No	No	12'	Hau, banana, ginger	None	D12, # 8, 9	Ag Drainage
Culvert #COE-2	drainage ditch	Culvert #2: Pole 238, 70' west	COE #2	n/a	RCP	36"	No	No	No	12'	none	None	D12, # 8, 9	Ag Drainage
Culvert #COE-3	drainage ditch	Culvert #3: Pole 234, 30' east	COE #3	n/a	RCP	24"	No	No	No	6'	none	None	D12, # 8, 9	Ag Drainage
Culvert #1	abandoned ditch	Line site of pole 228, 3rd pole (Kakaha side of	#1	C-1	RCP	30"	No	No	No	14 R	Jobs Team, Bidwa, octopus tree	None	D7, #8	Ag Drainage
Culvert #2	abandoned ditch	Central @ Nuhou pipe on Line Side	#2	C-2	Box culvert	6x3	No	No	No	4 R	Jobs Team, Ludwig, octopus tree	None	D7, #9	Ag Drainage
Bridge 7-E	(ditch to reservoir)	Look for guard rails at mile marker 7	#3	C-2	Double box culvert	10x9	Yes	Yes	Yes	12 R	Jobs Team, Ludwig, octopus tree	None	D7, #10-11	Irrigation ditch
Bridge 7-F	Wishonou	RC box culvert	#4	C-3	RC Box Culvert		Yes	Yes	No	10 R				Irrigation ditch
Culvert #5	(ditch to wetland)	All pond of Wetland No. 1	#5	C-3	Pipe	30"	No	No	No	15' at upstream	Dry upland for 25' up stream			Other drainage
Culvert #6	abandoned ditch	Flow through RC box for large stream and dips	#6	C-3	Pipe	20"	No	No	No	10'				Other drainage
Culvert #7	roadway	at base of hill	#7	C-3	RCP	24"	No	No	No	15'				Road drainage
Culvert #8	Wetland 2	Mid wetland 2, Pole 204	#8	C-4	RCP	18"	Yes	Yes	No	15 US; 7 DS				Road drainage
Bridge 7-G	Wetland 3	Mid wetland 3, Pole 204	#9	C-4	RCP	18"	Yes	Yes	No	15 US; 7 DS				Road drainage
Culvert #10	Wetland 4	before road	#10	C-4	RCP	24"	Yes	Yes	Yes	20 R upstream,				Road drainage
Culvert #11	Wetland 5	turnout after ironwood grove	#11	C-5	Box culvert	4x4	Yes	Yes	No	25 R downstream	Richus comments			Perennial Stream
Culvert #12	Wetland 6	Grated drain inlet on metal side of road	#12	C-5	Pipe	24"	No	No	No					Road drainage
Culvert #13	Wetland 7	Wetland 7	#13	n/a										Road drainage
Culvert #14	Wetland 8	Mile marker 5	#14	C-6	Drain	24"	No	No	No	4 R				Road drainage
Culvert #15	Wetland 9	Highway Bridge	#15	C-7	Bridge		Yes	Yes	Yes		Umbrella seep			Road drainage
Culvert #16	Wetland 10	Wetland 10	#16	n/a										Perennial Stream
Culvert #17	Wetland 11	Conc lined ditch	#17	C-7	Pipe	24"	No	No	No	3 R				Ag Drain
Culvert #18	Wetland 12	drainage ditch	#18	C-7	Pipe	24"	No	No	No					Down stream
Culvert #19	Wetland 13	drainage ditch	#19	C-8	RCP	24"	No	No	No					Ag Drainage
Culvert #20	Wetland 14	drainage ditch	#20	C-8	RCP	24"	No	No	No	4 R upstream side				Ag Drainage
Culvert #21	Wetland 15	Wetland 15	#21	C-8	Dial box	6x6	Yes	Yes	No	4 R upstream side				Ag Drainage
Culvert #22	Wetland 16	drainage ditch	#22	C-8	Pipe	24"	Yes	Yes	Yes					Perennial
Culvert #23	Wetland 17	drainage ditch	#23	C-8	Pipe	24"	No	No	No	18 R				Ag Drainage
Culvert #24	Wetland 18	drainage ditch	#24	C-8	Pipe	24"	No	No	No	18 R				Ag Drainage
Culvert #25	Wetland 19	drainage ditch	#25	C-8	Pipe	24"	No	No	No	18 R				Ag Drainage
Culvert #26	Wetland 20	drainage ditch	#26	C-8	Pipe	24"	No	No	No	15' DS	Gringer			Ag Drainage
Culvert #27	Wetland 21	drainage ditch	#27	C-9	Pipe	24"	No	No	No	18 R				Ag Drainage
Culvert #28	Wetland 22	drainage ditch	#28	C-9	Pipe	24"	No	No	No	18 R				Ag Drainage
Culvert #29	Wetland 23	drainage ditch	#29	C-9	Pipe	24"	Yes	Yes	Yes	18 R				Ag Drainage
Culvert #30	Wetland 24	drainage ditch	#30	C-10	Pipe	24"	Yes	Yes	Yes	18 R				Ag Drainage
Culvert #31	Wetland 25	drainage ditch	#31	C-10	Pipe	24"	Yes	Yes	Yes	18 R				Ag Drainage
Culvert #32	Wetland 26	drainage ditch	#32	C-10	Pipe	24"	Yes	Yes	Yes	18 R				Ag Drainage
Culvert #33	Wetland 27	drainage ditch	#33	C-10	Pipe	24"	Yes	Yes	Yes	18 R				Ag Drainage
Culvert #34	Wetland 28	drainage ditch	#34	C-10	Pipe	24"	Yes	Yes	Yes	18 R				Ag Drainage
Culvert #35	Wetland 29	drainage ditch	#35	C-10	Pipe	24"	Yes	Yes	Yes	18 R				Ag Drainage
Culvert #36	Wetland 30	drainage ditch	#36	C-10	Pipe	24"	Yes	Yes	Yes	18 R				Ag Drainage
Culvert #37	Wetland 31	drainage ditch	#37	C-10	Pipe	24"	Yes	Yes	Yes	18 R				Ag Drainage
Culvert #38	Wetland 32	drainage ditch	#38	C-10	Pipe	24"	Yes	Yes	Yes	18 R				Ag Drainage
Culvert #39	Wetland 33	drainage ditch	#39	C-10	Pipe	24"	Yes	Yes	Yes	18 R				Ag Drainage
Culvert #40	Wetland 34	drainage ditch	#40	C-10	Pipe	24"	Yes	Yes	Yes	18 R				Ag Drainage
Culvert #41	Wetland 35	drainage ditch	#41	C-10	Pipe	24"	Yes	Yes	Yes	18 R				Ag Drainage
Culvert #42	Wetland 36	drainage ditch	#42	C-10	Pipe	24"	Yes	Yes	Yes	18 R				Ag Drainage
Culvert #43	Wetland 37	drainage ditch	#43	C-10	Pipe	24"	Yes	Yes	Yes	18 R				Ag Drainage
Culvert #44	Wetland 38	drainage ditch	#44	C-10	Pipe	24"	Yes	Yes	Yes	18 R				Ag Drainage
Culvert #45	Wetland 39	drainage ditch	#45	C-10	Pipe	24"	Yes	Yes	Yes	18 R				Ag Drainage
Wetland 40	Wetland 40	drainage ditch	COE #4	n/a			Yes	Yes	Yes					Perennial Stream

Highway near the Knudsen Gap and following an abandoned cane haul road to Kahili Mountain Road (figure 9).

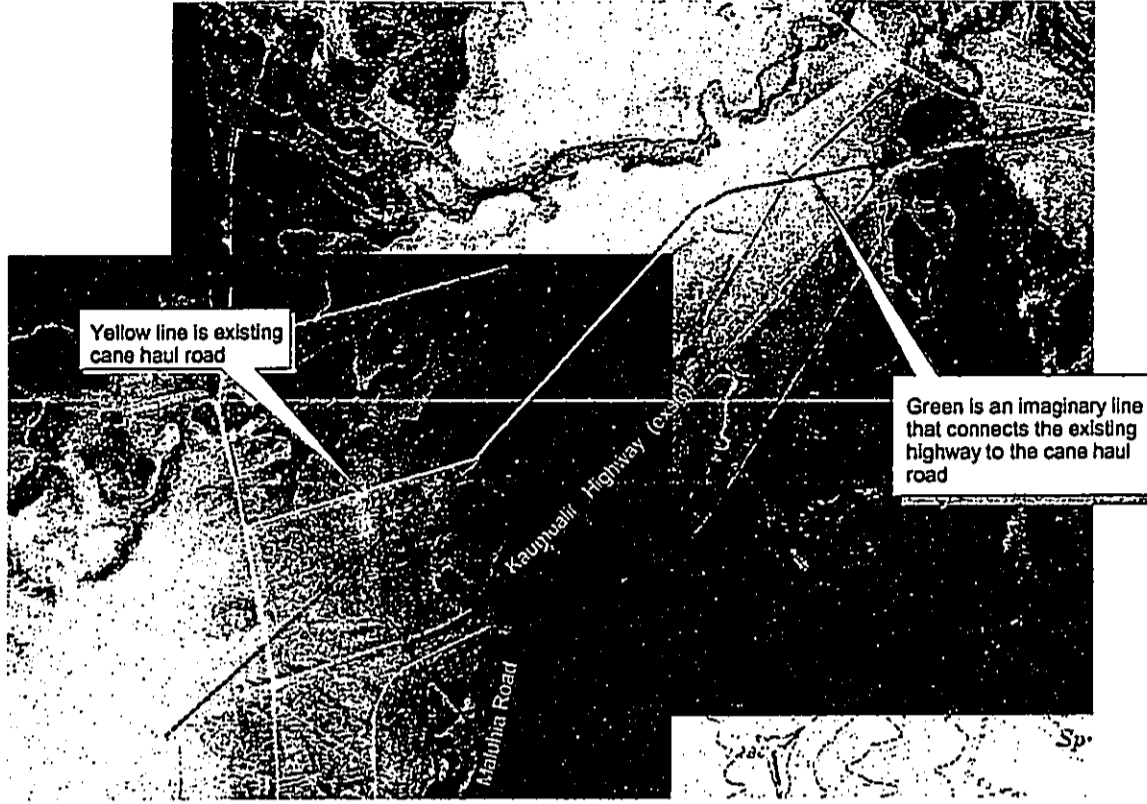
On January 31, 2000, the cane haul road was walked to determine if any streams or wetlands were present. We went through the first gate on the Koloa side of Halfway Bridge and followed the access road west-northwest over Weowopilaun and Kuia Streams. Both of these streams are perennial at their crossings beneath this main access road. The abandoned cane haul road was blocked by a high berm and overgrown. We parked on the access road and walked the haul road in a southwesterly direction all the way to Kahili Mountain Road.

Approximately 2,000 meters from the access road, we came to a 3-way fork in the road. We followed the southeast fork (perpendicular to haul road) until its intersection with Weowopilaun Stream. This perennial stream is considered a water of the U.S. and would need to be crossed at some point if the 'tree tunnel bypass' alternative is selected. Two old drainage ditches also crossed the cane haul road. Water was not seen in either ditch. The fields adjacent to the road are fallow and these ditches were overgrown by vegetation similar to the fields. On February 4, 2000, the access road was revisited to find the source of water for the irrigation ditch at wetland 1. The ditch was at least 6 feet below the surrounding ground elevation and flow was going against the slope of the surrounding features. The unlined irrigation ditch had a trapezoidal cross section. Both ditches are not regulated as waters of the U.S. No wetlands were seen nor are any wetlands anticipated to be impacted in this area if the tree tunnel bypass alternative is selected.

Because the alternative would extend to the next horizontal curve on the Kekaha side of the existing alignment, we checked the three culverts in Kaunuaui Highway beyond Kahili Mountain Road. These culverts are named COE-1, COE-2, and COE-3 in Table 1. COE-1 is a 24-inch RCP that has headwalls on both ends of the culvert. COE-2 is a 6-foot-wide by 3-foot-high culvert. Culvert #1 and #2 are identified in the project drawings and drain the same fields from one side of the highway to the other as the COE culverts. No water was seen in the depressions upstream or downstream of any of these five culverts. The drainages were used for agricultural purposes that have been abandoned. None of these drainage ways are considered waters of the U.S.

4.3.02 Drainages near Wetland #1

Bridge 7-E is located near mile marker 7 approximately 300-350 meters east of the pond. The ditch flows directly to Mauka Reservoir. Flowing water 1-2 inches deep was observed during the February 2 visit. Jobs tears, octopus tree, and Beggar's tick (*Bidens pilosa*) were observed in the ditch. This ditch is a part of the agricultural irrigation system and is not a regulated water of the U.S.



1. Based on the 1/12/00 meeting, it was determined that the alternative alignment was proposed at a public hearing and that it is based on using the cane haul road parallel to Kaunuaui Highway.
2. The wetland delineation will focus on the wetlands within the existing alignment and will try to also catch the cane haul road. No commitment is made to delineating wetlands through the vegetated non road areas but if possible, we will check.

Figure 9 - Maluhia Road (Tree Tunnel) Bypass Layout

The crossings near the pond and irrigation system which comprise Welland #1 include Bridge 7-F and culverts #5 and #6. A berm separates the pond from the irrigation ditch which needs to take a turn to get around the pond and passes under Bridge 7-F. Vegetation around the pond includes hau, ginger, octopus tree, sourbush (*Pluchea carolinensis*), and guava. The pond is assumed to be at least 3-4 feet deep. Frogs and mosquito fish were observed at this pond. According to a Kauai resident, the pond was constructed for aesthetic purposes but has been abandoned and no longer maintained. The pond is considered a water of the U.S.



Figure 10 - Irrigation ditch on upstream side of pond at Welland #1.

An irrigation ditch flows around the west side of the pond (figure 10), crosses beneath Bridge 7-F (figure 11) and feeds into Mauka Reservoir. The irrigation ditch crosses under Bridge 7-F and flows along the western side of welland 1a. A water control structure regulates water flowing through the irrigation ditch and diverts some of its flow through welland 1a with the remaining water flowing to Mauka Reservoir. Smallmouth bass (*Micropterus salmoides*) were observed in the ditch.

An overgrown drainageway runs from the pond in a Lihue direction parallel to Kaunualii Highway. This drainageway is assumed to be an overflow ditch for the pond as the irrigation ditch (which runs counter to the ground slope in this location) and its adjacent berm would prevent water from the mountains from entering the ditch. Debris blocks the narrow portion of the ditch 25 feet upstream from its outlet at culvert #6. This results in several inches of ponded water in a small area upstream of the culvert. The culvert itself is dry and heads to a dry ditch on the Lihue side of Malakia Road. Dominant species in the ditch on the mauka side of Kaunualii Highway include guava and octopus tree. This drainageway appears to flow very infrequently as evidenced by the proliferation of upland plants, clogged drainage way and small (24 inch diameter) culvert. Thus the overflow ditch is not considered a water of the U.S.



Figure 11 - Irrigation ditch on downstream side of Bridge 7-F.

The crossings near the pond and irrigation system which comprise Welland #1 include Bridge 7-F and culverts #5 and #6. A berm separates the pond from the irrigation ditch which needs to take a turn to get around the pond and passes under Bridge 7-F. Vegetation around the pond includes hau, ginger, octopus tree, sourbush (*Pluchea carolinensis*), and guava. The pond is assumed to be at least 3-4 feet deep. Frogs and mosquito fish were observed at this pond. According to a Kauai resident, the pond was constructed for aesthetic purposes but has been abandoned and no longer maintained. The pond is considered a water of the U.S.

4.3.03 Culverts at Welland #2 (Culverts #7-8)

Culverts #7 and #8 carry surface runoff from the makai side towards the lower side of the road at Welland #2. These are small diameter culverts (24-inch and 18-inch) serving the drainage ditches running along the highway. These do not carry waters of the U.S.

4.3.04 Weoweopillau Stream

Bridge 7-G is a choke point in the highway with very little shoulder. Water is perennial and flows in a makai to mauka direction under the bridge (Figure 12). The water continues flowing parallel to the highway and eventually flows into Huleia Stream. Weoweopillau Stream is a water of the U.S. and the plans indicate that the double box culvert (10x9) at Kaunualii Highway will be replaced.



Figure 12 - Downstream side of bridge 7-G crossing Weoweopillau Stream.

4.3.05 Weoweopillau Stream to Halfway Bridge (Culverts #10-12, 14)

Four culverts were noted in this stretch of highway. Heading from Malakia Road towards Lihue, the road cuts through a small section of the mountain. Ironwood trees are planted on the west side of the cut. An unmarked and unnamed stream crosses the highway at culvert #11 and hugs the mountain (Figure 13) where it is presumed to be a tributary to the nearby Weoweopillau Stream. Culvert #12 is a grated drain inlet which catches surface water at the highway. Culverts #10 and #14 (near mile marker 5) also service the highway drainage system during rains. Culvert #14 services a concrete lined ditch that sends the runoff from the highway toward Huleia Stream. Only the tributary at culvert #11 would be regulated as a water of the U.S.



Figure 13 - Looking downstream of culvert #11.

4.3.06 Halfway Bridge at Huleia Stream

The stream was visited and both the old and new bridge structures are present (Figure 14). This major stream is a water of the U.S. and will need to

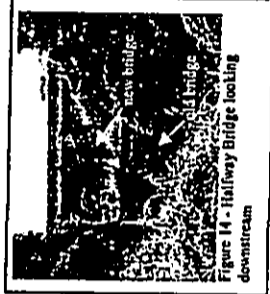


Figure 14 - Halfway Bridge looking downstream.

be bridged if the road surface elevation is to be similar to the existing road.

4.3.07 Huleia Stream to Halenahua Stream (Culverts #17-#20)

Drainage ditches are spread through this section to move water across the highway from one fallow cane field to another. Guinea grass (*Panicum maximum*) was abundant in these ditches. All of the pipes are 24 inches in diameter and most of the ditches contained no water upstream or downstream of the highway. Culvert #20 was the exception with an agricultural field above (Figure 15) and an intermittent stream below (Figure 16). The downstream end of culvert #20 is the only waters of the U.S. in this section of Kaunuaui Highway.

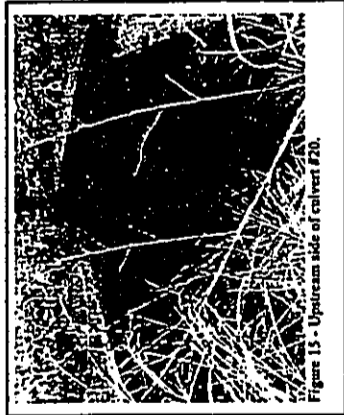


Figure 15 - Upstream side of culvert #20.



Figure 16 - Downstream side of culvert #20.

4.3.08 Halenahua Stream (Culvert #21)

The Halenahua Reservoir regulates the water flow in this stream. Flashboards control the water exiting the reservoir (Figure 17). At least 30 feet of fill has been placed to construct the road. Double 8x8 box culverts carry the flow beneath the road. Ginger, heliconia, mango, and other planted or escaped crops are found at the bottom and banks of the stream. Although Halenahua Stream is part of an established irrigation system, it also appears to be a natural stream and it is highly probable that the reservoir itself was created within an established stream system. Thus Halenahua Stream is considered a water of the U.S.



Figure 17 - Flashboards at outlet of Halenahua reservoir control water in Halenahua Stream.

4.3.09 Halenahua Stream to Hawaiian Humane Society (Culverts #22-27)

Six 24-inch diameter culverts can be found in this stretch of Kaunuaui Highway that has fallow cane fields on both sides (Figure 18). Similar to the Huleia to Halenahua Stream section, these drainage culverts are not considered waters of the U.S.



Figure 18 - Typical field upstream of culverts #22-27.

4.3.10 Hawaiian Humane Society to Lihue side of Kipu Road (Culvert #28, 30-32)

These culverts are part of an operating irrigation system controlled by flashboards. The flashboards can be adjusted parallel and perpendicular to the ditches to allow water to allow water to be siphoned off of the main system (Figure 19). These irrigation ditches are not considered waters of the U.S.



Figure 19 - Typical irrigation ditch with flashboards installed and at overflow.

4.3.11 Hainakaunahua Stream (Culvert #34)

Hainakaunahua Stream crosses Kaunuaui Highway through culvert #34 at the low spot in the highway fronting Brewer Environmental Company (Figure 20). We did not visit the culverts on either side due to the heavy vegetation and steep slopes. On the upstream end of this culvert, trees vegetate its steep slopes. Water was flowing, as wide as 25 feet across with typical depths of 6-12 inches.



Figure 20 - Downstream of culvert #34 looking towards Brewer Environmental Co.

Downstream of the culvert, *Macaranga tanaritis*, California grass, and castor bean choke the waterway. Several hundred feet downstream of the culvert and prior to reaching the Brewer buildings, the stream takes a bend and flows parallel to the highway. Hainakaunahua Stream is considered a water of the U.S.

4.3.12 Puhi Stream (Culvert #35b)

Lower portions of the west fork was planted in banana, eggplant and other crops (Figure 21). Fencing and large dogs prevented us from looking for the culvert and limited our

access to the view from above. A sprinkler system was seen at the low point closest to the highway. This area did not look like it contained wetland vegetation. This could be due to excellent drainage conditions provided by the large 4 x 6 earthen tunnel which was observed from the downstream side.



Figure 21 - Puhi Stream, west fork

In contrast, the east fork had a gently flowing stream with its outflow controlled by a 2-foot-wide by 4-foot-high culvert beneath Kaunualii Highway. This is likely to be inadequate in times of high flow but the road is at least 25 feet higher than the culvert invert elevation and there is substantial area where water can be stored. The low outflow probably contributes to the wetland conditions along the banks of this stream. Water appeared to be permanent in this fork as upstream the drainage headed mauka before making a sharp turn towards Lihue. Bulrush, Job's tears, elephant grass, California grass and honohono were found in the stream bed.



Figure 22 - Puhi Stream, east fork, upstream of highway.

The stream bed sloped upwards and had a bench which contained banana (*Musa x paradisiaca*), white shrimp plant (*Justicia betonica*), castor bean and California grass. Purple allamanda (*Thunbergia laurifolia*) and *koali'awa* (*Pomoea indica*) covered much of the bananas (Figure 22). A gradual slope increase was noted and continued until a second bench was noted. For further description of the area see the description of wetland 4 in Chapter 3.

Downstream of the highway, the two forks merge into one drainage dominated by a heavy thicket of hau. It was determined that this area contained a stream and a wetland, both of which are waters of the U.S. and subject to regulation under Section 404 of the Clean Water Act.



Figure 23 - Upstream side of culvert #37.

4.3.13 Culvert #37 Connecting Puhi Stream Between Reservoirs

On the Koloa side of Puhi Road and the Grove Farm offices, Puhi Stream crosses beneath Koloa Highway through culvert #37. The drainage way connects two reservoirs in series upstream and one reservoir downstream of this culvert. This culvert carries a 10-15 foot wide perennial stream across Kaunualii Highway towards Nawiliwili (Figure 23). The culvert inverts are estimated to be 15-20 feet below the road. Plants in the area include bamboo, banana, hau and *Macaranga tanarius*. Similar to the situation at Halenahau

Stream, this is an agricultural ditch connecting two reservoirs that may all be part of a natural stream system. Because of this situation, it was determined that this waterway is a water of the U.S., subject to regulation under Section 404 of the Clean Water Act.



Figure 24 - Ditch at Kilohana Museum entrance road looking downstream at culvert #41

4.3.14 Kauai Community College to Kilohana Museum (Culverts #39-41)

Culverts #39 and #40 drains the grass area fronting Kauai Community College. Culvert #41 drains the roadway in the Kilohana Museum area (Figure 24). There was no water upstream or downstream of the culverts and these are not waters of the U.S.

4.3.15 Taco Bell to Lihue Cemetery (Culverts #43-45)

Culvert #43 is a drain inlet between Burger King and Taco Bell. The inlet services just the highway area and not the adjacent shopping center parking lot. Culverts #44 and #45 convey road drainage as well. At the time of the visit, no water was observed upstream or downstream of the culverts and none of the three drainage culverts are considered waters of the U.S.

4.3.16 Nawiliwili Stream

During the week of the field survey, a new drainage structure was being constructed over a tributary of Nawiliwili Stream at Kaunualii Highway just below the intersection with Rice Street. A portion of the traffic was diverted at Hardy Street through other streets and returning to the highway near the shopping center at Nawiliwili Road. Work in tributaries of Nawiliwili Stream was authorized by Department of the Army permit number 990000207.



Figure 25 - Nawiliwili Stream looking upstream from Lihue

Downstream of that project, the two-lane Lihue Mill Bridge crosses Nawiliwili Stream west of Hoomana Road (figure 25, look for Hawaii Visitor Bureau sign to Lihue Lutheran Church). This is a water of the U.S.

Chapter 5 - Summary and Conclusions

5.1 Summary of Findings on Wetlands

Two of the four wetlands identified on the construction were delineated. The two wetlands were too big geographically to economically survey the entire boundary. However, false color infrared photos were digitized to get an approximation of wetland size.

Wetland 2 contained 5.6 acres of wetlands of which 2.0 acres was dominated by hau, and 3.6 acres consisted of the California grass/fern plant community. The wetland is part of a tributary to Weowepilau Stream. The wetland functions and values identified for this wetland are soil stabilization, water filtration, habitat for nonnative aquatic species, ground water recharge, nutrient uptake, and pig habitat.

Wetland 4 contained 9,700 square feet of wetlands within 125 feet of Kaunualii Highway. The functions and values of this wetland are the same as wetland 2 with greater potential for flood storage and ground water recharge.

The proposed road alignments will need to be overlaid on the wetland maps to determine the proposed amount of wetland impacts.

5.2 Waters of the U.S. Other Than Wetlands

A total of 44 drainageways were checked of which there were 8 perennial streams, 0.5 intermittent streams (culvert 20 was an agricultural drainage upstream and an intermittent stream downstream), 14.5 agricultural drainage systems, 9 road drainage systems, 5 other drainage systems, and 7 irrigation systems. A total of 10 waterways (not including wetlands) were found to be waters of the U.S. as shown in figure 8. A pond was also determined to be a water of the U.S.

5.3 Recommendations to Avoid or Minimize Wetland Impacts

Improvements to Kaunualii Highway could avoid Wetland 2 by using the existing cane haul road and bypassing the present intersection with Maluhia Road. Culverts or bridges would be required to ensure continued flow which is likely to affect the hydrology to Wetland 1a and to Wetland 2.

Based on the mapping information, ParEn was able to modify the alternative that would widen Kaunualii Highway along the entire project limits by alternating the widening between the mauka and makai sides so that both Wetland 2 and the Maluhia Road tree tunnel (including Wetlands 1A and 1B) would be avoided while still maintaining design standards.

This new alternative would eliminate the need to consider the alternative that would realign the highway from Knudsen Gap to the west end because the modified alternative accomplishes the same objectives without the need to use an entirely new corridor.

To minimize impacts to waterways and wetlands, crossings should be bridged where possible and cost effective. Another method of reducing the footprint of fills in wetlands is to use vertical retaining walls in lieu of unrestrained compacted fill.

To minimize impacts to wetland functions, it is recommended that:

- Existing crossings be maintained or replaced.
- If the tree tunnel bypass is used, drainage systems should be provided to maintain overland flow towards wetland 2.
- Best Management Practices include provisions to revegetate exposed soils as soon as possible after construction.
- Silt fences, sediment traps and/or other soil containment devices should be constructed and maintained during construction to minimize sedimentation of wetlands and other waters of the U.S.
- A vegetated buffer zone between the highway and wetlands be considered in the design phase.

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Appendices are not included. They can be reviewed at the State of Hawaii Department of Transportation, Highway Division, Kaula District office.



APPENDIX G

Avifaunal and Feral Mammal Survey Report

AVIFAUNAL AND FERAL MAMMAL SURVEY FOR KAUNUALII HIGHWAY
IMPROVEMENTS - HH 0.0 TO 7.5, KAUAI

INTRODUCTION

The purpose of this report is to summarize the findings of a bird and mammal field survey for the proposed Kaunualii Highway Improvements Project HH 0.0 - 7.5, Kauai. Figure One and two shows the location of the survey. Also included in the report are references to pertinent literature and unpublished reports.

Prepared for
Park Engineering
by

The objectives of the field survey were to:

- 1- Document what bird and mammal species occur on the property or may likely occur given the available habitats and limitations imposed by predators and disturbance.
- 2- Provide current baseline information on the relative abundance of each species.
- 3- Note the presence or likely occurrence of any native fauna particularly any that are considered "Endangered" or "Threatened".
- 4- Focus the field survey work primarily on wetland habitats located along the section of the highway proposed for improvements.

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24 April 1998

GENERAL SITE DESCRIPTION

Kaunuaʻii Highway from Koomana Road Bridge to Bridge 7E (Fig. 1.2) passes through agricultural and developed lands. The highway crosses several small streams along this course. These areas contain small wetland habitats. The majority of the lands adjoining the highway contain disturbed second growth vegetation. Some edges of the highway were recently scraped and paved an additional three feet.

METHODS

The survey was conducted on 15, 16 April 1998. Both sides of the highway were examined with the majority of the field effort devoted to stream crossings and other wetland habitats. Field observations were made with binoculars and by listening for vocalizations. These observations were concentrated during the peak bird and mammal activity periods of early morning and late afternoon/dusk. Attention was also paid to the presence of tracks, scats, and ground disturbance as indicators of bird and mammal activity.

All species of birds and mammals seen or heard were noted. Published and unpublished resources were also consulted (Hawaii Audubon Society 1993; Bruner 1992; Pratt et al. 1987). No attempts were made to trap mammals in order to obtain data on their relative

abundance and distribution. An effort of this magnitude was considered unnecessary for the purpose of this survey.

Scientific names used in this report follow those given in Pyle (1997) and Honacki et al. (1982). Weather during the survey was generally clear with strong tradewinds.

RESULTS AND DISCUSSION

Native Land Birds:

No native land bird species were recorded. The Short-eared Owl or Pueo (Asio Flammeus) forages in open habitat and forest. This species is listed as endangered on Oahu by the State of Hawaii but not elsewhere in the State. Pueo nest on the ground in grassland habitat. They forage during the day generally in early morning and late afternoon. The introduced Barn Owl (Tyto alba) is often mistaken for Pueo by those unfamiliar with the diagnostic characteristics of each species. Barn Owls forage at night and nest in tree cavities or buildings rather than on the ground (Hawaii Audubon Society 1993). Other than Pueo, no native land birds would be expected in the immediate area of the proposed project. Native land birds are confined to higher elevation forested habitat on Kauai.

Native Waterbirds:

Five species of native waterbirds occur on Kauai: Black-crowned Night Heron (Nycticorax nycticorax); Black-necked Stilt (Himantopus



mexicanus); Common Moorhen (Callinula chloropus); Hawaiian Coot (Fulica alai) and Hawaiian Duck or Koloa (Anas wyvilliana). The latter four species are federally and state listed as endangered in Hawaii. Recently the endangered Nene or Hawaiian Goose (Neochen sandwicensis) was reintroduced to Kauai. This bird is not confined to wetlands but utilizes a variety of habitats. None of these species were observed during the course of this survey. An earlier study of the Huleia stream drainage (Bruner 1992) found Koloa, Hawaiian Coot, Common Moorhen and Black-crowned Night Heron.

Migratory Birds:

Migratory shorebirds breed in the arctic and winter in Hawaii. The Pacific Golden-Plover (Pluvialis fulva) is the most abundant migratory shorebird in Hawaii (Hawaii Audubon Society 1993). They forage on lawns, pastures, and fields as well as along shorelines. Extensive research on this species, both in Hawaii and Alaska, has yielded much information on their life history (Johnson et al. 1981, 1989, 1993). Twenty one plover were seen on the survey. They were either foraging along the roadside or on lawns at and around Kauai Community College. Plover are not threatened or endangered. Wandering Tattler (Heteroscelus incanus) is another common migrant that forages along shorelines but also utilizes streams and can be found in the interior of islands. None were recorded on this survey but this species

has been recorded along Huleia Stream (Bruner 1992). Ruddy Turnstone (Arenaria interpres) can occasionally be seen on large lawns along with Pacific Golden-Plover. They forage in small flocks. None were recorded on this survey.

Introduced Birds:

A total of 15 species of non-native (introduced) birds were recorded on the survey. Table One gives the names of these species. None of these species are threatened or endangered. Two species, Greater Heblaced Laughing-thrush (Garrulax pectoralis) and Western Meadowlark (Sturnella neglecta), are restricted in Hawaii to the island of Kauai. Most introduced species expected in this area and habitat were observed. Pratt et al. (1987) and Hawaii Audubon Society (1993) provide additional information on introduced birds in Hawaii.

Feral Mammals:

Feral cats (Felix catus), and tracks of feral pigs (Sus scrofa) were the only mammals recorded on the survey. The native endangered Hawaiian Hoary Bat (Lasiurus cinereus semotus) is fairly common on Kauai (Tomich 1986; Kepler and Scott 1990). They forage in a wide variety of habitats from forest to urban. None were recorded on this survey although they could roost and forage in this area.

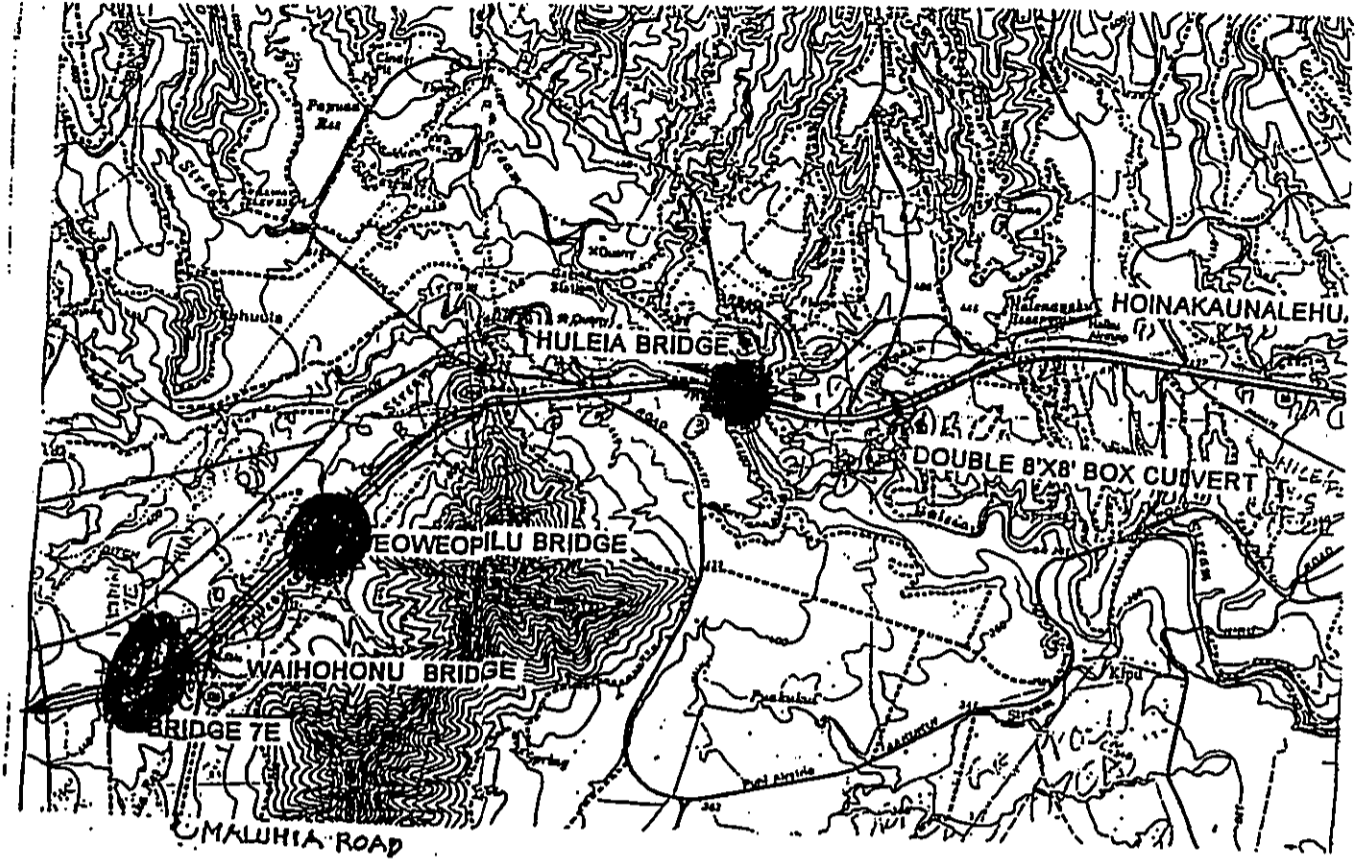
CONCLUSION

The habitat along the section of proposed Kaunalihi Highway Improvements contains predominantly introduced plants and animals. No native land birds nor waterbirds were recorded. The only migratory species was the Pacific Golden-Plover, the most abundant winter migrant in Hawaii. The introduced species of birds found on the survey were those typical of this region. Feral mammals were limited to common introduced species. Pig tracks were seen near Huleia Bridge. The native and endangered Hawaiian Hoary Bat was not found on the survey but could occur in this area. They are widespread and fairly common on Kauai.

The stream crossings and other wetland areas noted on Fig. 1 and 2 were carefully examined but contained no native waterbirds. Most of these sites are presently too overgrown with vegetation to support waterbirds. However, Huleia Stream is the exception. Earlier investigations found waterbirds along this stream drainage. Kaunalihi Highway crosses Huleia Stream with a relatively new and large bridge. The bridge is several meters above the stream. Vehicle access to the area below the bridge limits the use of this area by waterbirds. There was evidence of human activity in and adjoining the stream at this location.

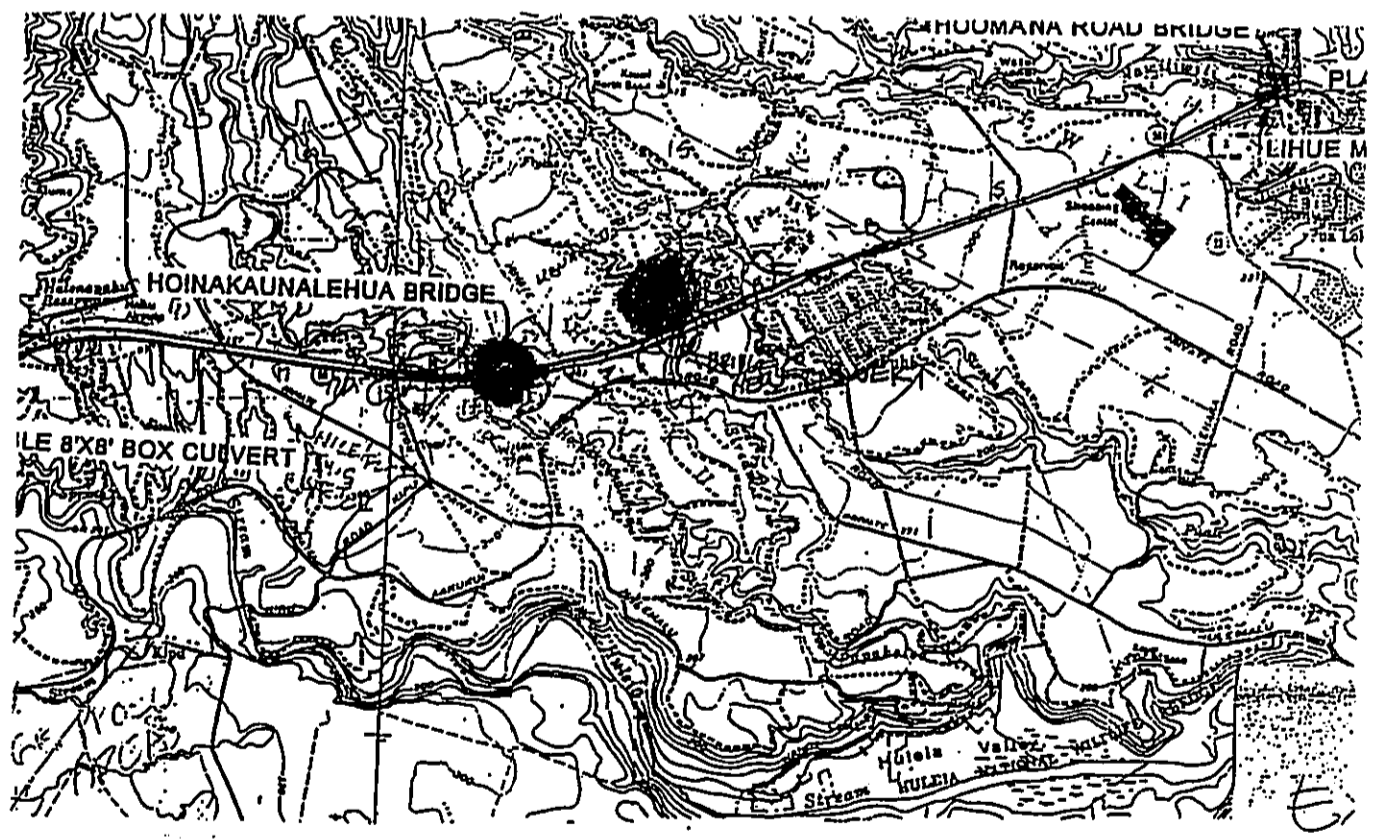
The proposed plans for improvements to Kaunalihi Highway in the area covered by this survey should have no significant impact on

native birds. The only note of caution would be to minimize siltation of the streams during construction.



-9-

Fig. 2. Location of faunal survey. Large darkened areas contain wetland habitat.



-8-

Fig. 1. Location of faunal survey. Large darkened areas contain wetland habitat.

TABLE 1

Introduced birds recorded on the Kaunuaui Highway Improvement Project. (15, 16 April 1998).

COMMON NAME	SCIENTIFIC NAME
Red Junglefowl	<u>Gallus gallus</u>
Cattle Egret	<u>Bubulcus ibis</u>
Spotted Dove	<u>Streptopelia chinensis</u>
Zebra Dove	<u>Geopelia striata</u>
Japanese Bush-warbler	<u>Cettia diphone</u>
Iwamei	<u>Garrulax canorus</u>
Greater Necklaced Laughing-thrush	<u>Garrulax pectoralis</u>
Common Myna	<u>Acridotheres tristis</u>
Western Meadowlark	<u>Sturnella neglecta</u>
Japanese White-eye	<u>Zosterops japonicus</u>
Northern Cardinal	<u>Cardinalis cardinalis</u>
House Finch	<u>Carpodacus mexicanus</u>
Chestnut Mannikin	<u>Lonchura malacca</u>
Nutmeg Mannikin	<u>Lonchura punctulata</u>
House Sparrow	<u>Passer domesticus</u>

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APPENDIX H

Aquatic Species Survey and Biological Assessment Report



Final Report

Aquatic Species Survey and Biological Assessment of Lihue, Kauai Streams Intersected by Kaunani Highway, Lihue to West of Maluhia Road (Koloa)

**Michael H. Kido
Aquatic Biologist**

January 4, 1999

**Study For
Park Engineering, Inc.**

Kauai-Environmental Studies Project No. 50DE-02-95

Executive Summary

Aquatic Species Survey and Biological Assessment of Lihue, Kauai Streams Intersected by Kaunualii Highway, Lihue to West of Maluhia Road (Koloa)

This study was conducted for Park Engineering, Inc., to address concerns raised by the U.S. Fish and Wildlife Service (USFWS) about possible negative impacts on populations of native stream species resulting from improvements to Kaunualii Highway proposed by the State Department of Transportation (DOT) between Lihue west to Maluhia Road (Koloa) on Kauai. Three streams Puuli, Papakolea, and Huleia streams and their tributaries were found to intersect Kaunualii Highway within the specified project area and were surveyed for the presence of aquatic species. The survey found that these streams were physically and biologically degraded in the reaches where they intersected the highway. Nearly all of these locations exhibited excessive sedimentation and bank erosion. No native macrofaunal species were observed or collected in any of these locations and even alien species were present in very low abundances. Huleia Stream at the Halfway Bridge site exhibited the highest quality among those studied; yet, was only rated as being in "Very Poor" biotic condition based upon application of the Hawaii Stream Bioassessment Protocol. Native 'o'opu and 'opae were found in very low numbers in stream segments several miles downstream of Kaunualii Highway which suggested that some low-level recruitment was occurring to these urban Lihue streams.

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BACKGROUND

This study was conducted for Park Engineering, Inc., to address concerns raised by the U.S. Fish and Wildlife Service (USFWS) about possible negative impacts on populations of native stream species resulting from improvements to Kaunualii Highway between Lihue west to Maluhia Road (Koloa). The USFWS is primarily interested in determining the extent to which native species are resident in streams intersecting the section of highway being improved. The study was therefore designed to: 1) develop a generalized "species list" for affected Lihue streams and; 2) assess overall stream biological quality in those streams that appeared to have at least moderate physical quality based upon preliminary reconnaissance.

Four streams (Nawiliwili, Puuli, Papakolea, and Huleia) are found in the Lihue area (Fig. 1 and 2) and of these, only Puuli, Papakolea, and Huleia streams were within the specified project area. According to the US Geological Survey topographic map (Lihue Quadrangle), Puuli Stream has two tributaries which were cut off historically from their natural headwaters and today are connected to reservoirs on the east and west sides

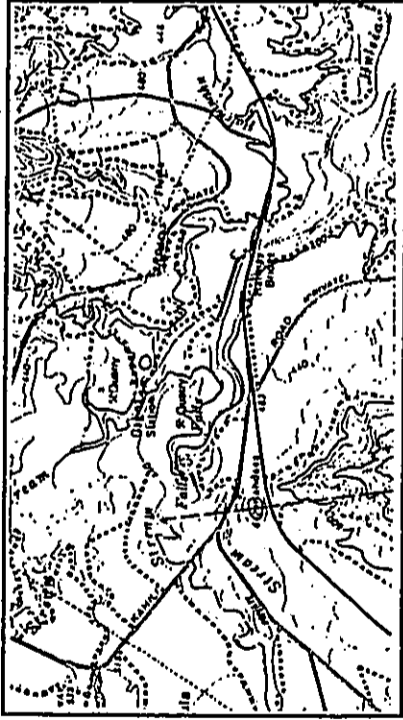


Figure 1. USGS Topographic Map of Huleia Stream at Halfway Bridge.

of Puhi town makai of the highway (Fig. 2). Along Kaunualii Highway, Papakolea Stream lies approximately one mile west of Puuli Stream and has two tributaries (Hainakaulaehua and Puhi) which converge at about 200 ft elevation about one mile makai of the highway (Fig. 2). Puuli's two tributaries intersect Kaunualii Highway at about 300 ft elevation (Fig. 2). Huleia Stream passes under Halfway Bridge about 2.25 miles west of Papakolea Stream along the highway at 400 ft. elevation (Fig. 1). Three major tributaries (Kuia, Paohia, and Kamooloa) join just mauka of Halfway Bridge to form Huleia Stream. All of the study streams are interrupted and diverted by reservoirs and ditches in their upper reaches and all empty into Nawiliwili Bay via the lower reach

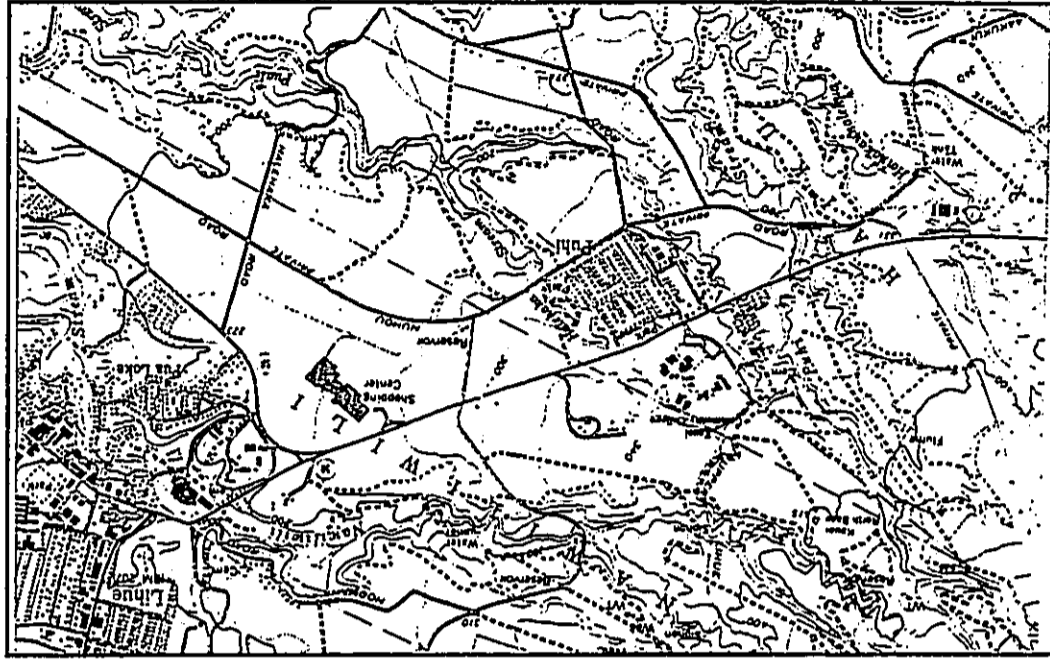


Figure 2. USGS Topographic Map of Puuli Stream and Tributaries of Papakolea Stream (Puuli and Hainakaulaehua).

of Huleia River which flows alongside Hauupu Ridge to the south and the Menehune (Alekoko) Fishpond to the North.

Previous Studies

A previous study I conducted of lower Huleia and Papakolea Streams (Kido 1995) for Wilson Okamoto & Associates and the Office of State Planning revealed significant native aquatic species presence in both streams. Two sites sampled in the survey were in the estuarine reaches of Huleia (Stone Bridge) and Papakolea (USFWS National Wildlife Refuge) several miles makai of Kaunualii Highway; however, one site was in a middle elevation site of Huleia Stream directly under Halfway Bridge. Eleven native aquatic species (five fish, three crustaceans, one snail, and two insects) were found in the survey. Alien species, however, such as tilapia and poeciliid fishes, dominated the aquatic fauna both in numbers and biomass. The most widely distributed native fish was the 'o'opu-*nakea* (*Awaous gularis*) which was found in all sites sampled but was most abundant in Huleia Stream at the Halfway Bridge site. Also of significance and pertinence to this study was the presence of native 'opae kala'ole (*Atyoida bistulcata*) which was common in the shallow riffles of Huleia Stream under and slightly downstream of the Halfway Bridge location. No native aquatic insect species were found in this portion of Huleia Stream; however, native *Scatella* sp. (Diptera: Ephydriidae) and *Campylorhynchus* sp. (Diptera: Dolichopodidae) were captured sweep-netting in the lower Papakolea Stream site.

One other relevant study (Kido unpublished) was conducted in August 1998 in lower Puuili Stream at about 128 ft elevation to evaluate the effectiveness of the Hawaii Stream Bioassessment Protocol (HSBP) described below. Application of the HSBP rated the site as exhibiting "Very Poor" biological condition as alien Tahitian prawns (*Macrobrachium* lar) and poeciliid fishes (Poeciliidae) dominated the aquatic community to the near exclusion of native species. The 'o'opu-*nakea*, however, was present in this site albeit at very low densities. The habitat metrics indicated poor habitat quality for native species because of severe sedimentation, some dewatering, moderate bank erosion, and human-induced impacts to the riparian areas.

Materials and Methods

Since the primary concern related to the project involved potential impacts related to the realignment construction of Kaunualii Highway, the surveys were focused where the streams intersected the highway. Visual reconnaissance was initially used to assess the overall condition of the study streams and to determine the appropriate methods for sampling. If the sampling sites were found to be sufficiently degraded to preclude underwater visual surveys, aquatic macrofauna were collected using electrofishing apparatus (Coffelt battery-powered electroshocker Model BP3). Fish and invertebrates collected were identified to lowest taxonomic category and released.

If normal boulder/cobble habitat were present, one of several methods would be used to sample invertebrates and algae depending upon site conditions. Odonates

(dragonflies and damselflies) present would be identified in flight and adult aquatic Diptera (flies) collected using a sweep net. Insect immatures, other aquatic invertebrates, algae, or mosses observed would be handpicked or scraped off exposed and submerged boulders and cobbles. Density estimates (biomass g/sq m) would be obtained for invertebrates and algae using a Surber net (0.09 sq m area) and randomly selected cobble (estimated surface area) as described in Kido (1997a).

Evaluations of stream habitat and biological quality at study sites on a scale from "Excellent" to "Very Poor", while not absolutely required for the purposes of this study, would none-the-less provide valuable information useful in evaluating impact or change in condition over time. The Hawaii Stream Bioassessment Protocol (HSBP) (Kido and Smith, 1998) was developed especially for this purpose and therefore would be used in this study when possible. The HSBP is a "first generation" methodology for assessment and monitoring of Hawaiian streams utilizing a standardized "multimetric" approach. The HSBP evaluates both habitat quality as well as biological quality of the study stream reach. Protocols which involve underwater visual observation score ten "metrics" (or measures) in the native macrofaunal population which provide ecological insight from the individual, population, and community levels of organization. The raw data is used to then calculate the Hawaii Stream Index of Biotic Integrity (HS-IBI) which rates biological quality in comparison to reference Hawaiian stream conditions (Table 1). Flow data estimation for comparisons of stream size are included in the HSBP and follow USGS standard protocols adapted for application with a Swiffer flow meter and top-setting wading rod.

Table 1. The Hawaii Stream Index of Biological Integrity, (Kido and Smith, 1998).

HS-IBI Score as % of Reference	Integrity Class	Attributes
90 - 100 %	Excellent	Comparable to the most "pristine" conditions without human disturbance; native macrofauna dominate aquatic community; robust 'o'opu population including sensitive 'o'opu species.
80 - 90 %	Good	Alien species more common but all expected native macrofauna present; natives comprise at least 75 % of population in proportionate abundance; sensitive 'o'opu densities and/or size classes may be somewhat below expectations.
70 - 80 %	Fair	Alien species may comprise 50 % of population in proportionate abundance but all expected native macrofauna present; sensitive 'o'opu densities and size classes below expectations.
60 - 70 %	Poor	Alien species dominate aquatic community and include poeciliid fishes; most native macrofauna absent including sensitive 'o'opu species; 'o'opu- <i>nakea</i> may be present but densities very low and individuals small.
< 60 %	Very Poor	Only alien species present including poeciliids and/or tilapia.

Results and Discussion
General Observations

The surveys for this study were conducted from 12/10/98 to 12/13/98 and from 12/19/98 to 12/20/98. All of the stream sites examined along Kaunualii Highway between Lihue town and Halfway Bridge were found to be severely degraded both physically as well as biologically. Aside from Huleia stream, all of the streams at the level of the highway had little or no water flowing in their natural channels and most were so overgrown with invasive vegetation that the stream channels were not visible from the level of the highway. No native aquatic species were found in any of the Kaunualii Highway intersections except for a native shore fly (Ephydriidae: *Sciella cilipes*) collected in Huleia Stream at the Halfway Bridge site (Table 2).

Table 2. Aquatic species observed or collected in Huleia (Hu), Puali (Pu), and Papakolen (Pa) streams and/or their tributaries: * or ** indicate native species all others are alien. Species (* = Indigenous; ** = Endemic)

Species	Stream
Fishes - Gobiidae	
<i>Awaous guamensis</i> (' <i>o'opu-naketa</i>)*	Pu
<i>Sicyopterus japonicus</i> (' <i>o'opu-nopili</i>)**	Pu
Poeciliidae	
<i>Poecilia reticulata</i> (guppy)	Pu, Pa
<i>Xiphophorus helleri</i> (swordtail)	Pu
<i>Gambusia affinis</i> (mcdaka - mosquitofish)	Pa
<i>Micropterus dolomieu</i> (Centrarchidae: smallmouth bass)	Hu, Pu
Invertebrates	
Insecta - Diptera (flies)	
<i>Cricotopus bicinctus</i> (Chironomidae) (midge)	Hu, Pu
<i>Limonia uahena</i> (Tipulidae) (crane fly)	Hu, Pu
<i>Heimerobromia stellaris</i> (Empididae)	Pu
<i>Sciella cilipes</i> (Ephydriidae) (shore fly) **	Hu
<i>Odonata - Anax strenuus</i> (dragonfly) **	Pa
<i>Ischnura pumilio</i> (damselfly)	Pa
Tricoptera - Hydropsyche petiti (caddisfly)	Hu, Pu
<i>Chironomus tentans</i> (caddisfly)	Hu, Pu
Crustacea - Atya hawaiiensis (Athyidae: ' <i>o'opu-kalalele</i>)**	Pa
<i>Procambarus clarkii</i> (Decapoda: crayfish)	Pu, Pa
<i>Ancistradarius lar</i> (Palaeomonidae: Tahitian prawn)	Pu, Pa
Mollusca - Turbellaria granifera (Gastropoda: Thiaridae)	Hu
<i>Arbacia fluminea</i> (Pelecypoda: Conivalidae)	Hu, Pu, Pa
Algae	
Chlorophyta (green algae) - <i>Chlorella</i> sp.	Hu, Pu
<i>Chlorella</i> sp.	Pu
Cyanophyta (blue-green algae) - <i>Phormidium retzii</i>	Hu
<i>Chlorella</i> sp.	Hu
Chrysophyta (diatoms) - <i>Hydroneis</i> sp.	Pu
Rhodophyta (red algae) - <i>Gracilaria</i> sp.	Pu

Site Surveys at Stream Intersections Along Kaunualii Highway
Puali Stream

At the elevation of the highway, Puali Stream was found to be highly diverted by irrigation ditches and reservoirs used for sugarcane cultivation in the area. A series of reservoirs interrupts Puali's normal drainage pattern which makes possible the shunting of water to irrigate fields either west or east of Puali town. During the survey, most of the water to Puali was flowing under Kaunualii Highway into an irrigation ditch just west of Puali town (Fig. 3). The ditch passed through a culvert under the highway and flowed towards the Puali Industrial Area. The channel was filled with fine silt and normal cobble/boulder substrate was entirely absent. Electrofishing a short segment of ditch produced only guppies (*Poecilia reticulata*) and crayfish (*Procambarus clarkii*) (Table 2). No invertebrates were observed or collected in the modified stream. From the highway intersection the ditch carried water south across Puali Road towards Nawiliwili and from there emptied into a canefield south of Nuihou Road.

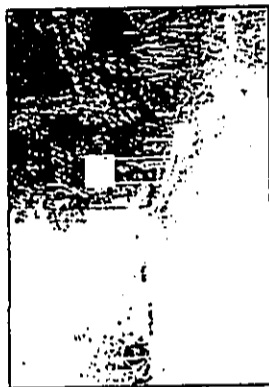


Figure 3. Puali Stream at Kaunualii Hwy.

Papakolen Stream

Like Puali, the two tributaries that form Papakolen Stream (Puali and Hainakaunalehua) were found to be both physically and biologically degraded. Puali Stream had very little flow in its channel above Kaunualii Highway where it passed through a small farming operation and subsequently through a culvert under the highway (Fig. 4). The stream channel at this point was overgrown by an impenetrable stand of *Leucaena* (*Hibiscus tiliaceus*) which made sampling impossible (Fig. 4). Puali stream then flowed south through a deep ravine eventually being interrupted by a reservoir about 0.5 mi from the highway. No aquatic organisms were observed or collected in the flowing segment of Puali Stream just mauka of the highway.



Figure 4. Puali Stream at Kaunualii Hwy.

Hainakaunalehua Stream passed under Kaunualii Highway about 0.5 mi west of Puali Stream directly in front of the Brewer Environmental Inc. warehouse complex (Fig. 5). Much of the highway the stream passed through another culvert and flowed in a southwesterly direction around the warehouse complex. Like Puali, Hainakaunalehua Stream was severely degraded in this segment. I was able to sample the stream channel



Figure 5. Hainikaunalehua Stream at Hwy.

Papakolen Stream proper was sampled below the confluence of its tributaries at an elevation of about 160 ft where it passed under Haiku Road. Flow in the channel was substantially higher than that observed in its tributaries. The stream bottom was highly sedimented with a very deep layer of mud on its surface (Fig. 6). The stream was entirely surrounded by alien vegetation in its riparian zone and its banks were eroded along most of the reach surveyed. Despite the degraded physical conditions, the native shrimp *Opae-kalaole* (*Atyaidea bisulcata*) was captured while electrofishing the reach. Also captured were the alien crayfish, *Procambarus clarkii*, and Tahitian prawn

just adjacent to the warehouse complex and found the bottom to be pure mud. Both banks were highly eroded with spotty riparian vegetation on either side. Only *Puccinia reticulata* was captured electrofishing this reach and shells of the alien bivalve mollusk *Corbicula fluminea* were common on the stream bottom. No adult insect or other invertebrates were observed or collected in this location.



Figure 6. Papakolen Stream.



Figure 7. Huleia Halfway Bridge. Only one cascade/riffle existed within the 100 m long study site. The natural rocky banks

(*Macrobryconia lur*). The only fish collected was the alien poeciliid, *Gambusia affinis* (medaka or mosquitofish).

Huleia Stream

Huleia was the largest of the Lihue streams surveyed in this study having a measured flow of 9.04 cubic feet sec⁻¹ at the Halfway Bridge site (Fig. 7). This flow was about eight times greater than that measured in the 1995 survey performed for State OSP (Table 3). The stream channel was filled to bankfull with fast flowing water creating a nearly homogenous habitat with very little variation. Only one cascade/riffle existed within the 100 m long study site. The natural rocky banks

of the stream were obscured by thick growths of weedy alien grasses and sedges (Fig. 7) and found to be highly disturbed inland by fern pigs.

Table 3. Comparisons of flow characteristics measured in Huleia Stream (Halfway Bridge Site - 1995/1998) and Puuli Stream.

Parameters	Huleia Stream		Puuli Stream
	1995 Study	1998 Study	
Site Elevation	79,000	79,000	49,000
Stream width (m)	2.150	7.700	0.800
Cross sec. Area (m ²)	0.152	2.788	0.160
Mean Depth (m)	0.067	0.362	0.199
Wet Perimeter (m)	2.139	8.099	1.126
Hydraulic Radius	0.065	0.344	0.141
Flow (m ³ /sec)	0.030	0.840	0.060
Mean Flow (m/s)	0.197	0.301	0.378

Higher flows and better water quality made it possible to perform a standard bioassessment using the HSBP (Kido and Smith, 1998) the results of which are detailed below. None of the native macrofauna (ie. the *Opae-naker* and *Opae-kalaole*) previously observed and/or collected at the site were observed (Table 2). Their absence may be explained by the dominant presence of the aggressive generalist predator, smallmouth bass (*A. triostegus dolomieu*), throughout the study area. The only invertebrates observed in the deeper stream areas during the underwater visual bioassessment were the alien bivalve, *Corbicula fluminea*, and the alien gastropod, *Tarebia granifera* (Table 2).

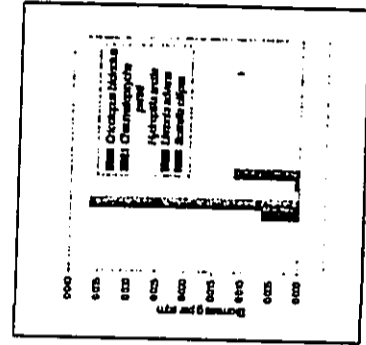


Figure 8. Invertebrate densities in Huleia. This was the only location in streams area where native aquatic insects were found. All of these invertebrates are known to be foods for native *Opae-naker* (*Auroras guineensis*).

Benthic (bottom) sampling focused in the single riffle/cascade habitat in the study site revealed that alien species dominated the aquatic insect fauna. Alien swift-water caddisflies (*Chironomus tentans*) were the dominant insects in overall biomass in the site while alien midges (*Chironomus bicolor*) were the most numerically abundant, but accounted for relatively little biomass because of their small size (Fig. 8). Adult individuals of the endemic shorefly, *Scutella cilipes* (Ephydriidae), were notably collected sweep netting the riffle white larvae and pupae were collected off stream rocks (Fig. 8). This was the only location in streams along Kaunualii Highway in the project

Three species of filamentous algae were collected off rocks in the riffle habitat. The most abundant species present was an *Oscillatoria* sp. (Cyanophyta) which had a sprawling matted form (Fig. 9). A green alga, *Chlorella* sp. (Chlorophyta), was also relatively abundant in the riffle (Fig. 9). This branching green alga is known to be a food of native *‘i‘iwi*-*inakea*. Pennate diatoms were also found to be fairly common in the riffle; however, species diversity was low being a near monoculture of *Fragilaria* sp.. Pennate diatoms are known to be important foods to herbivorous native *‘i‘iwi*-*inakea*.

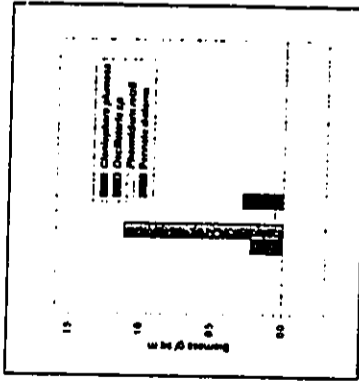


Figure 9. Algal densities in Huleia Stream.

The benthic collections of invertebrates and algae in the study reach of Huleia Stream at the Halfway Bridge site suggest that food for native *‘i‘iwi* were present in at least the one riffle contributing to the absence of native aquatic species.

Bioassessment Results

Two "diveable" sites were chosen to apply the Hawaiian Stream Bioassessment Protocol for comparisons of habitat quality and biotic integrity. The first was in Huleia Stream at the Halfway Bridge site and the second was on Puuli Stream at 128 ft elevation about 1.75 mi south of Kaunuaia Highway.

The assessment indicated "very poor" biotic quality with Huleia and Puuli Streams having HIS-IBI scores of 0.40 and 0.20 respectively (Fig. 10). The higher HIS-IBI score for Puuli resulted from the presence of native *‘i‘iwi*-*inakea* and *‘i‘iwi*-*inakea* in the site albeit in extremely low densities. The total absence of native macrofaunal species

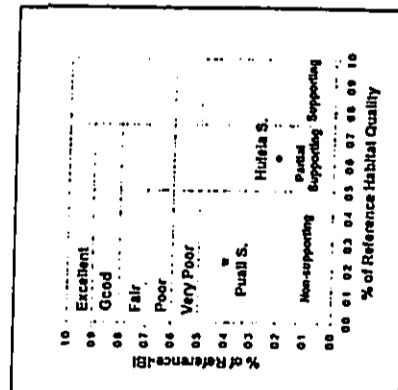


Figure 10. HIS-IBI results for Huleia/Puuli.

combined with the dominance of predatory smallmouth bass were primarily responsible for the very low HIS-IBI scores for Huleia Stream at the Halfway Bridge site.

Habitat quality, however, scored higher in Huleia as compared to Puuli Stream (0.625 vs 0.225 respectively) (Fig. 10). The stream bottom in Puuli was found to be highly sedimented with very little normal boulder/cobble substrate present. Sedimentation appeared to be chronic, occurring over a very long period of time as the mud had solidified into clay on the stream bottom. Huleia, on the other hand, did not exhibit excessive sedimentation and boulder/cobble substrate was present; however, very high water levels completely submerged all substrate removing normal heterogeneous flow regimes and micro-habitat. This was not the condition of the stream observed in 1995. Despite the high water levels, the habitat quality metrics indicated that "partial supporting" habitat for native macrofaunal species was present (Fig. 10); therefore, the absence of natives was likely due, to a greater degree, to the dominant presence of predatory smallmouth bass in the reach.

General Conclusions

In this study, Huleia was determined to be the highest quality stream among the five that intersected Kaunuaia Highway in the project area and even then, was rated as exhibiting "Very Poor" biotic condition. The remaining streams were found to be severely degraded at the highway locations with no native species present and even very few alien species observed or collected. Nearly all of these locations exhibited excessive sedimentation and bank erosion. Native macrofaunal species were only found in stream segments several miles downstream of Kaunuaia Highway. The presence of natives in these lower segments at least, suggests that some limited, low-level recruitment is occurring into these urban Lihue streams despite the severely degraded conditions in many locations. The spatial and temporal extent, however, to which native aquatic macrofauna migrate into the upper reaches of the Lihue streams cannot be determined from the limited data generated in this study.

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APPENDIX I

Archaeological Assessment Report

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ARCHAEOLOGICAL ASSESSMENT
OF AN APPROXIMATELY 11.5 KILOMETER-LONG PORTION
OF THE KAUMUALI HIGHWAY CORRIDOR, THROUGH
NĀWILIWILI, HAIKŪ, AND KŌLOA AHUPUĀA,
ISLAND OF KAUAI

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Prepared for
PARK ENGINEERING

Cultural Surveys Hawaii
May 1998

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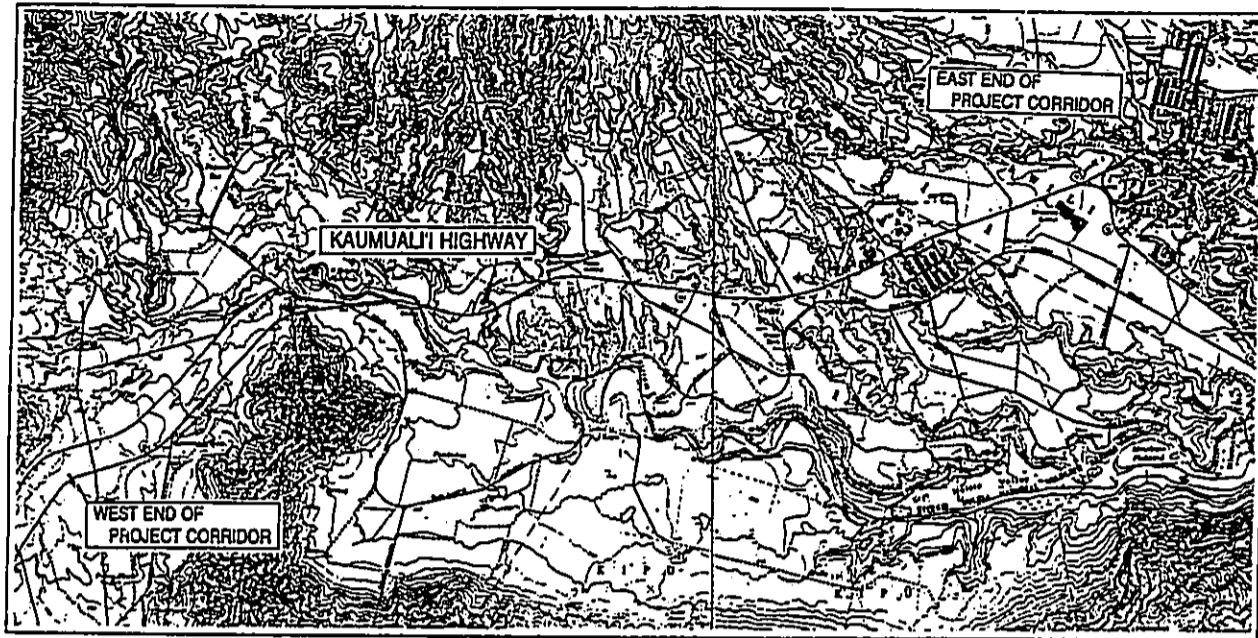


Figure 1 Portion of USGS 7.5 Minuta Series Topographical Map, Lihue and Koloa Quadrangles, showing Kaumuali'i Highway corridor project area

I. INTRODUCTION

A. Project Description

At the request of Park Engineering, Cultural Surveys Hawaii has conducted an archaeological assessment of a portion of the Kaumuali'i Highway on the island of Kauai (Figure 1). The portion of the highway under study is approximately 11.5 kilometers long, extending west from the Lihue Mill Bridge, through Puhii, and terminating approximately 1 kilometer west of Maluhia Road (to Koloa). This portion of the highway is proposed for widening.

B. Scope of Work

The scope of the work for the archaeological assessment is as follows:

1. Historic background research to include study of historic maps, archival documents, previous archaeological and historical studies, and other sources for the purpose of identifying existing and potential historic archaeological sites. This work will include references to sources on historic bridges, and the National and Hawaii State Registers of Historic Places on file at the State Historic Preservation Division of the Department of Land and Natural Resources. Knowledgeable members of the community will be consulted on specific issues related to historic structures and archaeologically sensitive areas.
2. Fieldwork will consist of an inspection and assessment of identified historic and archaeological sites and potential site areas. Present conditions of sites will be documented with descriptions and photographs.
3. Preparation of a report detailing the results of the historic research and fieldwork. This report will contain assessments of specific structures and sites with preliminary evaluations of impact and preliminary recommendations for mitigation.

C. Work Accomplished

Archaeological reconnaissance survey of the Kaumuali'i Highway project area was accomplished on March 24 and May 13, 1988.

Background research included: a review of previous archaeological studies on file at the State Historic Preservation Division of the Department of Land and Natural Resources; review of documents at the Kauai Historical Society, the Kauai Museum, Hamilton Library of the University of Hawaii, the Hawaii State Archives, the Mission Houses Museum Library, the Hawaii Public Library, and the Archives of the Bishop Museum; study of historic photographs at the Hawaii State Archives and the Archives of the Bishop Museum; and study of historic maps at the Survey Office of the Department of Land and Natural Resources.

II. KAUMUALII HIGHWAY CORRIDOR: CULTURAL AND HISTORICAL DOCUMENTATION

This section begins with a review of the available documentary evidence for the general character of the present Kaumualii Highway project area as it had evolved in the years before western contact in the later 18th century. The development of lands surrounding the highway corridor during the 19th century and into the early 20th century was recorded in increasingly abundant documentation - including government records, private accounts, newspapers, maps and photographs. Finally, during subsequent decades of the 20th century, abundant documentation allows a more precise focus on the Kaumualii Highway corridor and its environs.

A. Pre-Contact to 1800

There is one way through (the) thin mountain ridge (across central Kauai), a place where the barrier briefly parts. This lapse in the ridge is the way between east and west Kauai. It is called the Gap and travelers have used it since the beginning.

(Joesting 1984:216)

The route of the Kaumualii Highway runs through the "Gap" between Kahoaia and Puomoe, connecting Lihu'e to south and southwest Kauai. Portions of the highway corridor, especially near the Gap within the present project area, likely follow the alignment of the traditional trail system that joined east and west Kauai. The Gap itself was the subject of the traditional Kauai legends and premonitory tales, "for the clump of hau trees formerly near the bend of the mountains at the Gap was said to have been the hiding place of robbers and 'akua's' lurked in its hidden depths" (Rice 1991:53).

Further evidence that the Gap marked a well-known and well-travelled area of Kauai in pre-contact times was presented in testimonies by native Hawaiians during Commission of Boundaries sessions in the 1870s. These testimonies of the *kama'aina* recorded in the proceedings of the commission throughout the Hawaiian islands provided otherwise anonymous Hawaiians an unprecedented opportunity to display not only a comprehensive understanding, passed down through generations, of the contours of the *ahupua'a*, but, at the same time, allowed them to reveal local traditions, place names, no-longer-existing sites including *heiau* and settlements, areas where traditional activities were practiced, and historic events they had witnessed or participated in. Testifying on the boundaries of Koloa *ahupua'a* in 1874, Hupal stated: "The boundary of Kona and Puna (districts) was at Hoaea (i.e. above the Gap) that was where the battle flags were hung that was when the battles were fought" (Boundary Commission, Kauai, vol. 1; Hawaii State Archives).

East of the Gap, the present highway corridor crosses the Huleia River gulch, an area where traditional Hawaiian agricultural activities dating to pre-contact times have been noted:

The broad delta of the Huleia River is 1.5 miles long and a half mile wide, and is in the *ahupua'a* named Haiku, the next to last of the southeasterly valleys of Puna. This area was ideal for wet taro. Terraces continue upriver, and there were terraces up the streams that empty into the river. Old breadfruit and mango trees indicate that there were many Hawaiian *kuleana* up to 6 miles inland from the delta. (Handy and Handy 1972:427)

Traditional accounts give few clues to the exact routes of the trail system east of Gap, and no indication whether the present project area correlates to any pre-contact pathway.

B. 1800 to 1850

The evolution of the route between the Gap and the present Lihu'e Town - following the general alignment of the present highway corridor project area - would be generated by western-induced cultural and economic developments on Kauai begun in the first half of the 19th century.

On December 31, 1834, the Rev. Peter Gulick and his family arrived in Koloa *ahupua'a*. Apparently the first foreigners to settle in the *ahupua'a* (Gulick had previously been stationed at Waimea), they initiated the process of rapid change that would re-shape Koloa. In 1835 a 30 by 40 ft. grass house was erected as a meeting house and school. Rev. Gulick initiated sugar cane cultivation and collected a cattle herd for the Protestant Mission. In 1837 an adobe church was built and the first mission doctor, Thomas Lafon, arrived. Assistant Gulick. The Koloa mission station apparently flourished immediately; Charles Wilkes, a member of the U.S. Exploring Expedition visiting Koloa in 1840, recorded:

The population in 1840, was one thousand three hundred and forty-eight. There is a church with one hundred and twenty-six members, but no schools. The teachers set apart for this service were employed by the chiefs, who frequently make use of them to keep their accounts, gather in their taxes &c. The population is here again increasing partly by immigration, whence it was difficult to ascertain its ratio. (Wilkes 1846)

Further confirmation of the growth of Koloa is given by James Jackson Jarves, who visited Koloa and Kauai for nine months during the early 1840s:

Koloa is now a flourishing village. A number of neat cottages, prettily situated amid shrubbery have sprung up, within two years past. The population of the place, also, has been constantly increasing, by emigration from other parts of the island. It numbers, now, about two thousand people, including many foreigners, among whom are stationed a missionary preacher, and physician, with their families. (Jarves 1844:100)

The arrival of "many foreigners" was the cause of - and the native emigration to Koloa was the result of - the many commercial activities that burgeoned beginning in the 1830s. Among these commercial enterprises was Ladd and Company which, in 1836, gained from the king and local chiefs the lease of about one thousand acres at Koloa to be planted in sugar. The lease ran for 50 years at \$300 a year and "allowed the use of the waterfall and an adjoining mill site at Maulii pool, not far from the thousand acres, together with the right to build roads, the privilege of unrestricted buying and selling and freedom from local harbor dues (Judd 1935:57). That the company obtained the "right to build roads" suggests that construction of horse and carriage roads was an early priority of the western homesteaders and entrepreneurs settling at Koloa on south Kauai. Already in the 1830s, according to a visitor, James Townsend, there was "a good road made by the natives over a gentle ascent of about two miles" between the Koloa landing and the developing Koloa town (Townsend 1839).

Western homesteading and commerce moved into the lands above Nāwiliwili Bay that would evolve into Lihue Town within a few years after the establishment of the missionary and business activities at Kōloa. Two years after he had arrived at the mission station at Kōloa, Dr. Thomas Lafon moved east to open a branch of the Kōloa church:

In 1839...Lafon made his home in what became known as the Lihue district. The church he was in charge of there had been built by order of Kaikioewa (governor of Kaua'i). There must have been considerable activity in the Lihue area to cause Lafon to move there from Kōloa. James Jarves, who passed through the area in 1840, reported that in addition to the church there was a "straw palace," built for Keaweamahi, the wife of Kaikioewa. (Joesting 1984:153)

Kaikioewa, who died in 1839, had apparently intended to create a "city" at Lihue; according to Jarves, visiting in 1840:

There is a fine tract of land which the late governor selected as a site for a plantation, many acres of which he caused to be planted in cane, and also built a large church, and a house for himself. But death soon terminated his scheme, and his city, that was to be, still retains its original diminitiveness... (in Joesting 1984:153)

Kaikioewa's activities at Lihue did, however, draw a small community of westerners, including Dr. Lafon and his family, to the area, which impelled the creation of a horse trail between Kōloa and the Lihue area. Accounts of 19th travellers on the trail between Kōloa and Lihue present the first record of the lands surrounding the present Kaunuali'i Highway. William DeWitt Alexander, son of the former Waioli missionary William P. Alexander, described a return visit to Kaua'i in 1849, six years after his family had left the island. Travelling on horseback from Kōloa to Wailua, Alexander noted in his diary:

We then rode through a gap in the hills, leading out from Kōloa. The scenery was very fine, and worthy of Kauai. Mauna Kahili was close on the left, & on the right a beautiful range of hills extending towards the northeast, and terminating in an abrupt peak which goes by the name of "Houry Head" (Haupu). We rode on over a beautiful undulating table land, dotted with groves of lauhala and kukui. After riding about five miles, we crossed a stream fitly called Stoney Brook. We afterwards crossed many other streams on our way. Five miles further we passed Dr. Lafon's former residence. Here we began to descend towards the sea. (Alexander 1991:122).

Apparently, Alexander observed no conspicuous Hawaiian settlements between the Gap and Dr. Lafon's residence in the Lihue area.

Mahele and Land Commission Award Documentation

The Organic Acts of 1846 and 1848 initiated the process of the *Mahele* - the division of Hawaiian lands - which introduced private property into Hawaiian society. In 1848 the crown and the *ali'i* (royalty) received their land titles. The present Kaunuali'i Highway project area crosses three *ahupua'a*: Kōloa, Ha'ikū, and Nāwiliwili. Kōloa *ahupua'a* was awarded - Land Commission Award (LCA) 7714-B - to Moses Kekua'iwa, brother of Alexander Liholiho (Kamehameha IV) and Lot Kamehameha (V). Ha'ikū and Nāwiliwili *ahupua'a* were awarded - LCA 7713 - to Victoria Kamamalu, sister of Kamehameha IV, Kamehameha V, and

Moses Kekua'iwa. Documents associated with these awards give no indication of specific land uses or activities within the present highway project area.

Kūleona awards for individual parcels within the *ahupua'a* were subsequently granted in 1850. These awards were presented to tenants - native Hawaiians, naturalized foreigners, non-Hawaiians born in the islands, or long-term resident foreigners - who could prove occupancy on the parcels before 1845 (Apple 1978:45). Current tax maps indicate only two *kūleona* awards in the near vicinity of any portion of the present project area. The two awards - LCA 3366 to Nika and LCA 3248 to Hanale - are located in Nāwiliwili *ahupua'a*, along Nāwiliwili Stream, to the north of the present highway project area (Figure 2). Records associated with these awards indicate that the two awarded parcels comprised *taro lo'i*. Additionally, testimony recorded for LCA 3366 indicates that the parcel was "bounded mauka by upper road from Wailua to Kōloa" (Foreign Testimony, vol.13, pg.147), suggesting that, at mid-19th century, the road extending eastward from Kōloa toward the Lihue area and on to the northeast coast of Kaua'i ran somewhat to the north of the present project area route.

C. 1850s to 1900

Western commerce at Kōloa and Lihue during the second half of the 19th century would further compel the development of an increasingly direct roadway between the two economic centers.

The landing at Kōloa became the official port-of-entry for Kaua'i in the 1850s and the Kōloa inhabitants participated in the profitable trade with the whaling industry whose peak years ran from the 1830s to the 1860s. An article in the *Pacific Commercial Advertiser* of Feb. 19, 1857 described the port and its flourishing commerce at the mid-19th century:

The anchorage is an open roadstead, the tradewind blowing along and a little off shore...For the trade of the port there is a small rude pier constructed which might be improved at no great outlay of labor...Large quantities of firewood, bullocks and sweet potatoes are furnished to whalers in this port, and these chattels can no where be procured cheaper or better. It is estimated that 10,000 barrels of sweet potatoes are cultivated annually here, which are thought to be the best in the islands. Nearly all the potatoes furnished for the California market are produced here...Sweet potatoes, sugar and molasses constitute the chief trade of the port.

The records of the Collector General of Customs at Kōloa document the exuberant trade in whale ship provisioning and produce shipping at the port. Typical entries, in addition to potatoes, include: pigs, goats, butter, wood, fowls, oranges, bananas, and eggs. The Many of these goods were transported from east Kaua'i over the Kōloa-Lihue road, which continued to be improved. A visitor to Kaua'i in 1865, William T. Brigham, noted described the route between Lihue and Kōloa:

From Lihue the road led over the plain with the mountains on the left. A ditch crossed and recrossed the road as it wound along the hills from the fountains to the canefields below. Owls (puce) were very abundant, the Pass over the mountains was very good and not at all steep, and all the way which was some twelve miles, the road was very good, in fact a carriage road. Two hours riding brought me to Dr. Smith's (in Kōloa) at eight. (Lydgate 1991:143).

The "very good" carriage road that Lydgate observed in 1865 reflected not only the prosperity and activity at Kōloa, but also the growth of Lihue. In 1849, the firm of H.A.

Petree & Co. was established for the development of a sugar plantation at Lihue. The company obtained up to 3,000 acres of land and by 1861 a water-driven sugar mill was constructed (on the site of the present Lihue's sugar mill).

Hawaiians made up the labor force. They built their homes on the land surrounding the mill...Planting was begun in 1850 and the first crop, amounting to a little over 100 tons of sugarcane, was ground in 1853. (Joesting 1984:173)

Mary A.G. Rice presented, in 1914, a description of Lihue in 1850s when the new plantation was transforming the Lihue's landscape. Rice describes the area of Lihue surrounding the present project area corridor near the plantation mill and the present Lihue's Public Cemetery:

Though the roads ran somewhat differently from now they are very much the same with the exception that our present grades are vastly improved...

The land extending from the cemetery and up as far as Mr. Stewart's residence and across to Halehaka was formerly one large grove of Kukui trees, flanked on one side by a grove of Koa. Sandal-wood grew in such quantities on the ridges and in the valleys in some sections that there grew up quite a lucrative business in cutting and exporting the same to China.

The Hawaiian village at Puuloki, consisting of thatched houses, extended from near the present cemetery across to the property occupied now as the Hawaiian parsonage and Government school. There were also large settlements of Hawaiians in Halehaka valley, Niunualu, Nawiliwili and Hanamaulu valleys. (Rice 1991:47)

The cemetery Rice mentions is the present Lihue's Public Cemetery, located adjacent and to the south of the Kaunualii Highway, near the present Lihue's Mill Bridge. According to information provided by the Lihue's Public Cemetery Association, William Harrison Rice, the manager of the Lihue's plantation, was the first person buried in the cemetery in 1862 (personal communication: May 29, 1998). (The cemetery also contains the reinterment site of someone who died in 1854.) The cemetery was established by the Rice family and, in subsequent years, the cemetery also became the resting place for members of other prominent families that had settled on Kauai. In a ca. 1890s photograph, the cemetery site appears among a stand of trees at the top of a hill overlooking the sugar mill (Figure 3). The photograph also shows that no bridge then spanned Nawiliwili Stream, adjacent to the mill.

Whether the Koloa-Lihue road, during the 1890s, passed below the cemetery, as does the present Kaunualii Highway is unclear in the photograph. A traveller's description of the period, however, characterizes the roadway clearly. Eric A. Knudsen, recounting a trip around Kauai in 1895, describes a horse ride on the Koloa-Lihue road:

...We dropped down into the Poelele Stream, clambered up only to drop down again into the Omaso River, and finally entered Koloa Gap and joined the main road again near the base of Puuomoi.

From there the road led straight on towards Lihue. We crossed the Huleia River at the Half-way Bridge and soon were riding down through the pasture lands of Grove Farm. The camp called Puhi was not in existence in those days

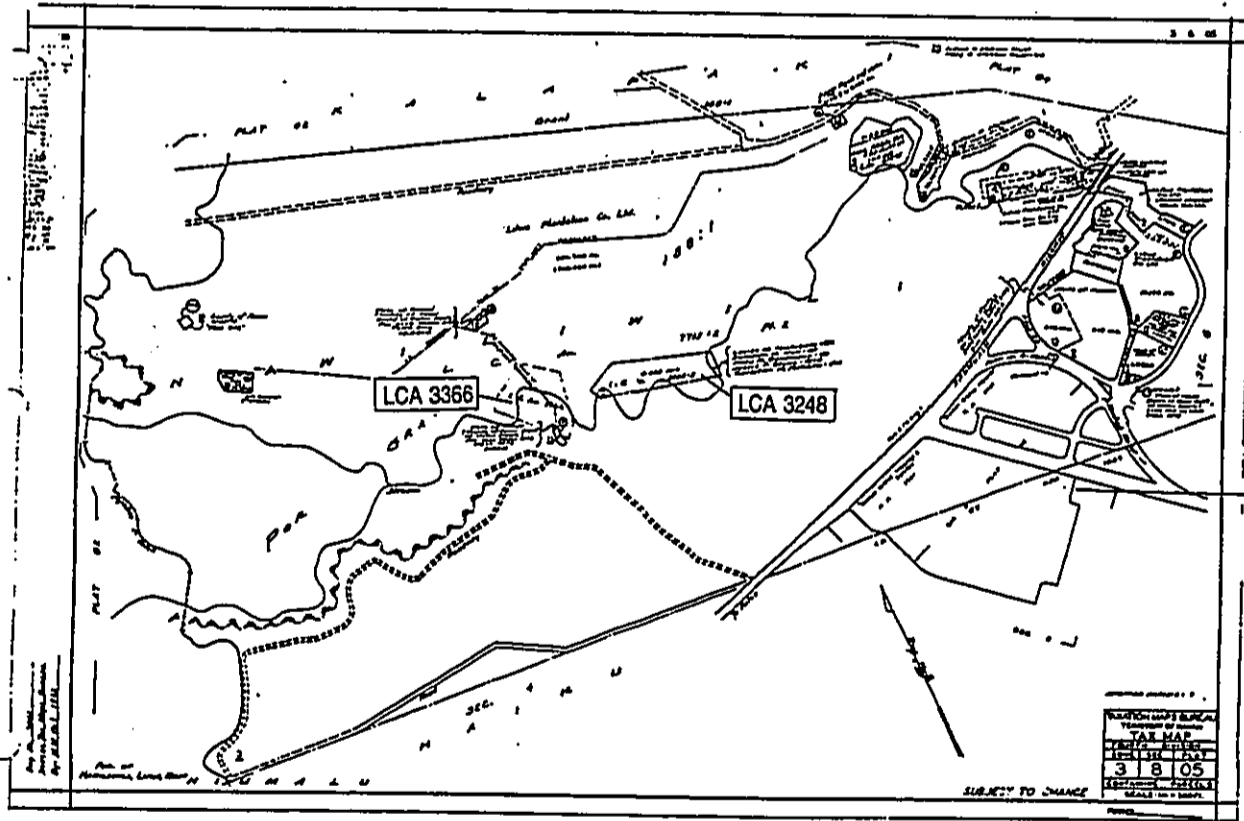


Figure 2 Tax map showing locations of Land Commission Awards north of the Kaunualii Highway project area



Figure 3 The sugar mill at Lihue, ca. 1890s, showing Lihue cemetery amid trees on hill overlooking the mill (Bishop Museum Archives)

{Knudsen's reminiscence was recorded in 1940}....There had been a shower and the surface of the road was only half dry and as the horses dashed along they threw back clods of earth. (Knudsen 1991:151)

Near the end of the 19th century, the route through the Gap and on to Lihue remained an unpaved, dirt carriage road.

D. 1900s to Present

By the first decade of the 20th century, the road between the Gap and Lihue was a portion of a road system extending from the southwest coast to the northeast coast of Kauai. A Hawaii Territory Survey map of 1903 shows that the road between the Gap and Lihue followed a much more irregular route, likely following the most accessible contours of the landscape, than that of the present Kaunuaui Highway project area (Figure 4). The map indicates that, toward Lihue, the road did not extend to the sugar mill but veered to the southeast (along the route of the present road to Nāwiliwili).

Other 20th century documents record improvements to the Kauai road system and developments to the landscape adjacent to the present Kaunuaui Highway project area. Hans Isenberg, minister of the Lutheran church at Lihue, observed in his journal in 1909: "Macadam roads increasing on the island" (in Damon 1931:914). According to Isenberg, at the Lihue cemetery, in 1911, some trees had been planted and the outer graves fenced to keep out horses. Also on May 6th of that year, the first meeting of the Lihue Public Cemetery Association was held (*Ibid.*:914).

The 1903 map also shows the Koloa-Lihue road extending across "Grove Farm", a sugar plantation which had been established several decades earlier in the 19th century.

George N. Wilcox bought the embryo Grove Farm plantation in 1870 from Herman Widenmann for \$12,000, three-quarters of which was borrowed. Four years later he had 200 acres under cultivation. In 1881 Wilcox bought 10,500 acres of land at Haiku from Princess Ruth. This increased the acreage of Grove Farm tenfold and made the plantation economically feasible. With machines, irrigation ditches, and Wilcox's ability, it became a very profitable enterprise. (Joesting 1984:221)

In the 1920s, Grove Farm began a building program at Puhi, along the route of the present Kaunuaui Highway:

About 1920 George [Wilcox] began construction of a completely modern camp at Puhi in the heart of the expanding plantation. Instead of building houses haphazardly as new families moved in, a complete village was laid out with streets, a playground, room for gardens, and lawns. The houses had proper kitchens equipped with running water and enough bedrooms for each family depending upon the number of children. (Krauss 1965:310)

As indicated by an aerial photograph of 1924, Lihue, was by then a burgeoning plantation town and the county seat, with sugar plantation operations existing in close proximity to government buildings (Figure 5). Another photograph from the 1920s indicates that the Koloa-Lihue route remained a dirt road minimally cut through the surrounding terrain (Figure 6).

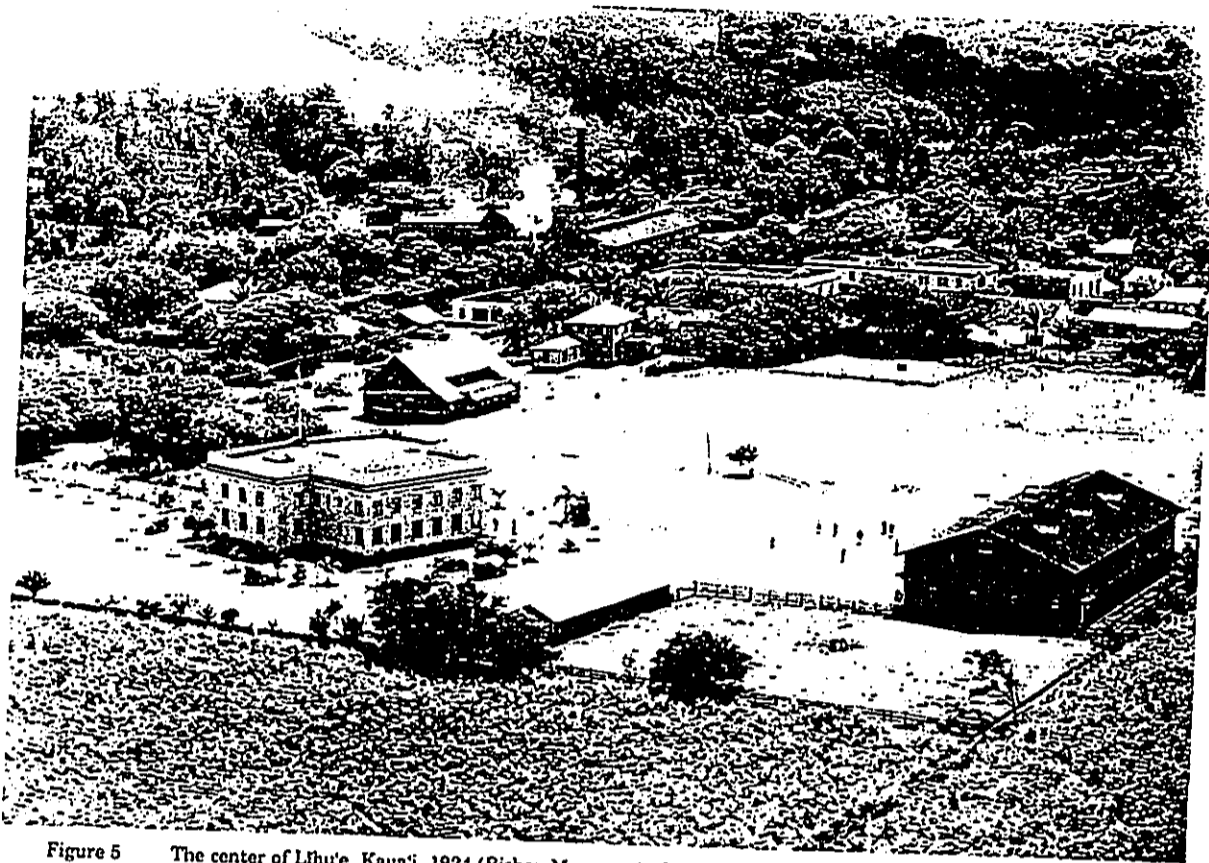


Figure 5 The center of Lihue, Kauai, 1924 (Bishop Museum Archives)

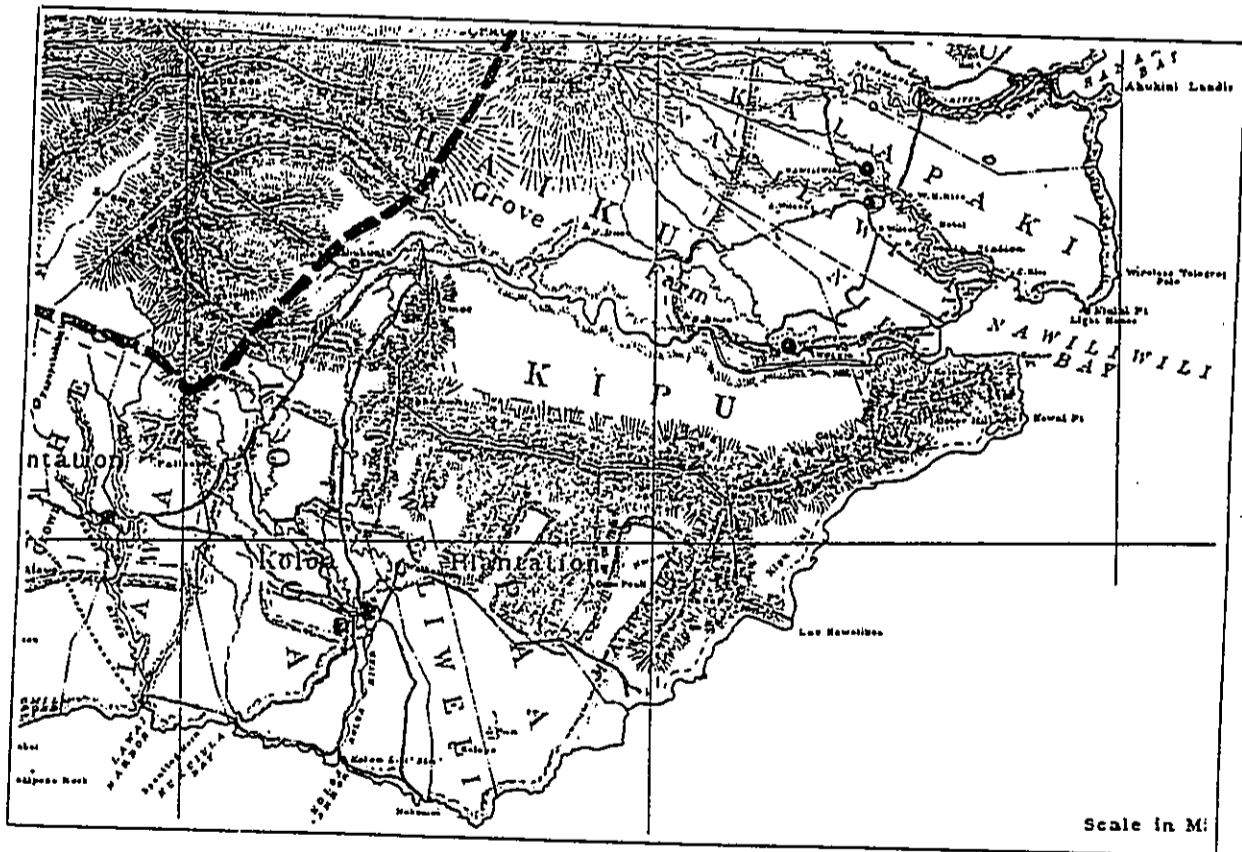


Figure 4 Portion of 1903 Hawaii Territory Survey map of Kauai showing road from Lihue to south and southwest Kauai



Figure 6 View of road between Lihu'e and Kōloa, Kaua'i, ca. 1920s (Bishop Museum Archives)

It was during the 1930s, when Federal funds became available to assist the Territory of Hawaii's highway construction program, that development of the present Kaunuaui'i Highway project area accelerated. On October 10, 1933, Hawaiian Contracting Co., Ltd. was awarded a \$354,355.63 contract for construction of a 5.066-mile long portion of the Kaua'i Belt Road (i.e. the present Kaunuaui'i Highway) extending west from the junction with the road to Kōloa. The project, identified as NRH 12-B, was funded by the National Recovery Highway Fund, the Federal Aid Fund, and a contribution by the County of Kaua'i. A 1935 map issued by the Territorial Highway Department shows that project 12-B had been completed and that the rest of the Belt Road to Lihu'e required "construction or reconstruction" (Figure 7).

The "construction or reconstruction" of the Belt Road was completed incrementally during subsequent years. In 1936, Hawaiian Contracting Co. was awarded contracts for construction of the road east of the Kōloa, projects WPH-12-H and FAP-12-G comprising a total of 2.573 miles. The Territorial Highway Department map of July 1, 1936 indicates that the two projects were then under construction (Figure 8).

At the same time that the Belt Road construction program was underway, during the mid-1930s, Grove Farm was further expanding into Pūhi. It moved its headquarters there, constructing a new office building, shop and stables:

The new plantation headquarters was a snug, concrete building with grey-white walls and a Hawaiian style roof of grey cement shingles. Broadbent (the plantation manager) and Alexander (the assistant manager) shared a room almost as big as the entire old office. Time keepers had the main room, the bookkeeper a space for himself. The engineering department worked in another small room and supervisors had desks for filling out reports.

Nearby, across the compound, young Bill Moragne was busy erecting an all electric-powered plantation repair shop. By the end of 1936, Grove Farm would be the most modern, best-equipped plantation in the Territory of Hawaii. (ibid.:336)

A 1938 photograph shows the plantation headquarters building at Pūhi, adjacent to the newly-completed section (FAP 12-P) of the Belt Road (Figure 9).

By December of 1950, the Kaua'i Belt Road from Kōloa to Lihu'e was completed, the total route comprising two projects (Figure 10). Project No. F 12 (17) covered the construction of 6.062 miles between the Kōloa junction and, at the Lihu'e end, the junction with the road to Nāwiliwili; final cost of the project was \$255,860.00. At the Nāwiliwili road junction, an additional project - No. F 24 (2) costing \$34,162.56 - extended the Belt Road 0.616 miles directly into Lihu'e Town over the Lihu'e Mill Bridge. The bridge itself was constructed by the Territorial Highway Department in 1936. Adjacent to the Lihu'e Mill Bridge, the Ho'omana Bridge had been constructed earlier, in 1928, by the Lihu'e Plantation over a railroad alignment leading to its sugar mill.

A set of aerial photographs (taken on November 22, 1950) of the Kaua'i Belt Road - present Kaunuaui'i Highway project area (on file at Cultural Surveys Hawaii) shows sugarcane fields planted on the flat lands along almost the entire length of the Belt Road, just before its December 20, 1950 completion date. The only areas where historic-era

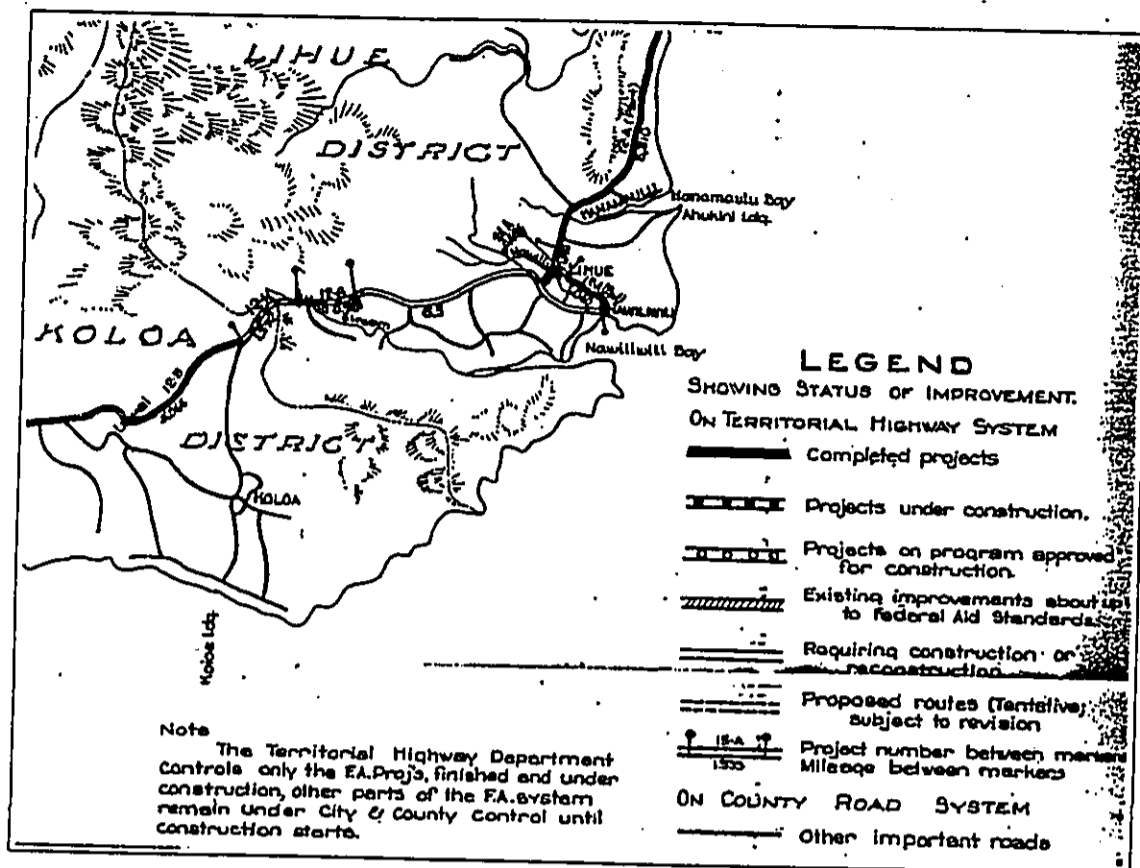


Figure 8 1936 Territorial Highway Department map showing portions of the Kauai Belt Road-present Kaunualii Highway project area then under construction

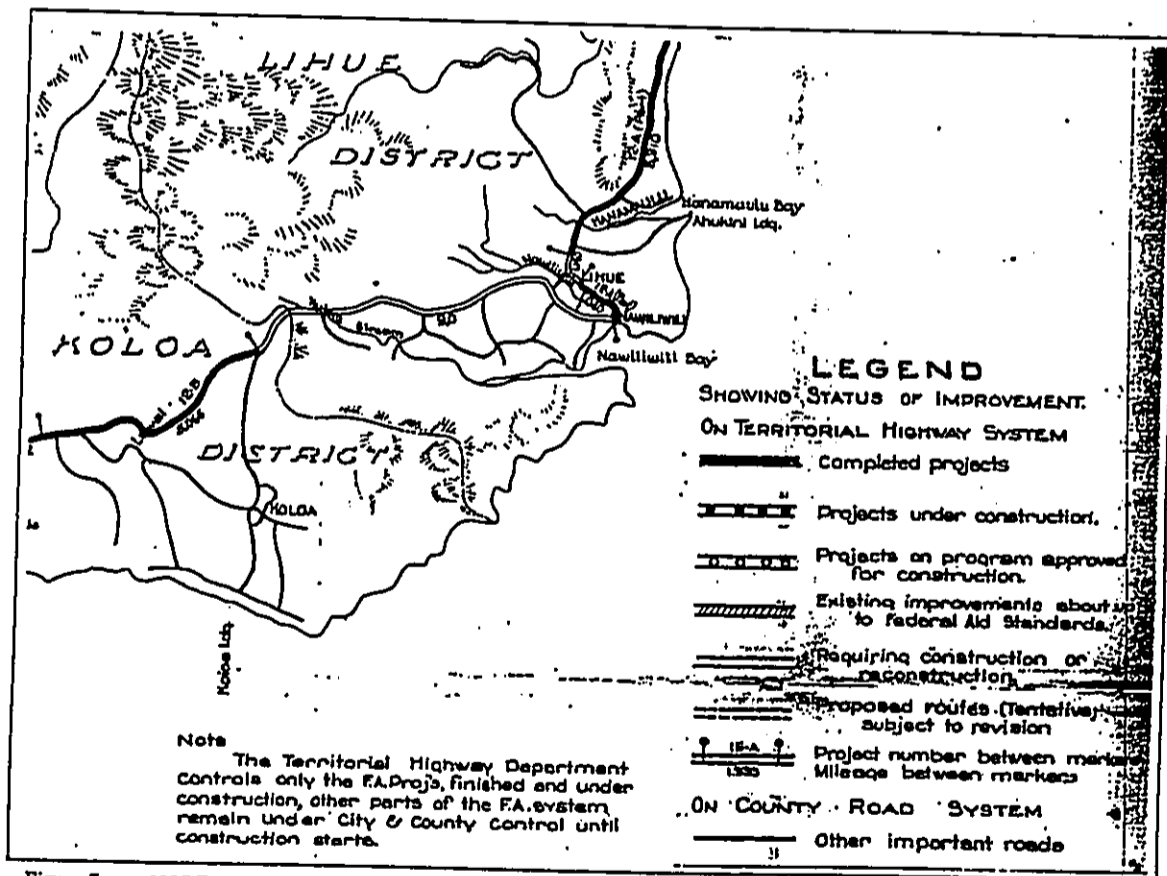


Figure 7 1935 Territorial Highway Department map showing the completed portion - Project NRH 12-B - of the Kauai Belt Road-present Kaunualii Highway project area

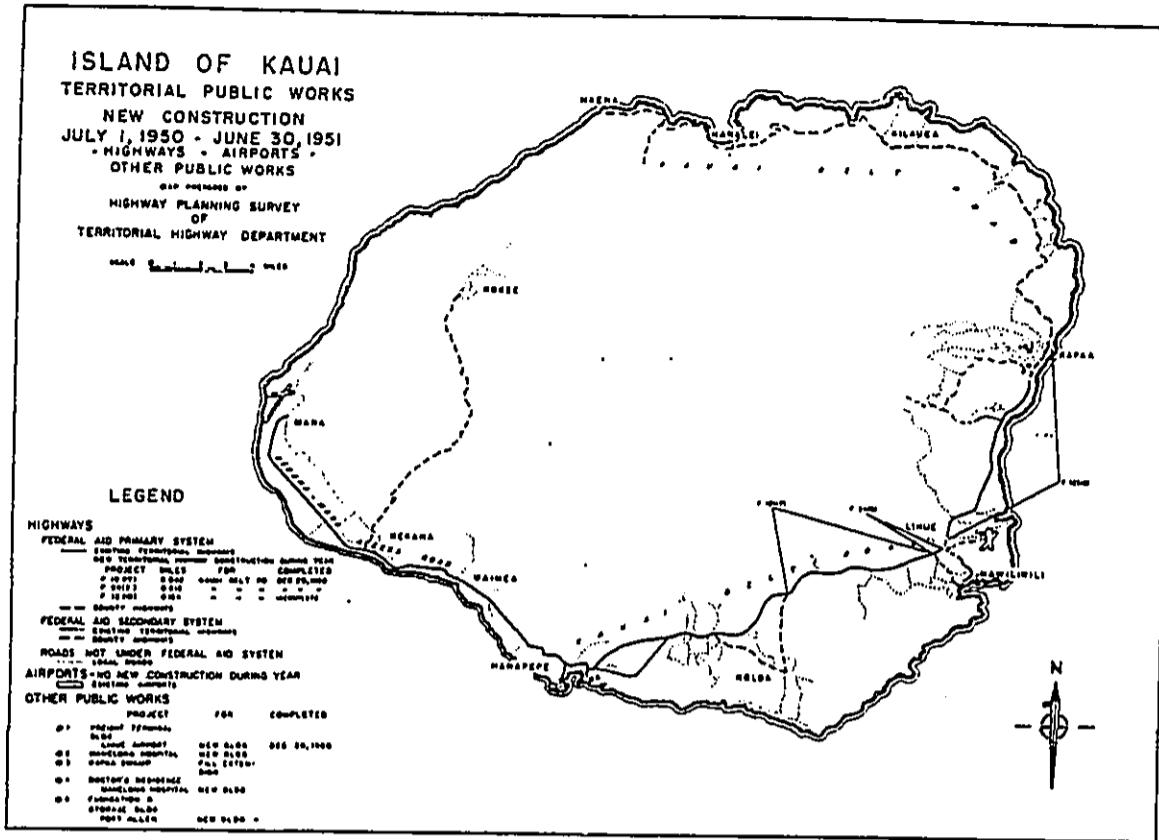


Figure 10 1951 Territorial Highway Department map showing completed Kauai Belt Road projects F 12 (17) and F 24 (2)

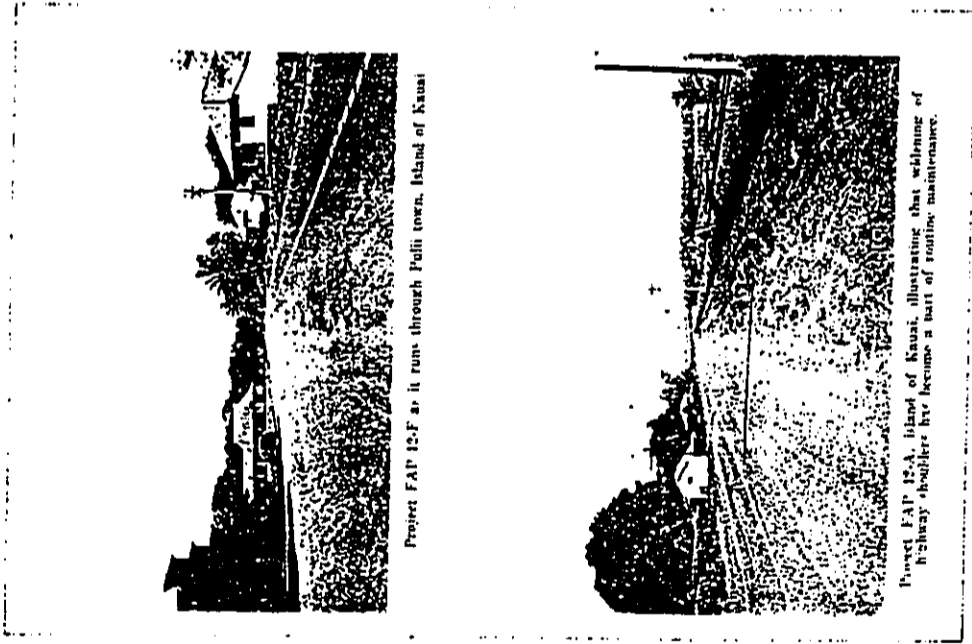


Figure 9 Grove Farm buildings at Puhia in 1938 (from Report to the Governor...by the Superintendent of Public Works for the Year Ending June 30, 1938)

constructions are visible in close proximity or adjacent to the Belt Road-present Kaumuali'i Highway project area at Puhi and at the Lihue (east) end of the project area (Figures 11 & 12). At Puhi, the Grove Farm plantation camp and headquarters buildings are visible immediately adjacent to the road right-of-way, just as shown in the earlier 1938 photograph (see Figure 9 above).

At the Lihue end of the present project area are the Hoomana Overpass and Lihue Mill bridges. Also visible, in the 1950 aerial photograph, are buildings on both sides of the Belt Road, just beyond the mill bridge. According to information provided by Mr. Hoby Goodale, a longtime *kama'aina* resident of Kaula'i, these buildings comprised the "Kiiipaki Camp", named for the plantation workers from the Gilbert Islands who once resided there (personal communication: May 29, 1998). Mr. Goodale also recalled vegetable gardens planted in the camp area. The camp remained in existence through the 1950s and into the 1960s. Sometime later, the camp was removed.

1977-78 orthophotoquad maps of the entire length of the present Kaumuali'i Highway project area show the sugarcane fields that, through most of this century, have girded the route between Lihue and the Gap (Figures 13 & 14). The only significant area, along the present Kaumuali'i Highway corridor, that appears to have escaped sugarcane cultivation is the Hule'ia River Gulch. This gulch area would be otherwise impacted in 1989 when the Kaumuali'i Highway was improved by a new 420-foot concrete bridge across the Hule'ia River. The bridge replaced the old "Halfway Bridge" which had been constructed in the 1930s. The new bridge marked the last major construction and modernization project within the present Kaumuali'i Highway project area until the present.



Figure 11 1950 aerial photograph showing Kaunoi Belt Road through Grove Farm Puhi Camp area (R.M. Towill)

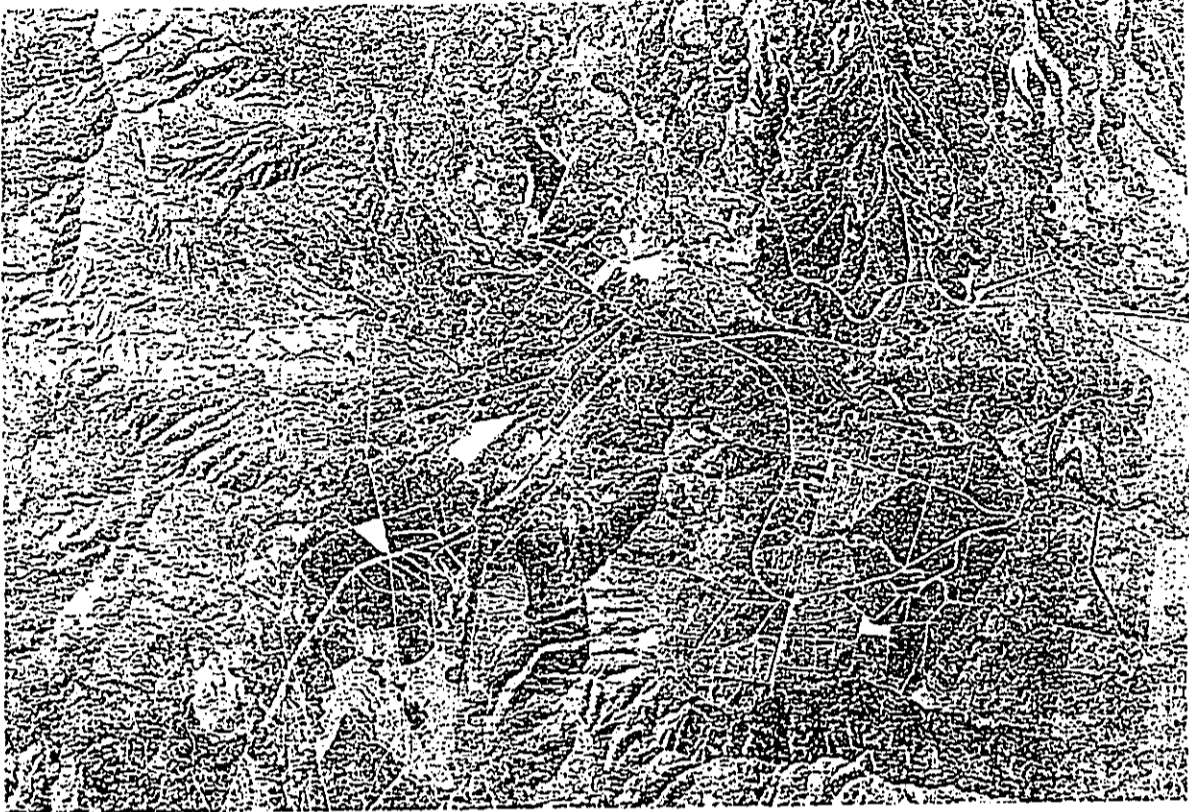


Figure 11 1977-78 U.S.G.S. orthophotoquad map showing western portion of the Kuaui Belt Road-present Kaunualoi Highway corridor project area

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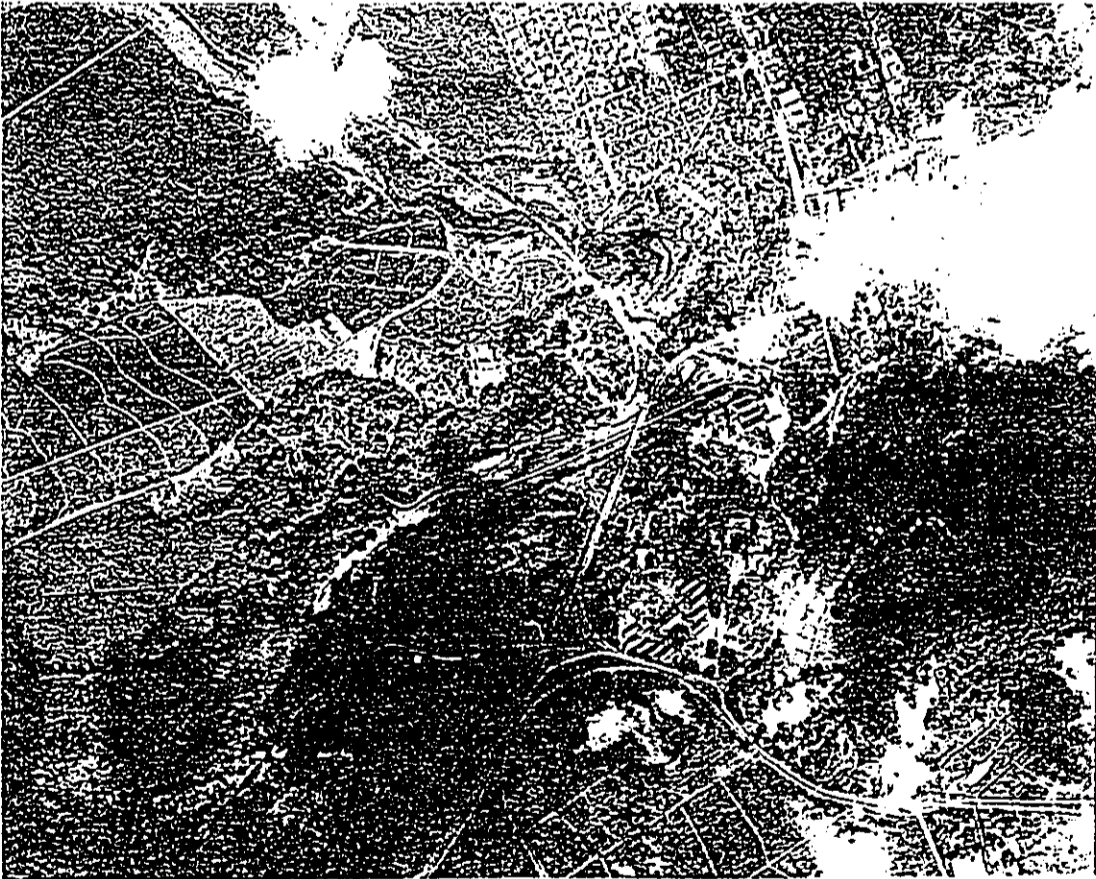


Figure 12 1950 aerial photograph showing Lahave end of Kuaui Belt Road (R.M. Towell)

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III. PREVIOUS ARCHAEOLOGICAL AND HISTORICAL RESEARCH

A. Archaeological Studies

The first attempt at comprehensive archaeological survey of Kaua'i was undertaken by Wendell Bennett (1931) of the Bishop Museum during the early 1930s. Bennett's survey report identifies no archaeological sites within or in the vicinity of the present Kaunualii Highway corridor project area. A review of reports presently on file in the library of the State Historic Preservation Division (SHPD) indicated that no archaeological surveys have been conducted within any portion of the present project area during the decades following Bennett's survey.

B. Registered Historic Sites

A review of records on file at the SHPD indicated that there are no historic sites currently on the Hawai'i State Register of Historic Places or the National Register of Historic Places - adjacent or in close proximity to the present Kaunualii Highway project area corridor.

The only recorded historic site in the vicinity of the project area is "Kilohana", the Wilcox residence at Puhi, which has been placed on the Hawai'i Register of Historic Places. However, the buildings and area specified on the Register comprise only the main house and guest house, and the immediately surrounding garden and lawns. This area is located approximately 250 meters from the Kaunualii Highway corridor.

C. Kaua'i Bridge Survey

During the mid-1980s, a survey of Kaua'i bridges was conducted as part of a revised State Bridge Inventory of State or County owned bridges constructed before 1941. (An earlier Kaua'i County bridge survey had been conducted in the 1980s.) The draft report of this revised inventory is currently under review. According to information (personal communication: December 20, 1997) provided by staff of Spencer Mason Architects, which conducted the bridge survey, within the present Kaunualii Highway project area, only the Hoomana Overpass (Hoomana Road Bridge), which was constructed in 1928, and the Lihu'e Mill Bridge, constructed in 1936, were evaluated as eligible for nomination to the National Register of Historic Places. Two other bridges - Weowcopilau (built in 1937) and Waihoonu (built in 1934) had been identified as potentially significant in the original Kaua'i County bridge report but were dropped out when reevaluated at a state-wide level.

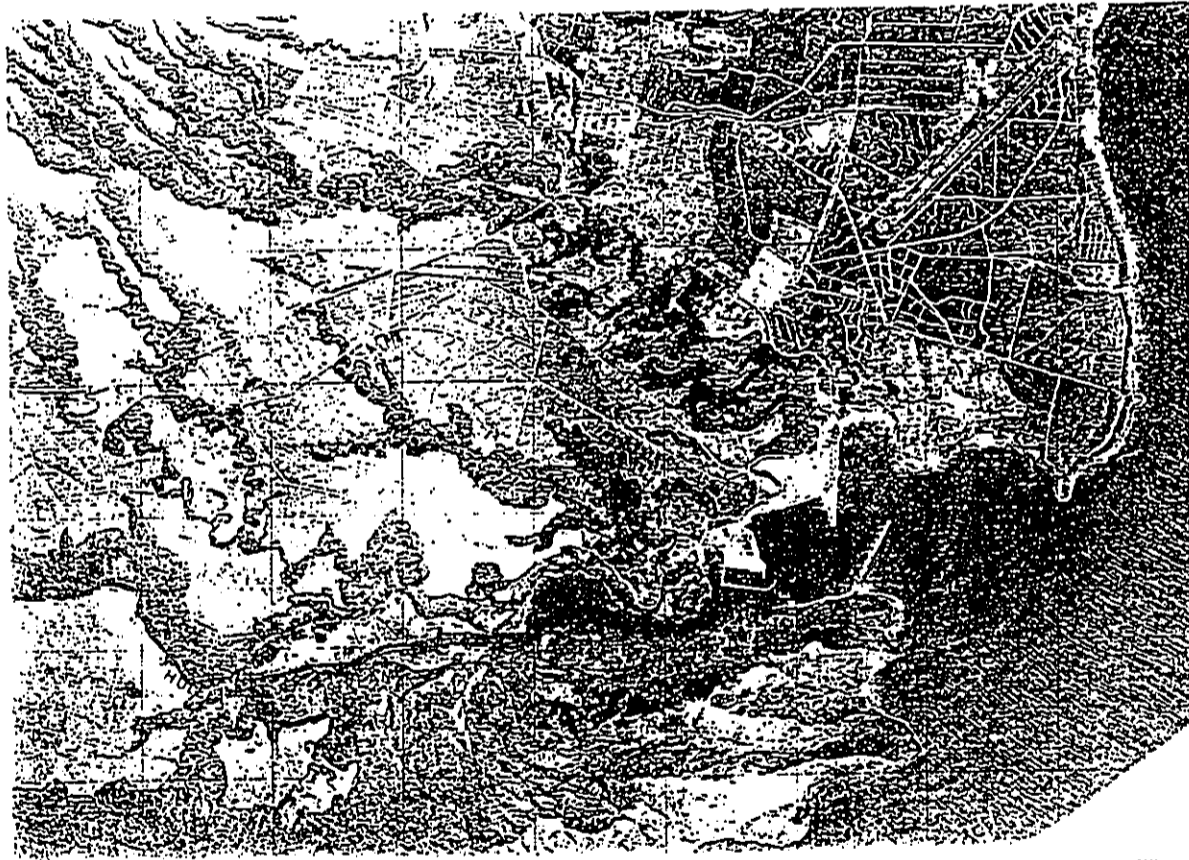


Figure 14 1977-78 U.S.G.S. orthophotoquad map showing eastern portion of the Kaua'i Belt Road-present Kaunualii Highway corridor project area

IV. RECONNAISSANCE SURVEY

A. Survey Methods

Reconnaissance survey of the Kaumuali'i Highway project area was accomplished on March 24 and May 13, 1998 by teams of one to three archaeologists including: Dr. Hallett H. Hammatt, project director; Gerald Ida; Matt MacDermott; and Rodney Chiogioji. The entire project area was inspected on foot and by vehicle. Findings were documented by field notes and photographs.

Special attention was given to areas along the highway corridor which background research (see sections II and III above) had identified as locations of known or possible archaeological and historic sites. These areas included:

- 1) the Hule'i'a River Gulch, identified in previous studies as an area of pre-contact Hawaiian settlement and agricultural activity;
- 2) Puhii, where historic photographs and documents indicated that Grove Farm headquarters and camp buildings (constructed in the 1920s and 30s) were located immediately adjacent to the then-Kaunani Belt Road;
- 3) the Lihue terminus of the project area, the location of two historic bridges, an historic cemetery, and a former plantation camp.

B. Survey Results

No archaeological sites or features were encountered during the surface survey of areas adjacent to the highway corridor. Extensive previous disturbance from sugarcane cultivation (previously documented in historic photographs; see Section II above) and modern urban development was evident along almost the entire length of the corridor (Figures 15 & 16). No isolated artifacts or midden materials were encountered in either disturbed or undisturbed areas.

Findings within the areas of special concern are described below:

Hule'i'a River Gulch

The gulch bottom was inspected a distance of 100 meters on both sides of the present "Halfway Bridge" (Figures 17 & 18). The area was heavily vegetated in California grass, *hau*, *kukui*, ferns and vines. No archaeological sites or features were evident. The only historic-era construction encountered were the remnants of the former Halfway Bridge, located just north of the present bridge (Figure 19).

Puhii

None of the Puhii plantation camp buildings visible along the north side of the present highway corridor in the 1938 photograph and 1950 aerial photograph (see Figures 9 & 11 above) were in evidence. Apparently, they have all been demolished or otherwise removed.

Adjacent to the south side of the highway corridor, the only remaining structure dating to the plantation era is the Grove Farm headquarters office building, constructed in the mid-1930s (Figure 20). The building continues to function as the plantation headquarters and the exterior appears little altered since the 1930s.



Figure 15
Sugarcane fields along Kaumuali'i Highway at west end of project area, view northeast

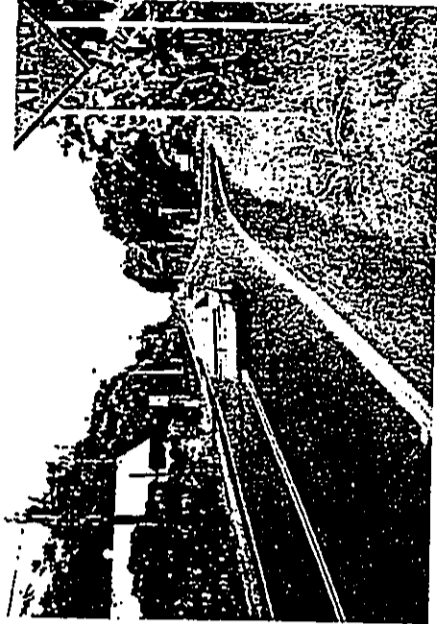


Figure 16
East end of Kaumuali'i Highway project area at Lihue Mill Bridge; view west



Figure 17 Huleia River Gulch below Halfway Bridge; view southwest



Figure 19 Remnant of former Halfway Bridge in Huleia River Gulch; view northwest



Figure 18 Huleia River Gulch below Halfway Bridge; view west

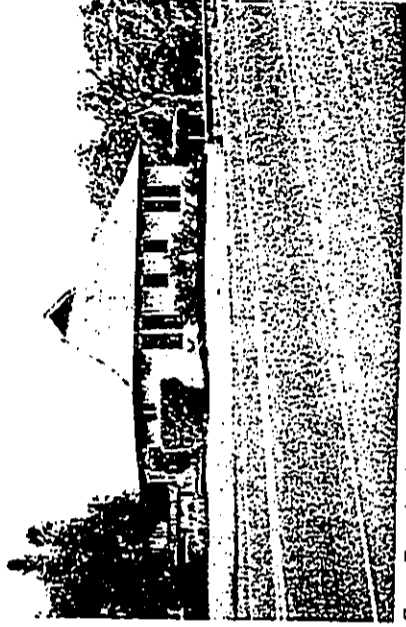


Figure 20 Grove Farm headquarters office building at Puhi; view southwest

Lihū'e

At the Lihū'e terminus of the corridor, the two historic-era bridges - the Lihū'e Mill and Hoomana Overpass - appear to have undergone no major reconstruction or modification since their construction in 1936 and 1928, respectively (Figures 21 & 22). Both continue to function.

Just west of the Lihū'e Mill Bridge, areas adjacent to the present highway corridor where structures were visible in the 1950 aerial photograph (see Figure 12 above) were inspected on foot (Figures 23 & 24). These structures, according to a *kama'āina* informant, comprised the former "Kiiipaki Camp". Except for a single wood shed on the north side of the highway corridor, no evidences of the former camp buildings were encountered.

Adjacent to the south side of the highway is the Lihū'e Public Cemetery, located on a knoll overlooking the highway and the Lihū'e Mill (Figures 25 & 26). The cemetery dates back to the 19th century; maintenance and expansion of the cemetery have continued to the present.

During the present survey, particular attention was given to the portion of the cemetery along the top of the slope above the Kaunua'i'i Highway corridor. It was noted that grave sites are located in close proximity to the edge of the slope above the highway (Figure 27). Also, during inspection of the slope itself, a displaced grave marker was observed among tree roots (Figure 28).

A fragile 1940 map of the cemetery shows the layout of burials along the cemetery boundary above the present highway corridor (Figure 29). The map indicates that one area of the cemetery along the slope is retained by a wall. The other area is not similarly secured. It was on the slope below this area that the displaced grave marker was encountered.

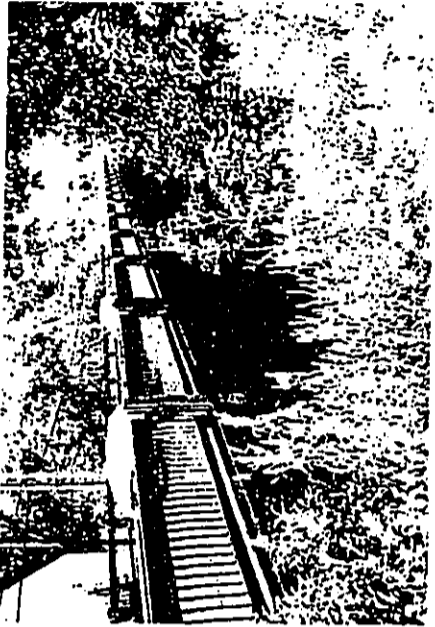


Figure 21
Lihū'e Mill Bridge; view west

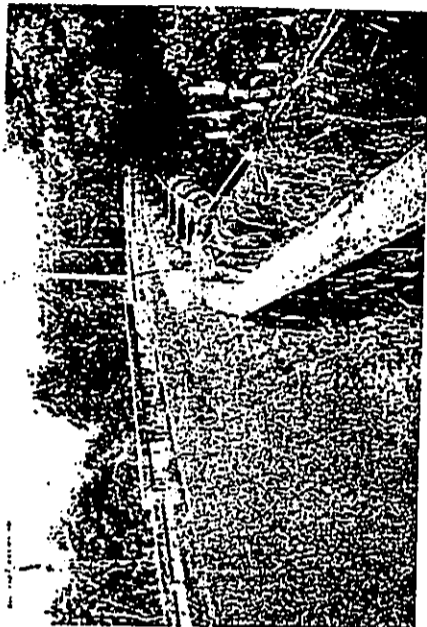


Figure 22
Hoomana Overpass Bridge; view north



Figure 23 Former "Kilipaki Camp" site on south side of Kaunualii Highway; view north



Figure 24 Former "Kilipaki Camp" site on north side of Kaunualii Highway showing wooden shed; view north

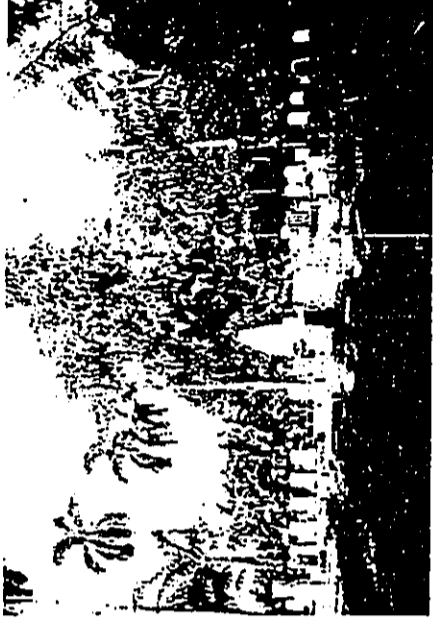


Figure 25 Lihu'e Public Cemetery; view west

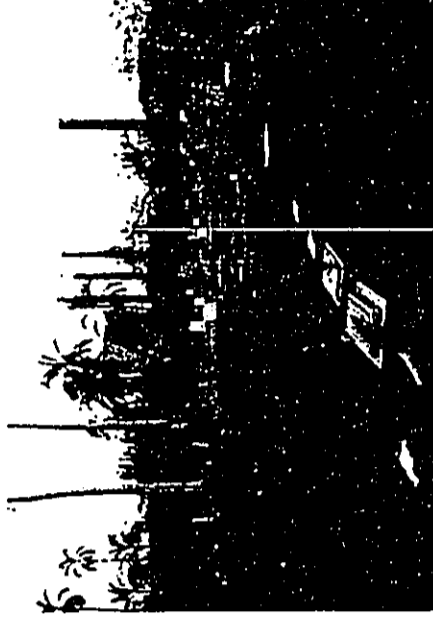


Figure 26 Lihu'e Public Cemetery showing Lihu'e Sugar Mill in distance; view east



Figure 27
 Lihue Public Cemetery showing rows of grave sites along edge of slope above Kaunani Highway; view northwest



Figure 28
 Lihue Public Cemetery showing displaced grave marker on slope above Kaunani Highway; view south

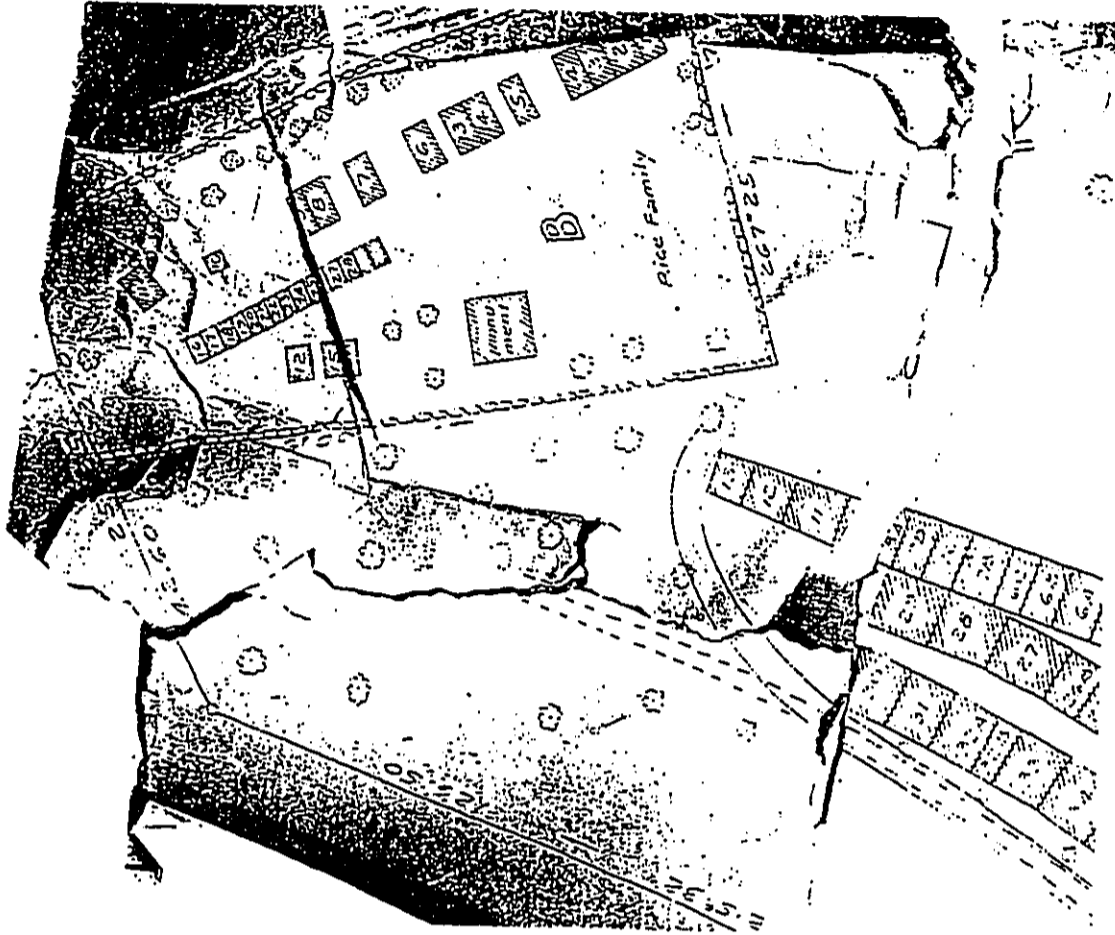


Figure 29
 Portion of 1940 map of Lihue's Public Cemetery showing locations of grave sites along the boundary above the Kaunani Belt Road-present Kaunani Highway (Kaunani Museum)

V. SUMMARY AND RECOMMENDATIONS

A. Summary

Background research suggests that the specific route of the present Kaunualii Highway project area - through the Gap and on east to the Lihue sugar mill - was created as a result of the establishment of western commercial and social centers at Koloa and Lihue in the 19th century. Until the 1920s, the route was a simple dirt road, generally following the surface contours of the landscape with occasional, small, cut embankments.

The highway - then identified as a portion of the Kauai Belt Road - was incrementally paved, widened and landscaped during the 1930s and 1940s when Federal funds became available to assist the Territory of Hawaii's highway construction program. The highway was further modernized through the 1950s and into the 1980s with the completion of a new "Halfway Bridge" over the Huleia River gulch.

During the reconnaissance survey, no surface prehistoric archaeological sites were observed within 100 feet on either side of the highway corridor. Decades of agricultural, commercial and construction activities, dating back to the 19th century, have removed any evidences of surface sites.

However, four historic-era sites and areas of concern within or adjacent to the highway corridor were identified during the survey: the Grove Farm office building in Puhii, the Lihue Mill Bridge, the Hoomana Overpass Bridge, and the Lihue Public Cemetery.

B. Recommendations

The following recommendations are presented to address the three areas of potential impact that highway improvement could have to historic era features:

- 1) Because of its age and design, the Grove Farm office building on the south side of Kaunualii Highway in Puhii is potentially eligible for nomination to the State and National Registers of Historic Places. Highway improvements in this area of Puhii should therefore be confined to the north side of the existing right-of-way to avoid potential impacts to this building.
- 2) Both the Lihue Mill Bridge and the Hoomana Overpass Bridge are potentially eligible for nomination to the State and National Registers of Historic Places. Any alterations or impact to these structures should be coordinated with the State Historic Preservation Division of the Department of Land and Natural Resources.
- 3) Because of the close proximity of the Lihue Public Cemetery to the Kaunualii Highway right-of-way, and the cemetery's location at the top of a steep bank on the south side of the right-of-way, improvements to the highway on this side of the right of way should be avoided. Any modification to the steep bank between the cemetery and the highway could result in disturbance to existing graves.

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APPENDIX J

Hawaiian Traditional Practices Assessment

ABSTRACT

At the request of Park Engineering, Cultural Surveys Hawai'i conducted a traditional cultural practices assessment for a portion of the Kaunua'i Highway, beginning at the Lihue Mill Bridge road and extending west past Kaunua'i Community College (Puhia) and ending about one kilometer past Matuhia Road (Tree Tunnel to Kōloa). The total stretch of the highway corridor studied is approximately 11.6 kilometers (7.13 miles) long. This portion of the highway is proposed for widening to effectively facilitate traffic flow.

A traditional cultural practices assessment studies the possible impact of a proposed project on cultural practices and native gathering rights within the broader context of the *ahupua'a*, as opposed to a microscopic study that is confined only to the immediate project area. Along with the components of historical research and documentation, the component of "talk-story" with knowledgeable informants regarding cultural practices is added.

This study did not identify any cultural practices within the proposed project area or, for that matter, any areas adjacent to or outside of the highway corridor. Since the 19th century, the vicinity was heavily utilized for agricultural, commercial and construction activities. These disturbances have removed nearly all evidence of cultural practices, knowledge of traditional land use and of Hawaiian sites in the area. Thus, a recommendation of no cultural impact was assessed to the proposed project.

HAWAIIAN TRADITIONAL PRACTICES ASSESSMENT FOR A PORTION OF THE KAUNUA'I HIGHWAY CORRIDOR, THROUGH NAWILIWILI, HA'IKO, AND KŌLOA AHUPUA'A, ISLAND OF KAUAI

by

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I. INTRODUCTION

A. Project Description

At the request of Park Engineering, Cultural Surveys Hawai'i has conducted a Hawaiian traditional practices assessment of a portion of the Kaunualii Highway on the island of Kaula'i (Figures 1-2). The portion of the highway under study is approximately 11.5 kilometers long (7.13 miles), extending west from the Lihue Mill Bridge, through Puhi, and terminating approximately 1 kilometer west of Maluhia Road (to Koloa). This portion of the highway is proposed for widening to facilitate traffic flow and increasing vehicular capacity.

B. Scope of Work

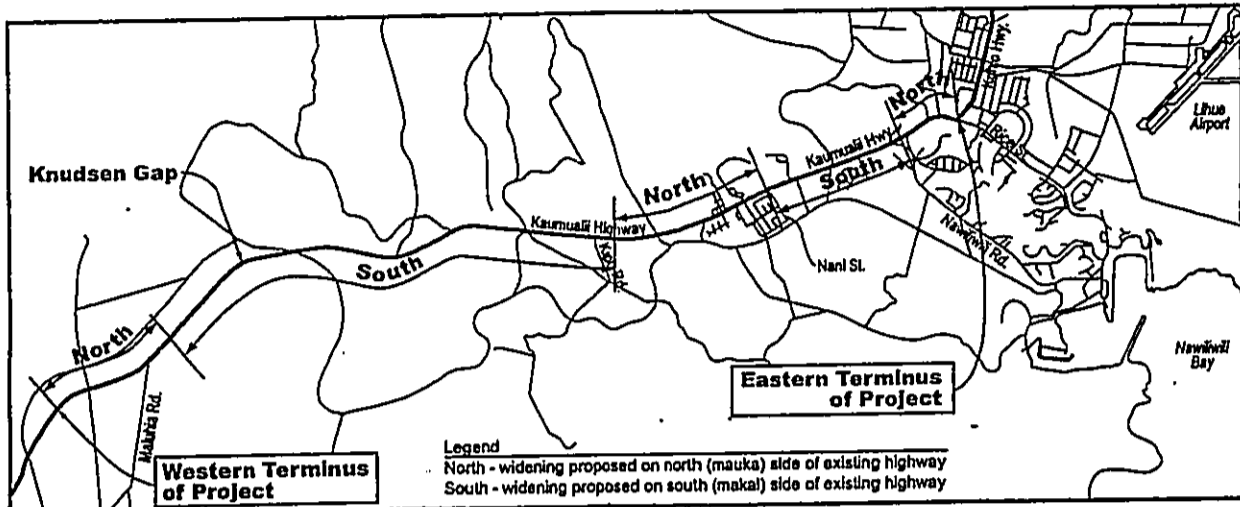
The scope of work is as follows:

1. Examination of historical documents, Land Commission Awards, historic maps, with the specific purpose of identifying traditional Hawaiian activities including gathering of plant, animal and other resources or agricultural pursuits as may be indicated in the historic record.
2. A review of the existing archaeological information pertaining to any sites on the property as this may allow us to reconstruct traditional land use activities and identify and describe the cultural resources, practices and beliefs associated with the parcel and identify present uses, if appropriate.
3. Conduct oral interviews with persons knowledgeable about the historic and traditional practices in the project area and region to provide expert testimony on this specific corridor. We anticipate coordination with a number of Kaula'i and Hawaiian organizations.
4. A field inspection to identify traditional practices issues on site.
5. Preparation of a report on items 1-4 summarizing the information gathered related to traditional practices and land use. The report will assess the impact of the proposed action on the cultural practices and features identified in the project area.

C. Methods

A field inspection to identify traditional practices issues was conducted on June 23, 2000. No cultural issues were identified.

Background research included: a review of previous archaeological studies on file at the State Historic Preservation Division of the Department of Land and Natural



Source: ParEn, Inc.

Figure 2 Map showing portions of proposed widening for the Kaumuali'i corridor

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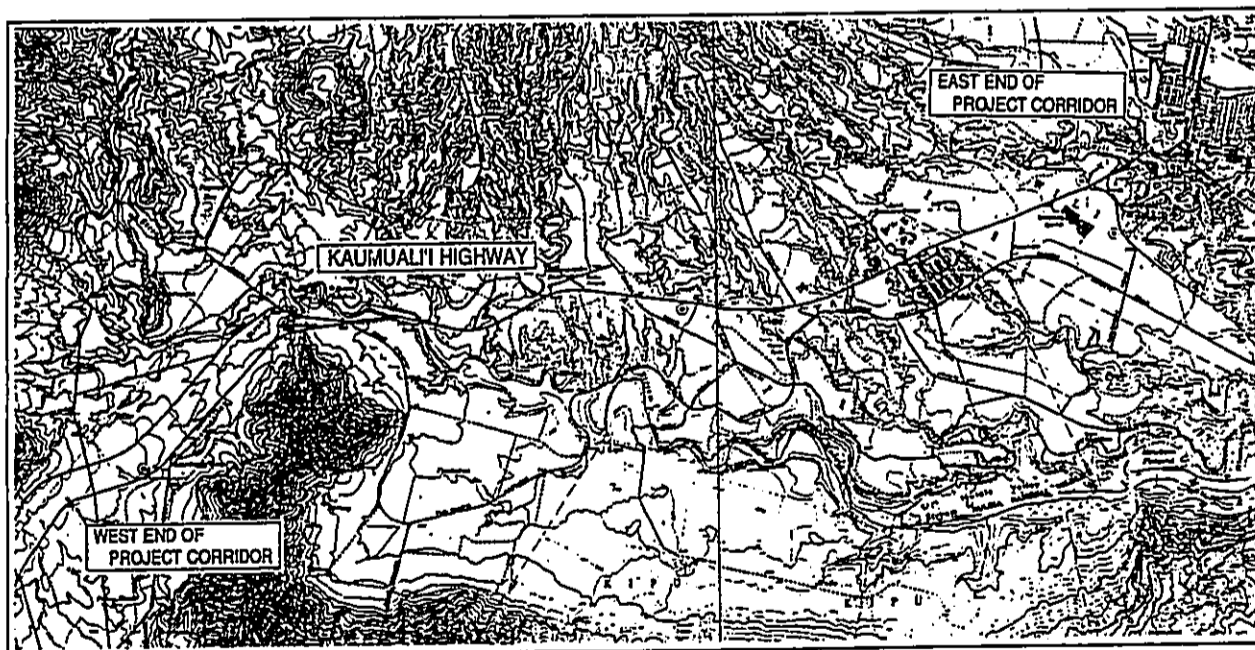


Figure 1 Portion of USGS 7.5 Minute Series Topographical Map, Lihue and Koloa Quadrangles, showing Kaumuali'i Highway corridor project area

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Resources; review of documents at the Hamilton Library of the University of Hawai'i, the Hawai'i Public Library, the Hawai'i State Archives, the archives of the Bishop Museum, the libraries of Cultural Surveys Hawai'i, and study of historic maps.

Cultural Surveys Hawai'i consulted with approximately 40 individuals, Hawaiian organizations and groups in an attempt to identify knowledgeable *kupuna* and *kama'āina* residents regarding cultural practices, Hawaiian settlements, sites, burials or any other related cultural practices which might be affected by the proposed project. The consultations did not identify any knowledgeable *kupuna* or *kama'āina* to interview regarding cultural practices within the immediate project area or the broader *ahupua'a* land divisions through which the Kaunua'i Highway passes. A common reply of those who were consulted was, "The ones who would know are all gone now." For a listing of people and organizations contacted, see "Section IV" (Results of the Cultural Assessment) of this report.

II. CULTURAL AND HISTORICAL BACKGROUND

This section begins with a review of the available documentary evidence for the general character of the present Kaunua'i Highway project area as it had evolved in the years before western contact in the later 18th century. The development of lands surrounding the highway corridor during the 19th century and into the early 20th century was recorded in increasingly abundant documentation - including government records, private accounts, newspapers, maps and photographs. Finally, during subsequent decades of the 20th century, abundant documentation allows a more precise focus on the Kaunua'i Highway corridor and its environs.

A. Pre-Contact to 1800

In the ancient Hawaiian past, Kaua'i was divided into 5 traditional *moku* or districts: Halele'a, Ko'olau, Puna, Kona and Nā Pali. Much of the Kaunua'i Highway corridor being considered for widening passes through the Puna District and enters into the Kona District. Just beyond where Hule'ia Stream crosses under Half-way Bridge, at Kahoea, marks the boundary between Puna and Kona. This spot also demarcates the traditional Hawaiian boundary between what is considered Pele's domain (Puna) and Kamapua'a's domain (Kona).

Much of the Puna District is a flat plain nestled between the Hā upu mountain range to the south and the Makaleha mountain range on the north. Puna is fed by four main water sources, the Hule'ia River, the Hanamā'ulu River, Ke'ālia River and the Wailua River. Some stories say that the district of Puna was settled by Punamūkaianaina who came to Hawai'i from the Marquesas around 1000 - 1100 A.D. (Formander 1969:46-46).

The gateway that bridged east and west Kaua'i was called simply, the Gap. If there was a Hawaiian name for this Gap, its traditional name did not survive the passage of time.

There is one way through (the) thin mountain ridge (across central Kaua'i), a place where the barrier briefly parts. This lapse in the ridge is the way between east and west Kaua'i. It is called the Gap and travelers have used it since the beginning.

(Joesting 1984:216)

The route of the Kaunua'i Highway runs through the "Gap" between Kahoea and Pu'uomoe (Omoe, on modern-day maps), connecting Līhu'e to south and southwest Kaua'i. Portions of the highway corridor, especially near the Gap within the present project area, likely follow the alignment of the traditional trail system that joined east and west Kaua'i. The Gap itself was the subject of traditional Kaua'i legends and premonitory tales, "for the clump of hau trees formerly near the bend of the mountains at the Gap was said to have been the hiding place of robbers and 'akua's lurked in its hidden depths" (Rice 1991:53).

Further evidence that the Gap marked a well-known and well-traveled area of Kaula'i in pre-contact times was presented in testimonies by native Hawaiians during Commission of Boundaries sessions in the 1870s. These testimonies of the *kama'āhina* recorded in the proceedings of the commission throughout the Hawaiian islands provided otherwise anonymous Hawaiians an unprecedented opportunity to display not only a comprehensive understanding, passed down through generations, of the contours of the *āhupua'a*, but, at the same time, allowed them to reveal local traditions, place names, longer-existing sites including *heiau* and settlements, areas where traditional activities were practiced, and historic events they had witnessed or participated in. Testifying on the boundaries of Kōloa *āhupua'a* in 1874, Hupai stated: "The boundary of Kona and Puna [districts] was at Honea [i.e. above the Gap] that was where the battle flags were hung that was when the battles were fought" (Boundary Commission, Kauai, vol. 1; Hawaii'i State Archives).

East of the Gap, the present highway corridor crosses the Huleia River gulch, an area where traditional Hawaiian agricultural activities dating to pre-contact times have been noted:

The broad delta of the Huleia River is 1.5 miles long and a half mile wide, and is in the *āhupua'a* named Ha'iki, the next to last of the southeasterly valleys of Puna. This area was ideal for wet taro. Terraces continue upriver, and there were terraces up the streams that empty into the river. Old breadfruit and mango trees indicate that there were many Hawaiian *kūleana* up to 6 miles inland from the delta. (Handy and Handy 1972:427)

Traditional accounts give few clues to the exact routes of the trail system east of Gap, and no indication whether the present project area correlates to any pre-contact pathway.

B. 1800 to 1850

The evolution of the route between the Gap and the present Lihue Town - following the general alignment of the present highway corridor project area - would be generated by western-induced cultural and economic developments on Kaula'i begun in the first half of the 19th century.

On December 31, 1834, the Rev. Peter Gulick and his family arrived in Kōloa *āhupua'a*. Apparently the first foreigners to settle in the *āhupua'a* (Gulick had previously been stationed at Waimea), they initiated the process of rapid change that would re-shape Kōloa. In 1835 a 30 by 40 ft. grass house was erected as a meeting house and school. Rev. Gulick initiated sugar cane cultivation and collected a cattle herd for the Protestant Mission. In 1837 an adobe church was built and the first mission doctor, Thomas Lafon, arrived to assist Gulick. The Kōloa mission station apparently flourished immediately; Charles Wilkes, a member of the U.S. Exploring Expedition visiting Kōloa in 1840, recorded:

The population in 1840, was one thousand three hundred and forty-eight. There is a church with one hundred and twenty-six members, but no schools. The teachers set apart for this service were employed by the chiefs, who frequently make use of them to keep their accounts, gather in their taxes &c. The population is here again increasing partly by immigration, whence it was difficult to ascertain its ratio. (Wilkes 1845)

Further confirmation of the growth of Kōloa is given by James Jackson Jarves, who visited Kōloa and Kaula'i for nine months during the early 1840s:

Kōloa is now a flourishing village. A number of neat cottages, prettily situated amid shrubbery have sprung up, within two years past. The population of the place, also, has been constantly increasing, by emigration from other parts of the island. It numbers, now, about two thousand people, including many foreigners, among whom are stationed a missionary preacher, and physician, with their families. (Jarves 1844:100)

The arrival of "many foreigners" was the cause of - and the native emigration to Kōloa was the result of - the many commercial activities that burgeoned beginning in the 1830s. Among these commercial enterprises was Ladd and Company which, in 1836, gained from the king and local chiefs the lease of about one thousand acres at Kōloa to be planted in sugar. The lease ran for 50 years at \$300 a year and "allowed the use of the waterfall and an adjoining mill site at Maulili pool, not far from the thousand acres, together with the right to build roads, the privilege of unrestricted buying and selling and freedom from local herb-herb dues (Judd 1936:57). That the company obtained the "right to build roads" suggests that construction of horse and carriage roads was an early priority of the western homesteaders and entrepreneurs settling at Kōloa on south Kaula'i. Already in the 1830s, according to a visitor, James Townsend, there was "a good road made by the natives over a gentle ascent of about two miles" between the Kōloa landing and the developing Kōloa town (Townsend 1839).

Western homesteading and commerce moved into the lands above Nāwiliwili Bay that would evolve into Lihue Town within a few years after the establishment of the missionary and business activities at Kōloa. Two years after he had arrived at the mission station at Kōloa, Dr. Thomas Lafon moved east to open a branch of the Kōloa church:

In 1839 . . . Lafon made his home in what became known as the Lihue district. The church he was in charge of there had been built by order of Kaikioewa Governor of Kaula'i. There must have been considerable activity in the Lihue area to cause Lafon to move there from Kōloa. James Jarves, who passed through the area in 1840, reported that in addition to the church there was a "straw palace," built for Keawenemahi, the wife of Kaikioewa. (Joesting 1984:153)

Kaikioewa, who died in 1839, had apparently intended to create a "city" at Lihue; according to Jarves, visiting in 1840:

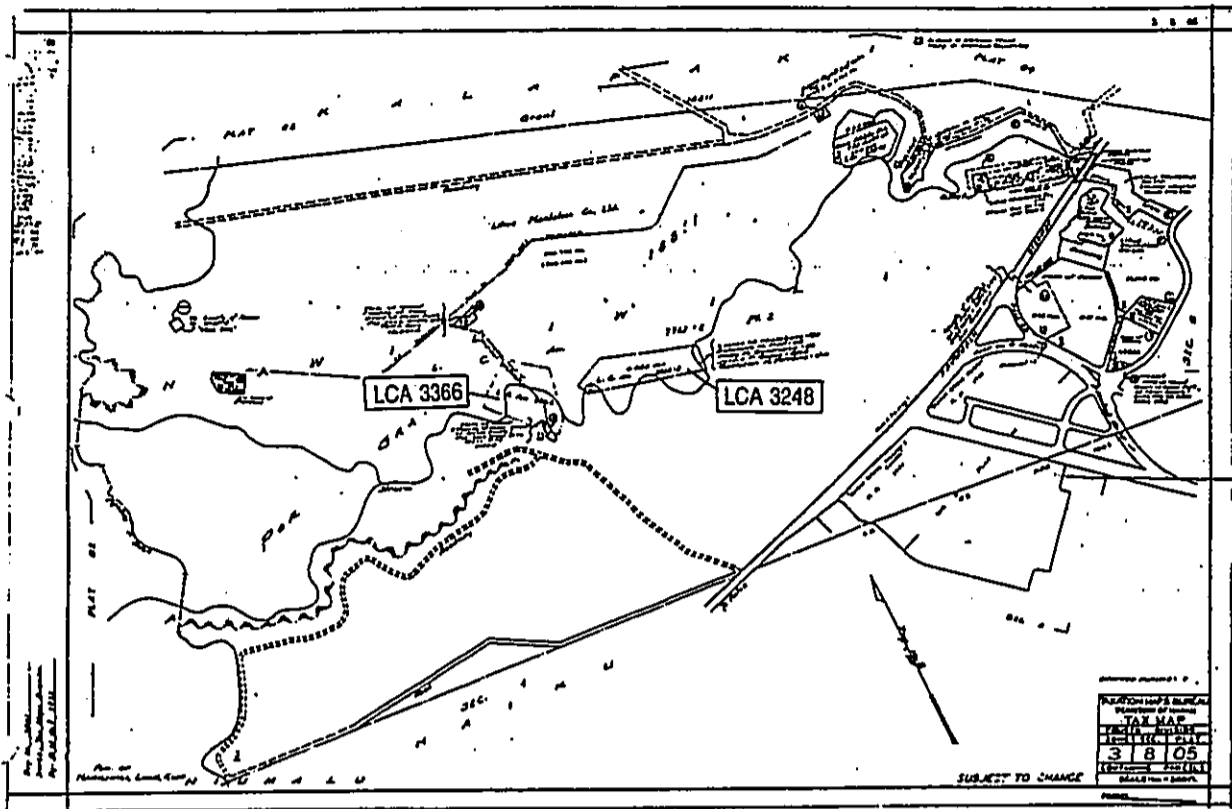


Figure 3 Tax map showing locations of Land Commission Awards north of the Kaunualii Highway project area

There is a fine tract of land which the late governor selected as a site for a plantation, many acres of which he caused to be planted in cane, and also built a large church, and a house for himself. But death soon terminated his scheme, and his city, that was to be, still retains its original diminutiveness ... (in Joesting 1984:153)

Kaikiowa's activities at Lihue did, however, draw a small community of westerns, including Dr. Lafon and his family, to the area, which impelled the creation of a horse trail between Koloa and Lihue area. Accounts of 19th century travellers on the trail between Koloa and Lihue present the first record of the lands surrounding the present Kaunualii Highway. William DeWitt Alexander, son of the former Waiohi missionary William P. Alexander, described a return visit to Kauai in 1849, six years after his family had left the island. Traveling on horseback from Koloa to Waitua, Alexander noted in his diary:

We then rode through a gap in the hills, leading out from Koloa. The scenery was very fine, and worthy of Kauai. Mauna Kahili was close on the left, & on the right a beautiful range of hills extending towards the northeast, and terminating in an abrupt peak which goes by the name of "Hoary Head" [Hau'upu]. We rode on over a beautiful undulating table land, dotted with groves of lauhalia and kukui. After riding about five miles, we crossed a stream fitly called Stoney Brook. We afterwards crossed many other streams on our way. Five miles further we passed Dr. Lafon's former residence. Here we began to descend towards the sea. (Alexander 1991:122)

Apparently, Alexander observed no conspicuous Hawaiian settlements between the Gap and Dr. Lafon's residences in the Lihue area.

Mahale and Land Commission Award Documentation

The Organic Acts of 1845 and 1846 initiated the process of the *Mahale* - the division of Hawaiian lands - which introduced private property into Hawaiian society. In 1848 the crown and the *alii* (royalty) received their land titles. The present Kaunualii Highway project area crosses three *ahupua'a*: Koloa, Ha'iku, and Nawiliwili. Koloa *ahupua'a* was awarded - Land Commission Award (LCA) 7714-B - to Moses Kekuaiwa, brother of Alexander Liholihoho (Kamehameha IV) and Lot Kamehameha (V). Ha'iku and Nawiliwili *ahupua'a* were awarded - LCA 7713 - to Victoria Kamamalu, sister of Kamehameha IV, Kamehameha V, and Moses Kekuaiwa. Documents associated with these awards give no indication of specific land uses or activities within the present highway project area.

Kuleana awards for individual parcels within the *ahupua'a* were subsequently granted in 1850. These awards were presented to tenants - native Hawaiians, naturalized foreigners, non-Hawaiians born in the islands, or long-term resident foreigners - who could prove occupancy on the parcels before 1846 (Apple 1978:45). Current tax maps indicate only two *kuleana* awards in the near vicinity of any portion of the present project area. The two awards - LCA 3366 to Nika and LCA 3248 to Hanale - are located in Nawiliwili *ahupua'a*, along Nawiliwili Stream, to the north of the present highway project area

(Figure 3). Records associated with these awards indicate that the two awarded parcels comprised *taro lo'i*. Additionally, testimony recorded for LCA 3366 indicates that the parcel was "bounded mauka by upper road from Wailua to Kōloa" (Foreign Testimony, vol.13, pg.147), suggesting that, at mid-19th century, the road extending eastward from Kōloa toward the Lihū'e area and on to the northeast coast of Kaua'i ran somewhat to the north of the present project area route.

C. 1850s to 1900

Western commerce at Kōloa and Lihū'e during the second half of the 19th century would further compel the development of an increasingly direct roadway between the two economic centers.

The landing at Kōloa became the official port-of-entry for Kaua'i in the 1850s and the Kōloa inhabitants participated in the profitable trade with the whaling industry whose peak years ran from the 1830s to the 1860s. An article in the *Pacific Commercial Advertiser* of Feb. 19, 1857 described the port and its flourishing commerce at the mid-19th century:

The anchorage is an open roadstead, the tradewind blowing along and a little off shore . . . For the trade of the port there is a small rude pier constructed which might be improved at no great outlay of labor. . . . Large quantities of firewood, bullocks and sweet potatoes are furnished to whalers in this port, and these chattels can no where be procured cheaper or better. It is estimated that 10,000 barrels of sweet potatoes are cultivated annually here, which are thought to be the best in the islands. Nearly all the potatoes furnished for the California market are produced here. . . . Sweet potatoes, sugar and molasses constitute the chief trade of the port.

The records of the Collector General of Customs at Kōloa document the exuberant trade in whale ship provisioning and produce shipping at the port. Typical entries, in addition to potatoes, include: pigs, goats, butter, wood, fowls, oranges, bananas, and eggs. The Many of these goods were transported from east Kaua'i over the Kōloa-Lihū'e road, which continued to be improved. A visitor to Kaua'i in 1865, William T. Brigham, noted described the route between Lihū'e and Kōloa:

From Lihū'e the road led over the plain with the mountains on the left. A ditch crossed and recrossed the road as it wound along the hills from the fountains to the canefields below. Owls (pueo) were very abundant. The Pass over the mountains was very good and not at all steep, and all the way which was some twelve miles, the road was very good, in fact a carriage road. Two hours riding brought me to Dr. Smith's [in Kōloa] at eight. (Lyvigate 1991:143).

The "very good" "carriage road" that Lyvigata observed in 1865 reflected not only the prosperity and activity at Kōloa, but also the growth of Lihū'e. In 1849, the firm of H.A. Peirce & Co. was established for the development of a sugar plantation at Lihū'e. The

company obtained up to 3,000 acres of land and by 1851 a water-driven sugar mill was constructed (on the site of the present Lihū'e sugar mill).

Hawaiians made up the labor force. They built their homes on the land surrounding the mill . . . Planting was begun in 1850 and the first crop, amounting to a little over 100 tons of sugarcane, was ground in 1853. (Joesting 1984:173)

Mary A.G. Rice presented, in 1914, a description of Lihū'e in 1850's when the new plantation was transforming the Lihū'e landscape. Rice describes the area of Lihū'e surrounding the present project area corridor near the plantation mill and the present Lihū'e Public Cemetery:

Though the roads ran somewhat differently from now they are very much the same with the exception that our present grades are vastly improved. . . .

The land extending from the cemetery and up as far as Mr. Stewart's residence and across to Halehaka was formerly one large grove of Kukui trees, flanked on one side by a grove of Koa. Sandal-wood grew in such quantities on the ridges and in the valleys in some sections that there grew up quite a lucrative business in cutting and exporting the same to China.

The Hawaiian village at Pualoki, consisting of thatched houses, extended from near the present cemetery across to the property occupied now as the Hawaiian parsonage and Government school. There were also large settlements of Hawaiians in Halehaka valley, Niūmalu, Nawiliwili and Hanamaulu valleys. (Rice 1991:47)

The cemetery Rice mentions is the present Lihū'e Public Cemetery, located adjacent and to the south of the Kaunua'i Highway, near the present Lihū'e Mill Bridge. According to information provided by the Lihū'e Public Cemetery Association, William Harrison Rice, the manager of the Lihū'e plantation, was the first person buried in the cemetery in 1862 (personal communication: May 29, 1998). (The cemetery also contains the reinterment site of someone who died in 1854.) The cemetery was established by the Rice family and, in subsequent years, the cemetery also became the resting place for members of other prominent families that had settled on Kaua'i. In a ca. 1890s photograph, the cemetery site appears among a stand of trees at the top of a hill overlooking the sugar mill (Figure 4). The photograph also shows that no bridge then spanned Nawiliwili Stream, adjacent to the mill.

Whether the Kōloa-Lihū'e road, during the 1890s, passed below the cemetery, as does the present Kaunua'i Highway is unclear in the photograph. A traveller's description of the period, however, characterizes the roadway clearly. Eric A. Knudsen, recounting a trip around Kaua'i in 1895, describes a horse ride on the Kōloa-Lihū'e road:

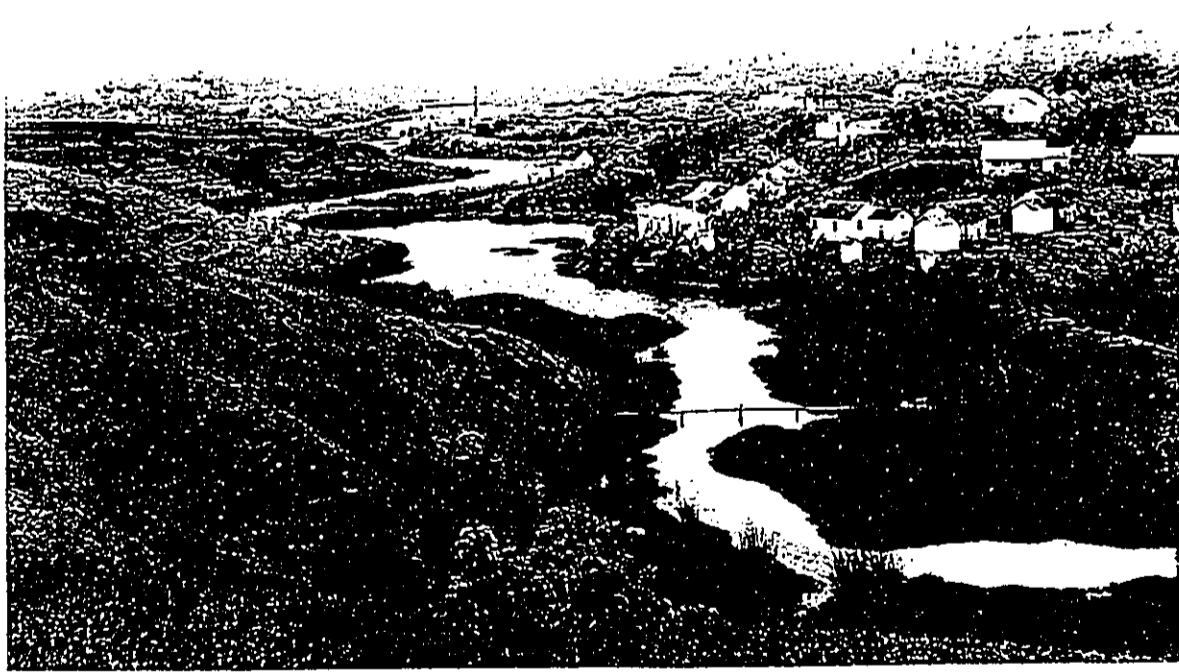


Figure 4 The sugar mill at Lihue, ca. 1890s, showing Lihue cemetery amid trees on hill overlooking the mill (Bishop Museum Archives)

... We dropped down into the Pō'e'e Stream, clambered up only to drop down again into the Ōnia'o River, and finally entered Kōloa Gap and joined the main road again near the base of Pu'u'uomoi [sic. Pu'uomoi].

From there the road led straight on towards Lihue. We crossed the Hulē in River at the Half-way Bridge and soon were riding down through the pasture lands of Grove Farm. The camp called Puhi was not in existence in those days [Knudsen's reminiscence was recorded in 1940] ... There had been a shower and the surface of the road was only half dry and as the horses dashed along they threw back clods of earth. (Knudsen 1991:151)

The area known as Grove Farm "was named from the grove of *kuiku* trees which had stood there since ancient days. In my childhood [Hannah Maria Rice, mid-1850's] it stretched almost up to our house [at Koamalulu]." (Damon 1931:29).

Koamalulu is most often thought of in terms of the Rice family home which was "Scarce a stone's throw" from the original Lihue Plantation store. Maria Rice reminisces about their family home:

Because the little panelled house from China stood in a grove of trees and was shaded by the sickle-shaped leaves of the silvery *koa*, it was called Koamalulu. It is said that Koamalulu was the name likewise of the land immediately surrounding the house, the store and a little further to the east down to Pualoki village, where is now the public grammar school. None of the oldest maps now extant give this name for the land, but one can well imagine that the soft shade of old *koa* trees, growing thick alongside giant *kuiku*s, had imprinted its name upon the land years before white men had planted there a house from across the China sea. (Damon 1931:451-52)

Near the end of the 19th century, the route through the Gap and on to Lihue remained an unpaved, dirt carriage road.

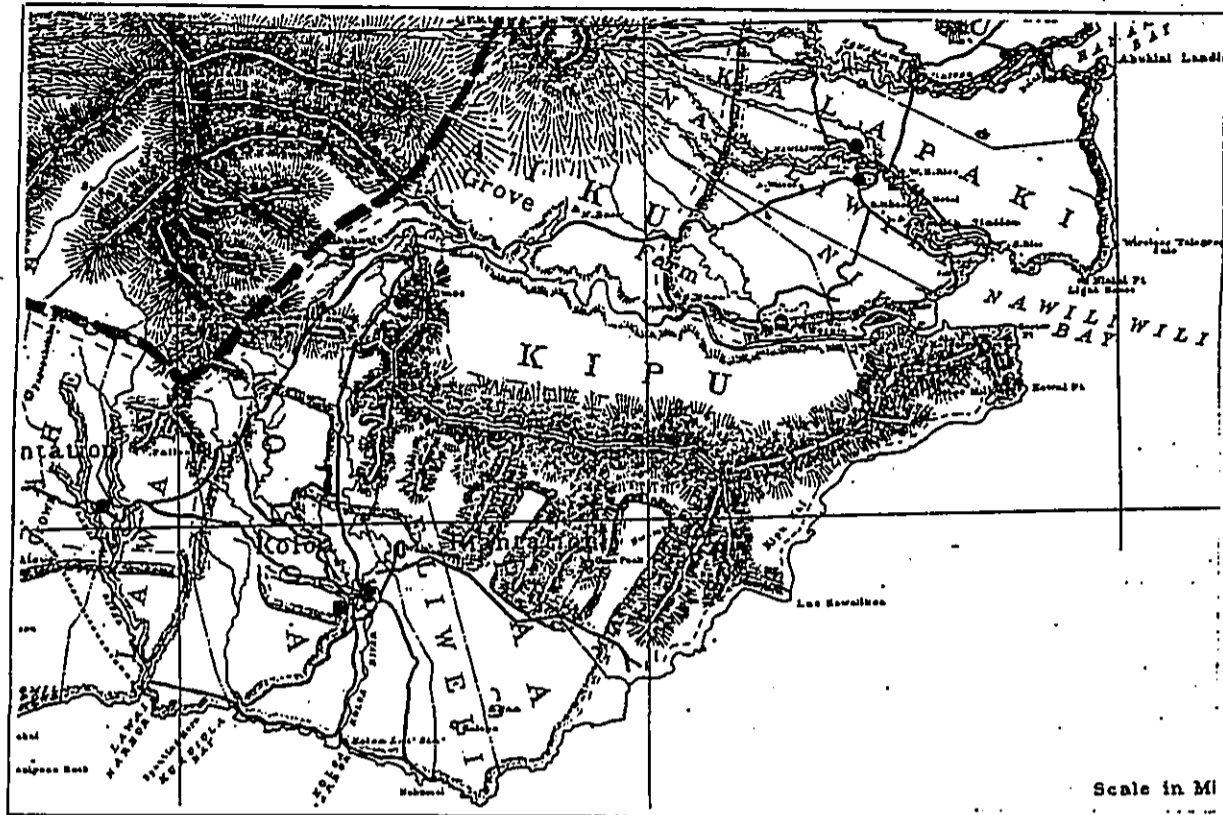


Figure 5 Portion of 1903 Hawai'i Territory Survey map of Kaua'i showing road from Lihue to south and southwest Kaua'i

D. 1900s to Present

By the first decade of the 20th century, the road between the Gap and Lihue was a portion of a road system extending from the southwest coast to the northeast coast of Kaua'i. A Hawaii Territory Survey map of 1903 shows that the road between the Gap and Lihue followed a much more irregular route, likely following the most accessible contours of the landscape, than that of the present Kaunua'i Highway project area (Figure 5). The map indicates that, toward Lihue, the road did not extend to the sugar mill but veered to the southeast (along the route of the present road to Niwiliwili).

Other 20th century documents record improvements to the Kaua'i road system and developments to the landscape adjacent to the present Kaunua'i Highway project area. Hans Isenberg, minister of the Lutheran church at Lihue, observed in his journal in 1909: "Macadam roads increasing on the island" (in Damon 1931:914). According to Isenberg, at the Lihue cemetery, in 1911, some trees had been planted and the outer graves fenced to keep out horses. Also on May 6th of that year, the first meeting of the Lihue Public Cemetery Association was held (*Ibid.*:914).

The 1903 map also shows the Kōloa-Lihue road extending across "Grove Farm", a sugar plantation which had been established several decades earlier in the 19th century:

George N. Wilcox bought the embryo Grove Farm plantation in 1870 from Herman Widemann for \$12,000, three-quarters of which was borrowed. Four years later he had 200 acres under cultivation. In 1881 Wilcox bought 10,500 acres of land at Haiku from Princess Ruth. This increased the acreage of Grove Farm tenfold and made the plantation economically feasible. With machines, irrigation ditches, and Wilcox's ability, it became a very profitable enterprise. (Joesting 1984:221)

In the 1920s, Grove Farm began a building program at Puhi, along the route of the present Kaunua'i Highway:

About 1920 George [Wilcox] began construction of a completely modern camp at Puhi in the heart of the expanding plantation. Instead of building houses haphazardly as new families moved in, a complete village was laid out with streets, a playground, room for gardens, and lawns. The houses had proper kitchens equipped with running water and enough bedrooms for each family depending upon the number of children. (Krauss 1965:310)

As indicated by an aerial photograph of 1924, Lihue, was by then a burgeoning plantation town and the county seat, with sugar plantation operations existing in close proximity to government buildings (Figure 6). Another photograph from the 1920s indicates that the Kōloa-Lihue route remained a dirt road minimally cut through the surrounding terrain (Figure 7).



Figure 5. View of road between Lihine and Kolen, Kamerun, 1925. Bishop Mission Archives.

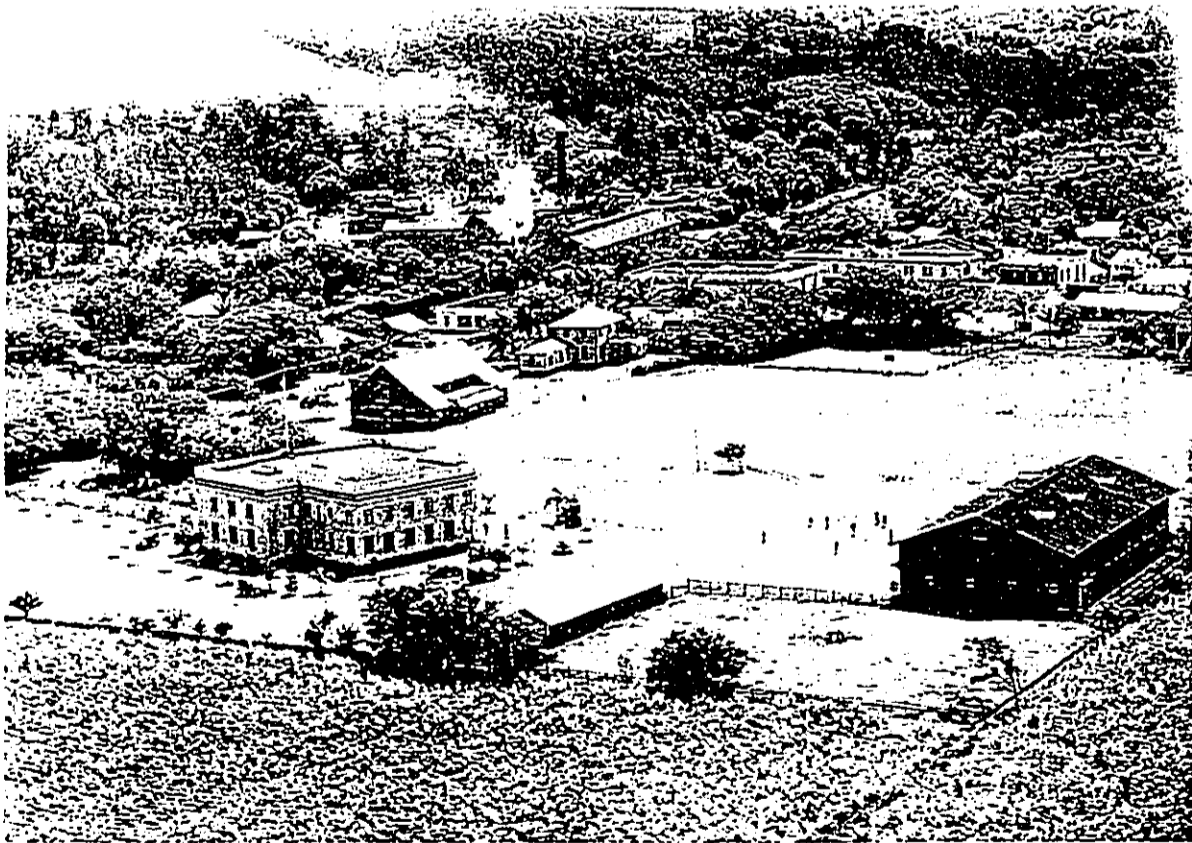


Figure 6. The center of Lihine, Kamerun, 1924. Bishop Mission Archives.

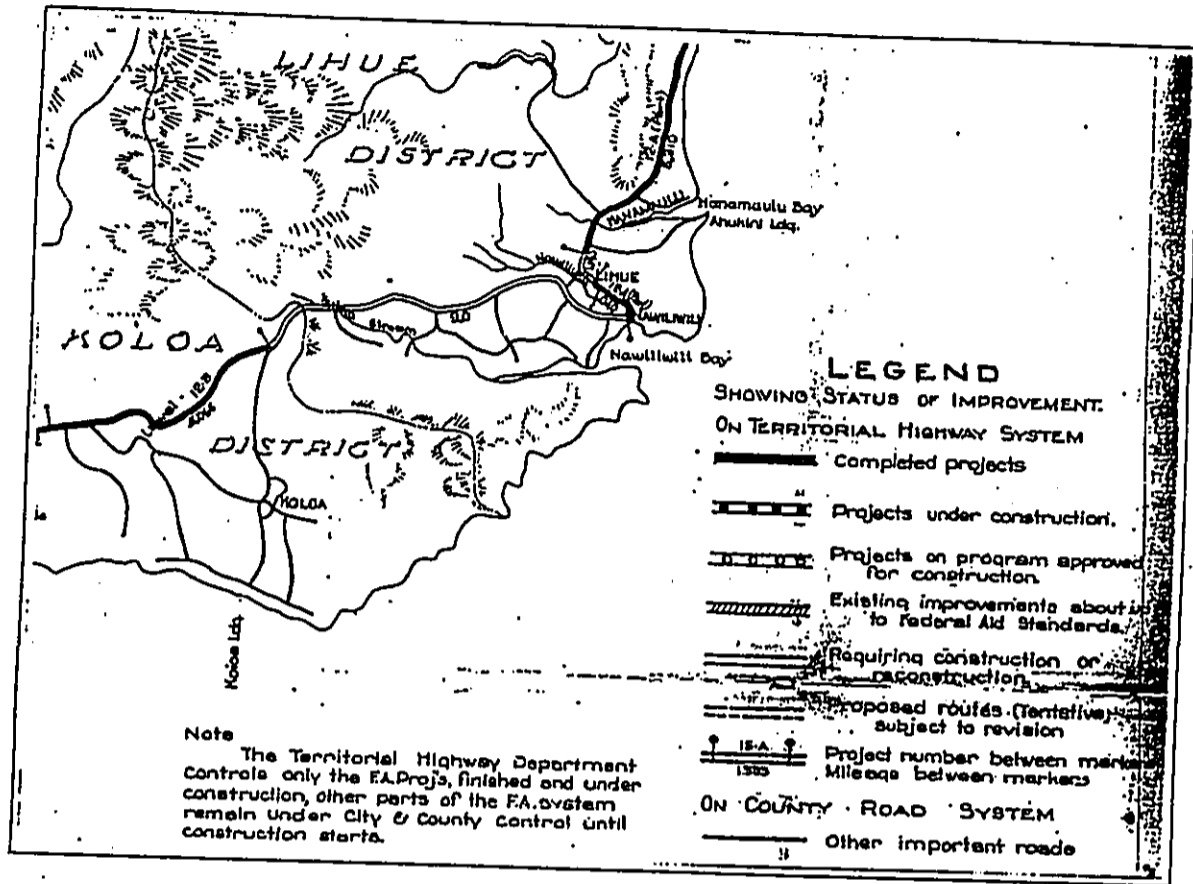


Figure 8 1935 Territorial Highway Department map showing the completed portion - Project NRH 12-B - of the Kaua'i Belt Road-present Kaunualii Highway project area

It was during the 1930s, when Federal funds became available to assist the Territory Highway project area accelerated. On October 10, 1933, Hawaiian Contracting Co., Ltd. was awarded a \$354,366.63 contract for construction of a 5.066-mile long portion of the Kaua'i Belt Road (i.e. the present Kaunualii Highway) extending west from the junction with the road to Koloa. The project, identified as NRH 12-B, was funded by the National Recovery Highway Fund, the Federal Aid Fund, and a contribution by the County of Kaua'i. A 1935 map issued by the Territorial Highway Department shows that project 12-B had been completed and that the rest of the Belt Road to Lihue required "construction or reconstruction" (Figure 8).

The "construction or reconstruction" of the Belt Road was completed incrementally during subsequent years. In 1936, Hawaiian Contracting Co. was awarded contracts for construction of the road east of the Koloa, projects WPH-12-H and FAP-12-G comprising a total of 2.573 miles. The Territorial Highway Department map of July 1, 1936 indicates that the two projects were then under construction (Figure 9).

At the same time that the Belt Road construction program was underway, during the mid-1930s, Grove Farm was further expanding into Puhii. It moved its headquarters there, constructing a new office building, shop and stables.

The new plantation headquarters was a snug, concrete building with grey-white walls and a Hawaiian style roof of grey cement shingles. Broadbent (the plantation manager) and Alexander (the assistant manager) shared a room almost as big as the entire old office. Time keepers had the main room, the bookkeeper a space for himself. The engineering department worked in another small room and supervisors had desks for filling out reports.

Nearby, across the compound, young Bill Moragne was busy erecting an all electric-powered plantation repair shop. By the end of 1935, Grove Farm would be the most modern, best-equipped plantation in the Territory of Hawaii. (*Ibid.*:336)

A 1938 photograph shows the plantation headquarters building at Puhii, adjacent to the newly-completed section (FAP 12-F) of the Belt Road (Figure 10).

By December of 1950, the Kauai Belt Road from Koloa to Lihue was completed, the total route comprising two projects (Figure 11). Project No. F 12 (17) covered the construction to Nāwiliwili; final cost of the project was \$255,860.00. At the Nāwiliwili road junction, an additional project - No. F 24 (2) costing \$34,162.56 - extended the Belt Road 0.616 miles directly into Lihue Town over the Lihue Mill Bridge. The bridge itself was constructed by the Territorial Highway Department in 1936. Adjacent to the Lihue Mill Bridge, the Ho'omana Bridge had been constructed earlier, in 1928, by the Lihue Plantation over a railroad alignment leading to its sugar mill.

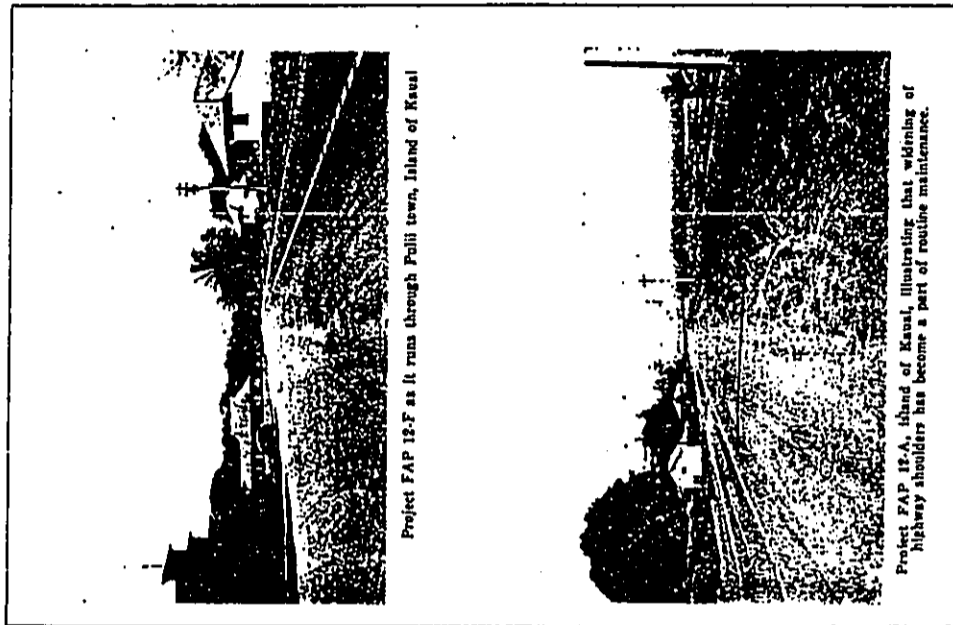


Figure 10 Grove Farm buildings at Pali in 1938 (from Report to the Governor... by the Superintendent of Public Works for the Year Ending June 30, 1938)

21

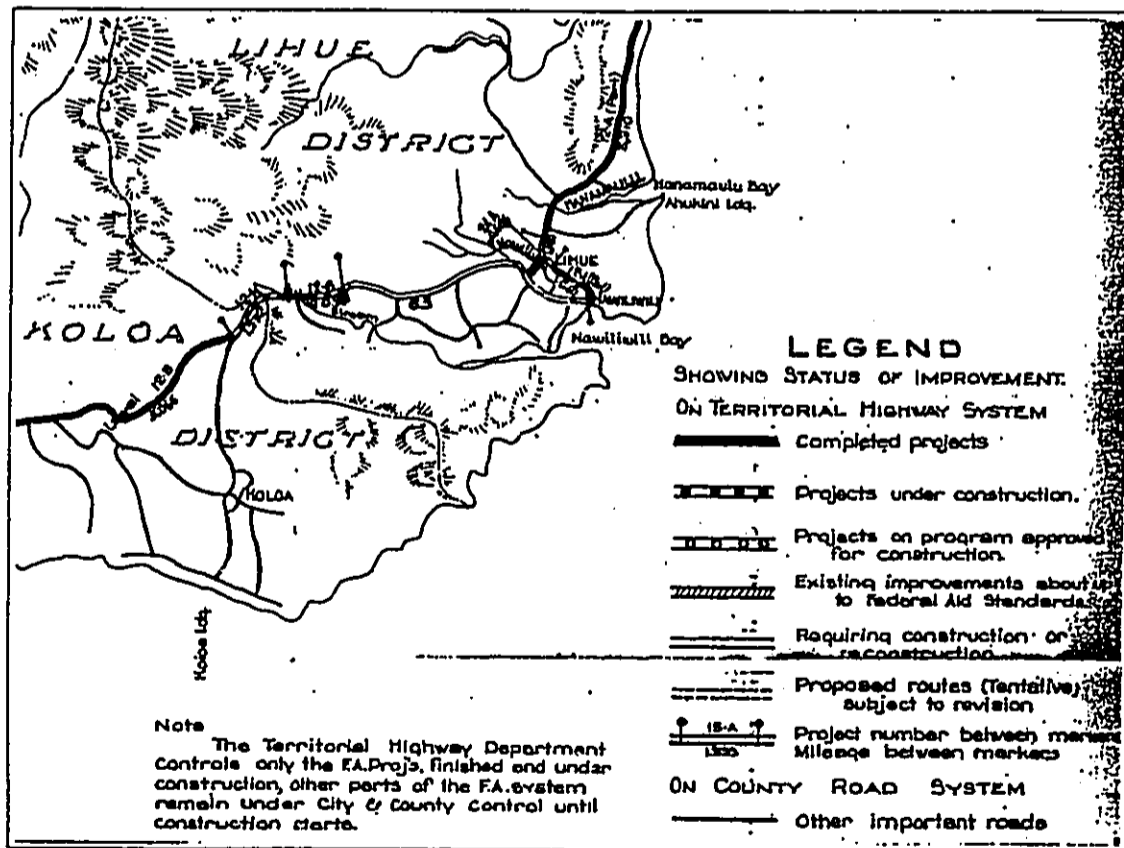


Figure 9 1936 Territorial Highway Department map showing portions of the Kaula'i Belt Road-present Kaula'i Highway project area then under construction

A set of aerial photographs (taken on November 22, 1950) of the Kaua'i Belt Road - present Kaumuali'i Highway project area (on file at Cultural Surveys Hawaii) shows sugarcane fields planted on the flat lands along almost the entire length of the Belt Road, just before its December 20, 1950 completion date. The only areas where historic-era constructions are visible in close proximity or adjacent to the Belt Road-present Kaumuali'i Highway project area are at Pūhi and at the Lūh'e (east) end of the project area (Figures 11 & 12). At Pūhi, the Grove Farm plantation camp and headquarters buildings are visible immediately adjacent to the road right-of-way, just as shown in the earlier 1938 photograph (See figure 10 above).

At the Lūh'e end of the present project area are the Hō'omana Overpass and Lūh'e Mill bridges. Also visible, in the 1950 aerial photograph, are buildings on both sides of the Belt Road, just beyond the mill bridge. According to information provided by Mr. Hoby Goodale, a longtime *Kama'āina* resident of Kaua'i, these buildings comprised the "Kiipāki Camp", named for the plantation workers from the Gilbert Islands who once resided there (personal communication: May 29, 1998). Mr. Goodale also recalled vegetable gardens planted in the camp area. The camp remained in existence through the 1950's and into the 1960's. Sometime later, the camp was removed.

1977-78 orthophotoquad maps of the entire length of the present Kaumuali'i Highway project area show the sugarcane fields that, through most of this century, have girded the route between Lūh'e and the Gap (Figures 13 & 14). The only significant area, along the present Kaumuali'i Highway corridor, that appears to have escaped sugarcane cultivation is the Hūle'ia River Gulch. This gulch area would be otherwise impacted in 1989 when the Kaumuali'i Highway was improved by a new 420-foot concrete bridge across the Hūle'ia River. The bridge replaced the old "Halfway Bridge" which had been constructed in the 1930s. The new bridge marked the last major construction and modernization project within the present Kaumuali'i Highway project area until the present.

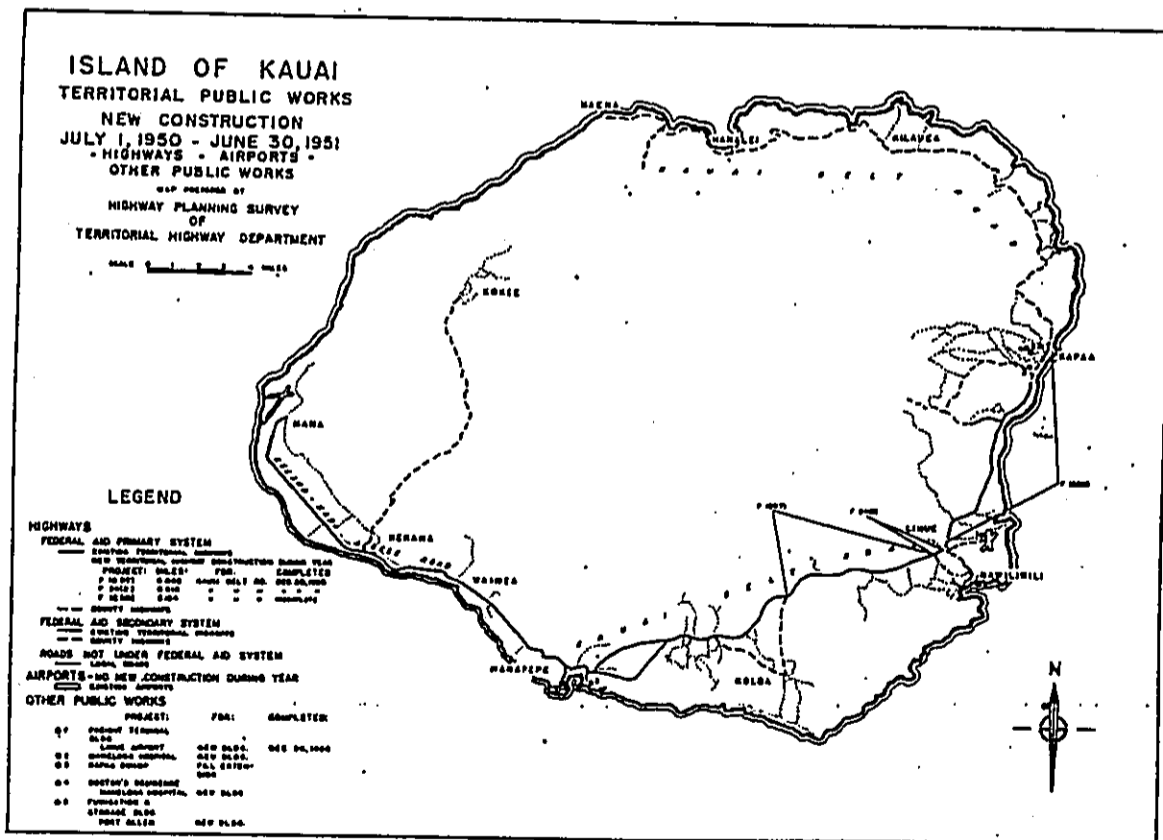


Figure 11 1951 Territorial Highway Department map showing completed Kaua'i Belt Road projects F 12 (17) and F 24 (2)



Figure 13 1950 aerial photograph showing Lahur'e end of Kana'a Belt Road (Lt M Towill)

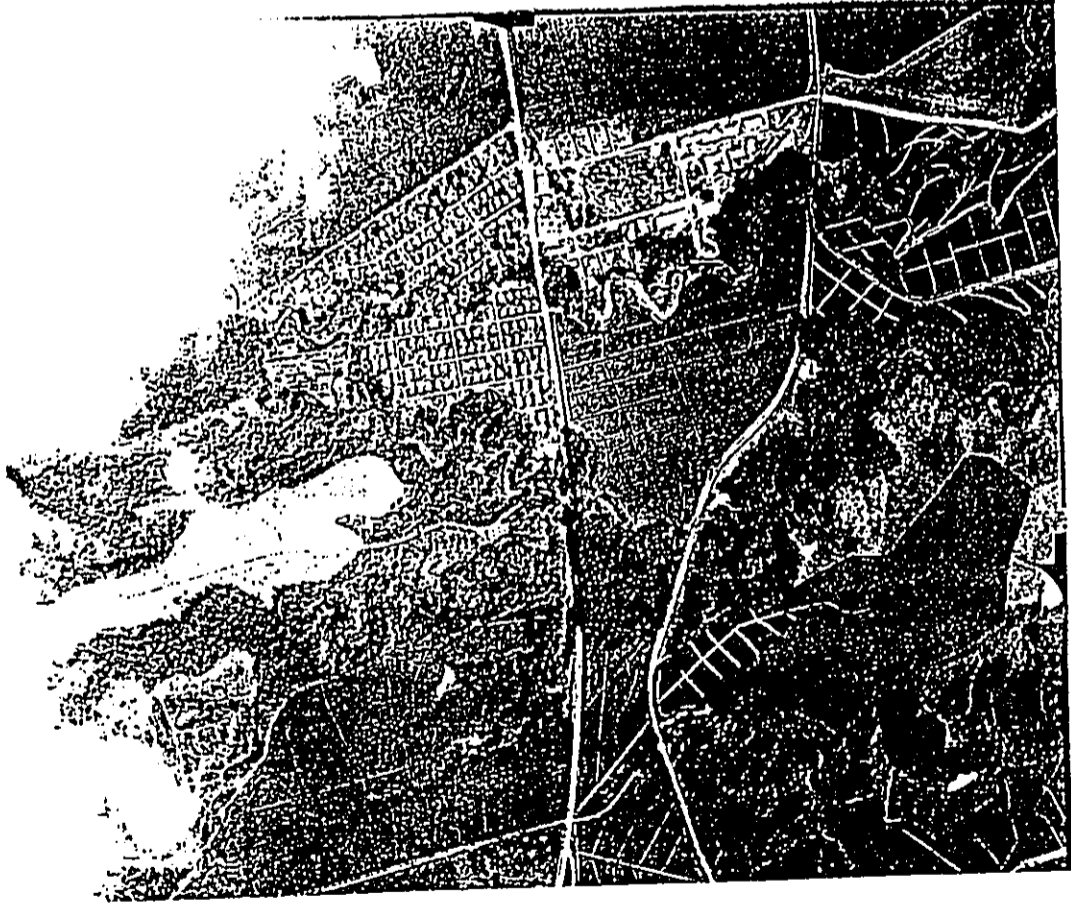


Figure 12 1950 aerial photograph showing Kana'a Belt Road through Grove Farm Poho Camp area (Lt M Towill)

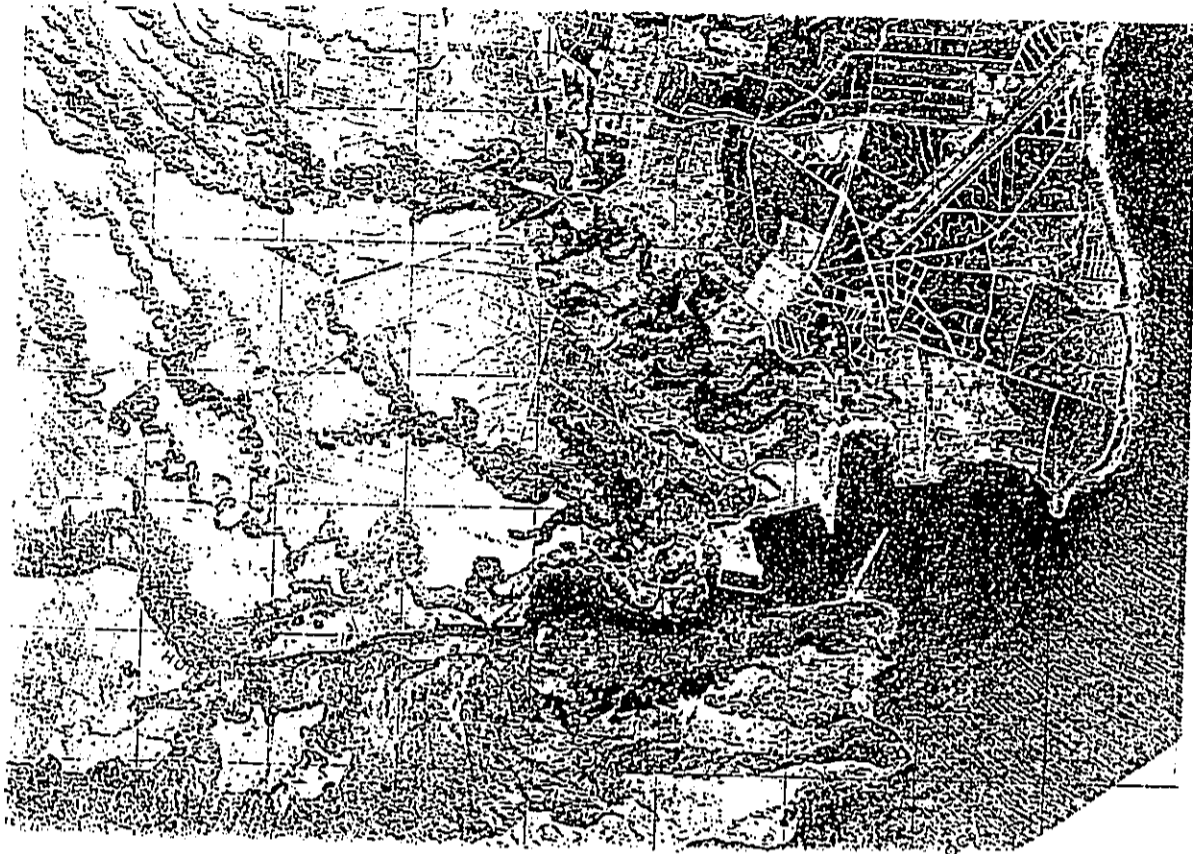


Figure 15 1977-78 U.S.G.S. orthophotoquad map showing eastern portion of the Kaua'i Belt Road-present Kaunualii Highway corridor project area

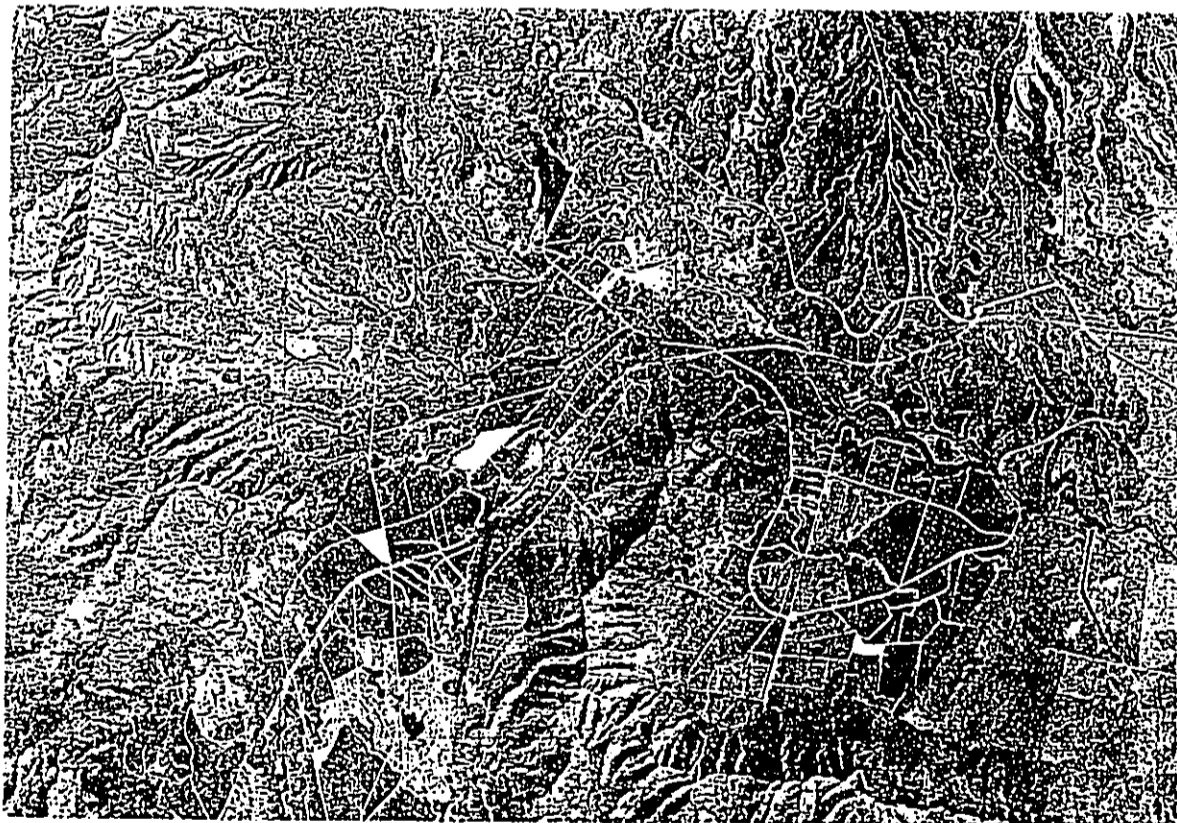


Figure 14 1977-78 U.S.G.S. orthophotoquad map showing western portion of the Kaua'i Belt Road-present Kaunualii Highway corridor project area

E. Annotated List of Place Names

An analysis of place names can offer insight into traditional life-ways. Sometimes, land use practices can often be gleaned from a study of place names in the vicinity. Often, names reflect native flora and fauna that once populated the landscape, such as Nāwiliwili, named for its huge grove of *wiliwili* trees. The following list of place names of the adjacent and surrounding areas of the Kaunualāi Highway corridor is an attempt to do such an analysis through study of the place names and their relationship to the surrounding environment.

The place names mentioned below are a testament to the rich and colorful folk-lore and mythology of the Hawaiian people. The majority of the names relate to a particular person or an event in time and act as cultural markers for these events. In Hawaiian culture, speech or the spoken word was of utmost importance. Thus, the saying at the end of a traditional prayer, "*Ua lēle ka pūlē*", meaning "*The prayer has flown*" — the words have been spoken; they have been given wings and have flown off (*lēle*), putting energy into motion. Once gone, they cannot be called back. A place name carries with it the story of that place, as well as any cultural values the story might impart (i.e., *Weoweopūlau*, a reminder to be hospitable to strangers). Place names are also a testament to how observant Hawaiians were of their world around them, of life cycles and relationships (i.e., when the *lau* flower is in bloom, the *hā'ūke'ūke* are *mōmona* or ready to be eaten). An attempt was made to relate to all things, both animate and inanimate. The more a place name is used, the more likely that its story will be retold and remembered. So, it is important to continue to use the old and traditional place names given so long ago, but it is even more important to tell their stories — for in the stories are imbedded the protocols and values that shaped and moulded Hawaiian culture and which provide invaluable insight into the not-so-distant past.

Hā'ikū: Land section, Līhu'e district. *Lit.*, speak abruptly or sharp break (Pukui, *et al.*, 1986:34). A more recent version of the meaning of Hā'ikū is told by Frederick R. Wichman. In this version, Hā'ikū means "pushed through" and relates to the story of Pele being raped by Kamapua'a and of their stormy relationship (1998:51).

Halenānāhau: Stream and reservoir, Līhu'e district. *Lit.*, charcoal house.

Hanamā'ulu: the birthplace and home of Kawaio and "an important part of the Līhu'e section" (Elbert 1982:32, *fn*; 112). *Lit.*, tired (as from walking) bay (Pukui, *et al.*, 1986:41). So named because it was off the beaten path and main trail. Thus, a traveler had to go out of his way and walk extra miles to get there, arriving with sore feet and little or nothing to eat at the end of the journey. An *'āelo no'ēau* is a reminder of this: *No Hanamā'ulu ka ipu pūehū. From Hanamā'ulu, comes the empty gourd* (Judd 1988:51). Also a reference to stinginess. Once, some travelers heard the sound of poi pounders in the distance. Expecting to have fresh poi at the end of their journey, they were disappointed to find the villagers apologizing for not having any food for them. That night, the visitors went to bed hungry. Thus, the reputation that Hanamā'ulu people are stingy (Wichman 1998:60-61).

Hā'upu: peak (2,297 ft.) and ridge, Līhu'e district, probably named for a demigod and giant. Also called "Hoary Head" (Pukui, *et al.*, 1986:42). Hā'ika offered a chant in honor of Hā'upu Ridge (Emerson 1993:107) "A famous hill on Kaua'i, visible from O'ahu. When it was capped with a cloud, Hawaiians said, "*Ua kau mai ka pua'a i Hā'upu; e ua ana.*" If this occurred during the rainy season, it was a sign that it would soon clear (Emerson 1993:107, *fn*). *Lit.*, recollection (Pukui, *et al.*, 1986:42).

There are several stories related to Hā'upu Ridge. One tells of a giant by the same name who over reacted violently to sounds. The ruling chief, at that time, sent Hā'upu to the top of the mountain to watch for invading war fleets approaching by sea. One night, Hā'upu was awakened by voices and, in the distance, he could see lights approaching from the direction of O'ahu. Thinking it was an invasion, Hā'upu threw some huge boulders in the direction of O'ahu. The lights and the voices died out. A few days later, it was reported that the chief of Wai'anae, had held a fishing festival at night. The chief, along with many of his people, had been killed by huge rocks falling from the sky. A legendary stone called Pōhaku o Kaua'i is said to be at Ka'ena Point (Wichman 1998:55-56).

On the Hā'upu side, there is a profile of a woman holding her finger to her lips as in a warning. This is said to be Hinaiuka's profile, which warns all visitors that "Kaua'i's beauties are beyond compare." The profile is a reminder of a beauty contest between Pele'ula of O'ahu and Hinaiuka of Kaua'i. The prize was Kāhili, a handsome young chief (Wichman 1998:56).

Ho'inakāunalehua: Stream, Līhu'e district. *Lit.*, return [of] four *lehua* blossoms (Pukui, *et al.*, 1986:47).

Hulā'ia: older name for Hulē'ia Stream. *Lit.*, pushed through (Kamapua'a ravished Pele here) (Pukui, *et al.*, 1986:53).

Ka'ahu'ula: [Ka'ahu'ū'ula on the 1912 USGS Topographic map of Kaua'i] a ridge that comes down to the Puna plains from Kāhili Mountain and an odd reference to the "red parrotfish" (Wichman 1998:39). It would make more logic for this to be a reference to a "red feather cloak" due to its location inland where Hawaiian birds might have been caught for their prized feathers. Perhaps, we will never know the story behind this name.

Kāhili: land division and peak (3,016 ft.), Waimea District. *Lit.*, feather standard (Pukui, *et al.*, 1986:65-65).

Kahonua: land section near the border between Kōhala and Līhu'e districts. In the story of the battle between Kamapua'a and Makali'i, Kamapua'a kills Ahuli here at Kahonua (Elbert 1982:232). *Lit.*, coming up [of] the companion (Pukui, *et al.*, 1986:65). Also said to be the boundary between Kona and Puna districts (Boundary Commission, Kaua'i, Vol. 1: Hawaii's State Archives).

Kaliopaki: the story related to the name has been lost. *Lit.*, double-yolked egg (Wichman 1998:59).

Kahalaia: Mountain, Kōloa district. Pronunciation and meaning uncertain (Pukui, *et al.*, 1986:79).

Kamo'ōloa: Birthplace of Paiaha and the site of many battles fought between the warring Kona and Puna districts (Wichman 1998:39). *Lit.*, a long, narrow strip of land.

Kapaia: Village, stream and reservoir, Lihū'e district. *Lit.*, the walls or bowers (Pukui, *et al.*, 1986:87).

Kipū: land division, Lihū'e district. Mention is made of Kamapua'a landing at Kipū in the story of his battle with Makali'i (Elbert 1982:226). *Lit.*, hold back (Pukui, *et al.*, 1986:113).

Kōloa: not to be confused with the Hawaiian "Kōloa" duck. 'Aikanaka built a sacrificial *aeiau* at Maulili (*Lit.*, constant jealousy; Wichman 1998:40) in Kōloa. Taken for dead, Kawelo was brought to Maulili to be sacrificed. Instead, he rose up and killed 'Aikanaka (Elbert 1982:108). In another account, the district was named for a steep rock called *Paikō* (Pukui, *et al.*, 1986:116). Also the old name for Waitā Reservoir at Grove Farm (Pukui, *et al.*, 1986:228). It's traditional meaning is lost and Pukui, *et al.*, does not attempt to offer a translation.

Wichman (1998:43) suggests two other possible meanings: 1) a reference to the native Kōloa (without any diacritical markings) duck; 2) a reference to long or tall sugarcane (*Kō*). Wichman notes: "Kōloa is the preferred pronunciation today as it reflects the area's history of sugar manufacturing, which began in 1835 and ended in 1996. Yet the correct name may be Kōloa, for a now extinct three-foot-high flightless bird whose skeleton has been found in this area (1998:178).

La'auhaha'ihā'i: Land area, Kōloa district. *Lit.*, broken yam vine.

Lihū'e: formerly included the land divisions of Kawaihau and Lihū'e. "Lihū'e, in a local sense, and from which the name of the district was derived, meant only that little portion of land upon which the present village, as consisting of bank, post office and store, now stands." (Rice in Kaunā'i Papers 1991:46) *Lit.*, cold chill (Pukui, *et al.*, 1986:132). According to Wichman (1998:59), Governor Kaikio'ewa, the first governor of Kaunā'i, built a home and named it Lihū'e after his home town on O'ahu. The old name for Lihū'e was Kala'iamea (calm reddish brown place).

Makaleha: stream and mountains, Kawaihau district, Kaunā'i. *Lit.*, eyes looking about as in wonder and admiration.

Nāwiliwili: Just like the name implies, this area was once famous for its grove of *wiliwili* trees. *Nāwiliwili* paka 'āwiliwili' i'ilia (*wiliwili* trees upon which raindrops fall, twisting the leaves so the rain touches both sides) is said to be the full name of this land section (Wichman 1998:58-59). *Lit.*, the *wiliwili* trees (Pukui, *et al.*, 1986:164).

Niumahu: land division. *Lit.*, shade (of coconut trees) (Pukui, *et al.*, 1986:166). A reference to the story of Kapūnohu who threw his spear toward Anahōhō. As it flew over Niumahu, it shaded the coconut trees (Wichman 1998:57).

Puhī: village and stream, Lihū'e district. Where Kaholiakāne (the sprouting (made) by Kāne), a shark god, lived in a cave. *Lit.*, blow (Pukui, *et al.*, 1986:192).

Pū'ukolo: hill in south central Kaunā'i, said to be the legendary home of Pāka'a and Kūapāka'a. *Lit.*, crawl or pull (Pukui, *et al.*, 1986:116).

Pū'uomoe: simply called "Omoe" on most modern historic maps. It's traditional Hawaiian meaning and related story seems to have been lost. It could be translated as "hill of sleep" or "hill of prostration".

Waitā: A historic Hawaiian name for the reservoir at Grove Farm, which was formerly called Kōloa. Pukui, *et al.*, conjectures a possible meaning of *wai* (for water) and *tā* (Japanese for rice paddy) (1986:228).

Weoweopillau: stream on the plains of Kamo'ōloa. It relates to a story of an upland farmer who went fishing for 'āweoweo down at the coast. On his way home, he passed an old woman who asked for a few fish. The farmer refused her request. As the farmer continued on his way, his load of fish got heavier and heavier. When he reached the stream, he put the fish down and went for a refreshing swim. Upon coming out of the stream, he smelled that his fish were rotten. He then realized that the "old woman" was Pele who had punished him for his stinginess (Wichman 1998:40).

F. Botanical Survey

A botanical survey was conducted by Winona P. Char (Char and Associates) in relation to three previously identified wetland sites along Kaunualii Highway. No other wetland sites were identified. Char and Associates identified a total of 21 plant species among the three wetland areas mentioned above. Of the 21 plant species identified, five are native and two are questionably native; one is a Polynesian introduction and one plant is questionably a Polynesian introduction. Twelve plant species are alien introductions. A botanical analysis may offer insight into patterns of native gathering practices. The 9 plants, along with their known uses, are discussed below.

Hawaiian Name: *neke* (from *nakeke*, to rustle); could refer to the sound of the fronds rubbing together (Valier 1995:58).

Other Names: Swamp cyclosorus

Scientific Name: *Cyclosorus interruptus* ("interrupted, circular spore clusters")

Ethnobotanical Uses: none known

Biogeographical status: indigenous

Hawaiian Name: *hau*

Scientific Name: *Hibiscus tiliaceus* L.

Ethnobotanical Uses: The bast fibers of this species were formerly used for cordage and the light wood for the spars of the outriggers of canoes, and occasionally for the outrigger float, as well as floats for fishnets. Fires were started by friction from rubbing a pointed stick of a harder wood such as *Perrottetia* against a grooved piece of the much softer *hau*. The flowers and bark were also used medicinally (Wagner, Herbert & Sohmer 1990:888).

Biogeographical status: indigenous?

Proverb: *Ka makani ho'ihai i lau hau o Olowalu*. The hau-leaf tearing wind of Olowalu (A gusty wind) (Pukui 1983:157; O.N. #1457).

Hawaiian Name: *kānole*; and further classified by *lau li'i* (small leaf) or *lau nui* (big leaf). Also called *alohalua*.

Other Names: *primrose willow*

Scientific Name: *Ludwigia octovalvis* (Jacq.) Raven

Ethnobotanical Uses: medicinal, tea, dyes (black or yellow); also used in *hana aloha* sorcery.

Biogeographical status: Polynesian?

Hawaiian Name: *kalo*

Other Names: *taro*

Scientific Name: *Colocasia esculenta* (L.) Schott

Ethnobotanical Uses: major food source; certain types of *kalo* were considered good to eat for a *lā'au lapa'au* student in training. *Kalo* was one of the foods that were "special" to Lono, the patron deity of *lā'au lapa'au* and it was used in the ceremony which marked a student passing from one level of training to the next higher level (Gutmanis 1989:15-16).

Biogeographical status: Polynesian

Proverb: Pukui lists 33 *'ā'alo na'enu* for *kalo*, signifying its importance in Hawaiian culture and as the staff of life.

Hawaiian Name: *niki*; also called *'aha nui*

Other Names: *saw-grass*; Pele grass, volcano grass

Scientific Name: *Cladium jamaicense* Crantz

Ethnobotanical Uses: the leaves were used for tying (like sennit, thus the nickname *'aha nui*)

Biogeographical status: Indigenous

Hawaiian Name: *makaloa*

Scientific Name: *Cyperus laevigatus* L.

Ethnobotanical Uses: woven into soft, fine mats for the *ali'i*

Biogeographical status: Indigenous

Proverb: *Moena pūwehe o Ni'ihau* (*Patterned mat of Ni'ihau*). A poetic reference to Ni'ihau which was famous for beautifully patterned makaloa mats (Pukui 1983:236; O.N. #2176).

Hawaiian Name: not known

Scientific Name: *Pycreus polystachyos* - (Retth.) P. Berau.

Ethnobotanical Uses: not known

Biogeographical status: Indigenous

Hawaiian Name: *'aka'akai*

Other Names: great bulrush

Scientific Name: *Schoenoplectus lacustris* (L.) Palla

Ethnobotanical Uses: the large stems were used like grass or *ti* leaves for thatching, or braided into mats for the under layers of beds and for temporary purposes. It is not a durable material (Neal 1965:89).

Biogeographical status: Indigenous

Hawaiian Name: *mau'u laiki*

Other Names: *ricegrass*

Scientific Name: *Paspalum scobiculatum* L.

Ethnobotanical Uses: used like *pili* to thatch houses (Neal 1965:73).

Biogeographical status: Indigenous?

On June 23rd, a field inspection of the proposed Kaunualii Highway corridor was conducted by two archaeologists walking on each side of the corridor, paying special attention to roadside plants. Species of native plants commonly growing alongside highways were identified, such as *laukahi*, *uhaloa*, *'iima*, *laua'e*, *kupukupu* and *utule*. These plants are commonly found at similar elevations and environments throughout the islands and none of the above plants are rare or endangered. Other species seen alongside the roadway were *mai'a*, *kukui*, *niiu*, *hala* and mango, though no large groves or concentrations of these trees were noted.

III. RESULTS OF THE CULTURAL ASSESSMENT

The following areas relating to cultural practices were considered as part of this cultural assessment: trails, native hunting and fishing, native gathering, *heiau* and religious sites, other archaeological sites, burials and identifying knowledgeable *kāpuna* and *kama'āna* residents to interview. A discussion of each topic follows below.

A. Trails

Research of historic 19th century maps gave no indication of any specific routes or traditional Hawaiian trails that crossed over or went through the Kaumuali'i Highway corridor. However, it is probable that part of the Highway, especially near the Gap, does follow the old alignment. This area, which served to connect the Kona district with the Puna district, was documented in native testimonies to the Commission of Boundaries and in early 19th century accounts.

B. Native Hunting and fishing

Kaua'i is home to the black-tailed deer (Waimea Canyon), the wild pig and goat. Kaua'i is also a habitat for the honey bee. During the field inspection, a pig trail was observed in Hale'i'a Gulch. None of the above mammals were seen on the site visit. During the course of this study, no native hunting or fishing practices were identified within the immediate or adjacent areas of the highway corridor.

C. Native Gathering

The Highway corridor and adjacent areas are home to predominantly introduced and alien plant species. One individual, Cheryl Lovell-Obatake, indicated that when she was growing up, she had heard from a classmate that the valley way back behind Koamalu was a resource for gathering medicinal plants for healing. Her classmate's grandmother was a *kahuna* who practiced the healing arts. No other information regarding the valley name, exact location or this valley as an area of cultural practice was obtained. Ms. Lovell-Obatake did not know of anyone who performed cultural practices within the immediate Highway corridor.

No information related to current and ongoing cultural practices for gathering, or for religious or cultural purposes was identified.

D. Heiau and Shrine Sites

Wendell Bennett (1931) conducted the first comprehensive archaeological survey of Kaua'i in the early 1930's. Bennett's survey report identifies no *heiau* or religious sites within or in the vicinity of the present Kaumuali'i Highway corridor project area. "Talk-story" with people in the community did not offer any new insights regarding the likelihood of possible *heiau*, shrine or religious sites in and about the proposed project area.

E. Other Archaeological Sites

A review of reports presently on file in the library of the State Historic Preservation Division (SHPD) indicated that no archaeological surveys have been conducted within any portion of the present project area during the decades following Bennett's survey.

On March 24 and May 13, 1998, Cultural Surveys Hawaii conducted a reconnaissance survey of the Kaumuali'i Highway project area (Hammatt & Chiogioji 1998). No archaeological sites or features were encountered during the surface survey or areas adjacent to the highway corridor. For a more detailed description of the survey, the reader is referred to the above report.

F. Burials

Two people, Loren Mano'i and Wilma Holi, mentioned the possibility of burials (other than the Lihue Public Cemetery) near the area of the Mill Bridge. However, neither were able to provide detailed information regarding any burials or where they might be actually located. It was unsure, how far out of the corridor any possible burials might be located. Both *kama'āna* residents said this is something they had heard about over the years, but could not give further details regarding burials in the area. Wilma Holi and her family have land about a quarter mile from the present Kaumuali'i Highway in a valley they call *Moa'ula*. Their family burials are retained within the confines of their *āina*.

SHPD archaeologist for Kaua'i, Nancy McMahon, confirmed that she did not have any knowledge of any burials along the corridor or of any burials in adjacent areas to the present. She stated that at the last Kaua'i Island Burial Council meeting, Wilma Holi was present and indicated the possibility of burials near the Mill Bridge. It was the first time, Ms. McMahon had heard of this (personal communication:6/30/00).

Consultation with community residents and Hawaiian organizations did not reveal any information regarding burials near or in any part of the project area.

G. Identification of Knowledgeable *Kāpuna* and *Kama'āna* Residents

Much of the focus of this study was on the attempt to identify knowledgeable *kāpuna* and *kama'āna* residents who might be able to provide cultural information about traditional practices within the project area. Approximately 40 individuals and Hawaiian groups were contacted. As a result of this inquiry, a knowledgeable informant who could be interviewed did not surface. The results of this part of the study are presented in the table below.

Key:

Affiliation
 CSH - Cultural Surveys
 HCV - Hawaiian Civic Club
 KHPRC - Kaula's Historic Preservation Review Committee
 KHBC - Kaula's Island Burial Council
 OHA - Office of Hawaiian Affairs
 SHPD - State Historic Preservation Division

Y = Yes
 N = No
 S = Some knowledge
 A = Attempted (at least 3 attempts were made to contact individual, with no response)

TABLE 1: Results of Community Consultations

Name	Affiliation	Contacted (Y/N)	Personal Knowledge (Y/N/S)	Referrals	Comments
Akama, Kaijo	CSH & Kaula's resident	Y	N	None	
Albao, Harriet	Kaula's resident	Y	N	Catherine Lo	Referred by Andy Bushnell
Aloot, Sebastian	OHA - Oahu	Y	N	Bonita Panui	
Benamina, Ilei	Cultural Resource Specialist, Hawaiian Language Teacher	Y	N	None	Referred by Ka'umoana Carter
Bushnell, Andy	Kaula's resident	Y	N	Harriet Albao, Hobie Goodale	Referred by Tina Bushnell
Bushnell, Tina	CSH & Kaula's resident	Y	N	Andy (father)	
Carter, Ka'umoana	Haw'o language teacher - KCC	Y	N	Dennis Chun, Ilei Beniamina	Oahu resident & former KCC lecturer - Haw'o language
Chun, Dennis	KCC, Hokule'a crew, Kaula resident	Y	N	None	Referred by Ka'umoana Carter

Flores, Koloni	former member, KHPRC & Kaula's resident	Y	N	None	Referred by Collin Kippin (OHA). Kalloni was asked to do project, but declined because he didn't have any resources for the project area.
Goodale, Hobie (Holbrook)	Kaula's resident & grandson to Charlie Rice	A	-	-	Referred by Andy Bushnell
Grove Farm Museum Bob Schleck, Director	Grove Farm	Y	N	None	
Hammatt, Hal	CSH	Y	N	La France Kapaka	
Hohi, Wilma	Nawiliwili Bay Watershed Council	Y	S	La France Kapaka	Her family has land at Moa'ula (near Koamalu).
Ida, Gerald	CSH & Kaula's resident	Y	N	None	
Ikeas, Glenn	Park Engineering	Y	N	Jason Yasawa	
KHPRC Members	KHPRC	Y	N	None	
Kahn, Leimomi	Honolulu Civic Club, HCV	Y	N	Presidents of all Hawaiian Civic Clubs	She forwarded an e-mail regarding project to all club presidents. No response received.
Ka'ilikea, Sarah	Kaula's resident	Y	N	None	Kipuna - in her 90's
Kamai, Grace	KHC Kawaihau Reg. Rep. & Kaula's resident	A	N	N	
Kamai, Misy	CSH & Kaula's resident	Y	N	None	
Kaohi, Lionel	Kaunualii Civic Club, President; Kaula's Council, President	Y	N	Saber McClacken	Referred by Leimomi Kahn. He was unable to provide a phone number or a means to contact Ma. McClacken.

Kapuka, La France	Incumbent KIBC member	Y	N	Wilma Holi, Gusie Schumacher	
Keala, Jalna	OHA-Oahu	Y	N	Sarah Ka'iikea; Alo Like Kipuna program	
Kepeliela, Kana'i	SHPD-Oahu	Y	N	Nancy McMahon	
Kikuchi, Pila	KHPRC, KCC, Anthropology teacher	Y	N	Lihue Senior Citizens Ctr.	All the old-timers he knew are gone.
Kinimaka, Alquiza, Kapu	Kumu hula-Hanapepe	A	---	---	Out of town until 7/4/00. Hala is in Hanapepe
Kippin, Collin	OHA (O'ahu)	Y	N	Jalna Keala/Sarah Ka'iikea	
Lo, Catherine	Kaua'i Resident	Y	N	None	Retired librarian & historian
Lovell-Obatake, Cheryl	KIBC, Chair & Kaua'i resident	Y	S	Wilma Holi	
McClacken, Saber (Ka'opua)	Honolulu Civic Club (Kaua'i resident)	A	---	---	Lives in Lihue. (No listing in phone book - didn't know how to get in touch with her. Referred by Lionel Kaohi.)
McMahon, Nancy	SHPD-Kaua'i	Y	N	None	
Mamo'i, Loren	Kaua'i Botanical Garden	Y	N	Wilma Holi's Uncle - Ivan	
Panui, Boots	OHA-Kaua'i	N/A	---	---	On sick leave & retiring @ end of June. Won't be back in office.
Pelekai, Pkake	OHA-Oahu	N/A	---	---	On indefinite sick leave.
Tremboth, Healani	Alo Like Kipuna Program	Y	N	None	referred by Jalna Keala
Santos, Kaliko	KIBC, Lihue Reg. Rep.	Y	N	Sarah Ka'iikea	

Schumacher, Gusie	Kaua'i resident	Y	N	None	Old-time kamia area resident of German Hill area
Summers, Ka'imi	KCC	Y	N	Loren Mamo'i	Teaches Hawaiian language @ KCC
Tsuchiya, Rick	KHPRC & Kaua'i resident	Y	N	None	
Wann, Presley	KIBC Lihue Reg. Rep.	A	---	---	
Yasawa, Jason	Parsons, Brinkerhoff Quade & Douglas	Y	N	None	

1999-2000 KIBCO Membership List

IV. SUMMARY AND RECOMMENDATIONS

A. Summary

The Kaunualii Highway corridor runs through a central plains area tucked between two mountain ranges, Hāupu on the south and Makaleha on the north. Background research suggests that the specific route of the highway was established to connect western commercial and social centers at Kōloa and Līhū'e in the 19th century. It is likely that at least a portion of the present highway follows the traditional trail alignment used prior to contact.

The majority of the affected lands surrounding the corridor were impacted since the early 19th century due to agriculture and the sugar industry. Much of the land, at one time or another, was planted in cane. The land is dominated by introduced and alien plant species.

Prior archaeological studies (Bennett in the 1930's and Hammiatt & Chiogioji in 1998) did not identify any prehistoric archaeological sites in the immediate or adjacent areas to the highway corridor. Decades of agricultural, commercial and construction activities have removed any evidences of surface sites.

Background research did not identify specific areas of traditional land use nor any documented records of traditional practices being conducted in the area. A good faith attempt was made to contact as many Kāua'i residents and Hawaiian organizations as possible in order to identify cultural practices and practitioners within the proposed project area and bordering lands; and, to identify knowledgeable persons who could be interviewed regarding traditional cultural practices. Approximately 40 individuals and organizations were contacted. These efforts did not identify any cultural practices or practitioners.

B. Recommendations

No traditional Hawaiian customs and practices were identified in relation to the widening of the Kaunualii Highway corridor project. The result of this assessment is that the corridor will not have an impact on traditional Hawaiian cultural practices or practitioners.

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APPENDIX K

List of Preparers

Appendix K LIST OF PREPARERS

Below is a listing of persons who were primarily responsible for preparing the Draft Environmental Assessment, their titles, years of experience and educational background.

State of Hawaii Department of Transportation

Steven M. Kyono, P.E., District Engineer
25 years experience
B.S., Civil Engineering, Purdue University

Glenn Yamamoto, P.E., Assistant District Engineer
27 years experience
B.S., Mechanical Engineering, Oregon State University

Stephen Morikawa, P.E., Project Manager
35 years experience
B.S., Civil Engineering, University of Wyoming

Steven Uechi, P.E., Staff Engineer
9 years experience
B.S., Civil Engineering, University of Hawaii at Manoa

U.S. Department of Transportation, Federal Highway Administration

Pat V. Phung, P.E., Transportation Engineer
9 years experience
B.S., Civil Engineering, University of Washington

ParEn, Inc. (Engineering Prime Consultant)

Reginald Suzuka, P.E., Vice President
40 years experience
B.S., Civil Engineering, University of Hawaii at Manoa

Glenn Ikeda, P.E., Project Manager
11 years experience
B.S., Civil Engineering, University of Hawaii at Manoa

Parsons Brinckerhoff Quade & Douglas, Inc. (Environmental Subconsultant)

David Atkin, Ph.D., Project Manager
20 years experience
Ph.D., Biology (Ecology), Princeton University
B.S., Biology (Marine), Stanford University

Jason Yazawa, AICP, Environmental Task Leader
7 years experience
M.U.R.P., Urban and Regional Planning, University of Hawaii at Manoa
B.A., Economics, University of Hawaii at Manoa

Eddie Sagarang, Graphic Designer
10 years experience
B.A., Fine Arts, University of Hawaii at Manoa

AUG 23 2000

FILE COPY

2000-08-23-KA-FEA-

*** IMPROVEMENTS TO
KAUMUALII HIGHWAY *
FROM LIHUE TO WEST OF MALUHIA ROAD**

KAUAI, HAWAII

**FINAL ENVIRONMENTAL ASSESSMENT/
FINDING OF NO SIGNIFICANT IMPACT**

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
AND
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

AUGUST 2000

FEDERAL HIGHWAY ADMINISTRATION
FINDING OF NO SIGNIFICANT IMPACT

For
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii

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

8/1/00
Date

Abraham Wong
For FHWA

**IMPROVEMENTS TO KAUMUALII HIGHWAY
LIHUE TO WEST OF MALUHIA ROAD
County of Kauai, Hawaii**


**Final
Environmental Assessment/
Finding of No Significant Impact**

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

U.S. Department of Transportation
Federal Highway Administration
and
State of Hawaii Department of Transportation
Highways Division

AUG 2 2000

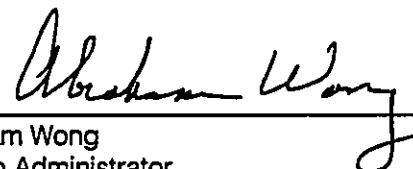
Date of Approval



Kazu Hayashida
Director of Transportation
State of Hawaii Department of Transportation

8/1/00

Date of Approval



Abraham Wong
Division Administrator
Federal Highway Administration

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

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Highways Division, Kauai District
State of Hawaii Department of Transportation
3060 Eiwa Street, Room 205
Lihue, Kauai, Hawaii 96766
(808) 274-3111

This Final Environmental Assessment (EA) / Finding of No Significant Impact (FONSI) documents impact studies of proposed improvements to Kaumualii Highway from Lihue to West of Maluhia Road on the island of Kauai, Hawaii. This project will increase the vehicle capacity of Kaumualii Highway between Kuhio Highway in Lihue and Maluhia Road. Within these limits, Kaumualii Highway will be converted from a two-lane undivided roadway to a four-lane divided roadway. The west end of the project is located west of Maluhia Road to allow for a transitional section between the existing two-lane configuration and the future four-lane configuration. The project will require moving a section of Hoomana Road to maintain access to a small neighborhood called German Hill. The project is not expected to cause substantial environmental impacts because the widening will occur alternately on the north or south sides of the existing highway to avoid certain resources. Only one residence will be relocated due to the re-alignment of Hoomana Road. The project will fill approximately a quarter acre of wetlands, but these wetlands will be replaced. Also, for safety reasons, the project will replace the railings of the historic Lihue Mill Bridge.

SUMMARY

S.1 INTRODUCTION

S.1.1 Applicant and Project Summary

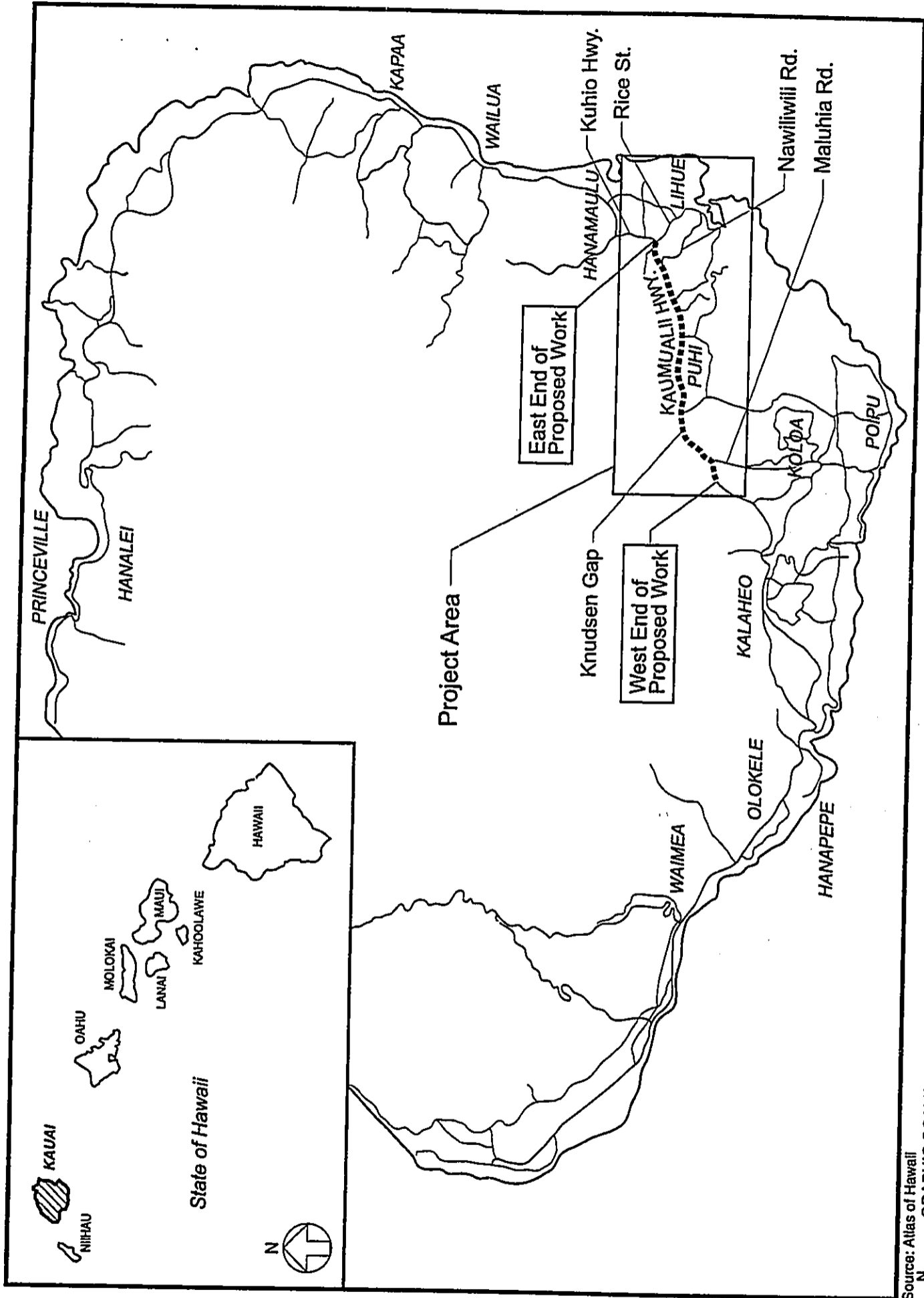
The Highways Division of the State of Hawaii Department of Transportation (SDOT) and the Federal Highway Administration (FHWA) are issuing this Final Environmental Assessment (EA) / Finding of No Significant Impact (FONSI) for this project, officially named "Improvements to Kaumualii Highway, Lihue to West of Maluhia Road." The project is located on the island of Kauai, County of Kauai, Hawaii (see Figure S-1), and will increase the vehicle capacity of Kaumualii Highway between Lihue and Maluhia Road. The project is included in the current *Statewide Transportation Improvement Program (STIP)*, which is the capital improvement program for near-term transportation projects in the State.

The FHWA and SDOT are the approving agencies at the federal and State levels, respectively, under the provisions of the applicable federal and State environmental review regulations.

S.1.2 Planning Context

Widening Kaumualii Highway between Lihue and Maluhia Road was recommended in the Kauai Long-Range Land Transportation Plan (May 1997). This improvement project is one element of a set of measures to meet transportation demands on Kauai through 2020. If approved, State and federal funding will be used to design and construct this project. Therefore, this project must undergo environmental review in accordance with Hawaii Revised Statutes (HRS) Chapter 343 (the Hawaii EIS Law) and the National Environmental Policy Act (NEPA).

An early assessment by the SDOT indicated that the project would not cause a "significant" impact to the environment. Therefore, an EA was deemed to be the appropriate environmental review document, as opposed to an environmental impact statement (EIS). Following agency and public review of the Draft EA, the SDOT and the FHWA have determined that the early assessment of no significant impact remains valid. Therefore, under HRS Chapter 343 and NEPA, both SDOT and FHWA have issued Findings of No Significant Impact (FONSI) and



Source: Atlas of Hawaii
 N
 GRAPHIC SCALE:
 0 2 mi 4 mi
 0 3 km 7 km

Project Location
IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
 FIGURE S-1

prepared this Final EA. This Final EA documents the analyses, reports, and reviews of agency and public comments received throughout project planning that support the FONSI determination.

S.1.3 History

The route between Koloa (at the western end of the project) and Lihue was developed in the first half of the 19th century, shortly after Western settlement on Kauai. Later, early in the 20th century, a roadway system was developed from the southwest coast of Kauai to the northeast coast. This roadway remained unpaved until federal funds became available in the 1930s. These funds assisted the construction of the "Kauai Belt Road", which included the present Kaumualii Highway. The last major project on Kaumualii Highway in 1989 was the construction of a 120 m (420 ft) long bridge over Huleia Stream to replace the old "Halfway Bridge," which was constructed in the 1930s.

S.2 PURPOSE OF AND NEED FOR THE PROJECT

Upon completion, the proposed project will satisfy the following purposes and needs:

- increase the roadway capacity between Lihue and Maluhia Road to meet both current and future travel demand;
- improve highway safety by correcting sight distance deficiencies and substantially reducing the chance of head-on collisions; and
- provide the flexibility to maintain system connectivity during a major incident (e.g., traffic accident).

S.2.1 Existing Capacity Deficiencies

Roadway performance is measured in terms of level-of-service (LOS). LOS is scored on a scale from "A" through "F", representing best to worst conditions. LOS levels of C or D are generally considered to be the lower limits of acceptability. LOS A corresponds to free-flowing traffic; LOS E and F indicate severe roadway congestion.

Traffic volumes on Kaumualii Highway east of Maluhia Road increased 26 percent from 1988 to 1994. Since no capacity improvements were made on Kaumualii Highway during that period, traffic conditions worsened considerably. Currently, travelers on Kaumualii Highway experience LOS E and F (below the acceptable range) along the project limits during peak periods, especially the section from Lihue to Puhi. Analyses of current morning and afternoon peak hour traffic conditions indicate that the town-bound section of Kaumualii Highway from Puhi to Lihue operates at LOS F in the morning. The afternoon peak hour congestion is in the out-bound direction, primarily between the traffic signals at Nawiliwili Road and Puhi.

S.2.2 Future Transportation Demand

Expected population and economic growth in the southern part of Kauai is expected to increase travel demand in the corridor between the southwest and southeast regions of the island. Since Kaumualii Highway is the only regional highway in south Kauai, the capacity of this highway, which is insufficient to accommodate current demand, will be even more overtaxed by traffic volumes projected for 2020. Unless steps are taken to increase the capacity of this roadway, the level of congestion on Kaumualii Highway will continue to worsen.

S.2.3 Highway Safety Improvements

Kaumualii Highway is a safe roadway, but there are a few sections where sight distances are less than current highway safety standards. In addition, as traffic volumes increase, the possibility of head-on collisions also increases on a two-lane undivided highway. The project will improve highway safety by increasing sight distances to current highway standards, and converting the highway to a divided roadway, which will substantially decrease the chance of head-on collisions.

S.2.4 System Connectivity Improvements

A benefit of converting Kaumualii Highway to a four-lane divided roadway is when major incidents (e.g., traffic accidents) occur that require lane closures. The use of cane haul roads as detours is becoming less reliable in areas where cane production has ceased, reducing the continued maintenance of these roads. With the project, the likelihood of a traffic incident blocking all four lanes of a divided highway will be highly unlikely. Therefore, the police and

the SDOT will have the flexibility in the future to detour traffic flow around any major incident by using the unaffected roadbed of the divided highway.

S.3 ALTERNATIVES

S.3.1 No Build Alternative

A No-Build Alternative was developed to serve as a frame of reference against which to compare the impacts of widening Kaumualii Highway. The No Build Alternative is defined as those roadway improvements that are expected to be implemented by 2020, according to the Kauai Long-Range Land Transportation Plan (May 1997), except for the proposed project. These roadway improvements include a Poipu-Nawiliwili connector road, expansion of Nuhou Road and a Lihue-Hanamaulu bypass road.

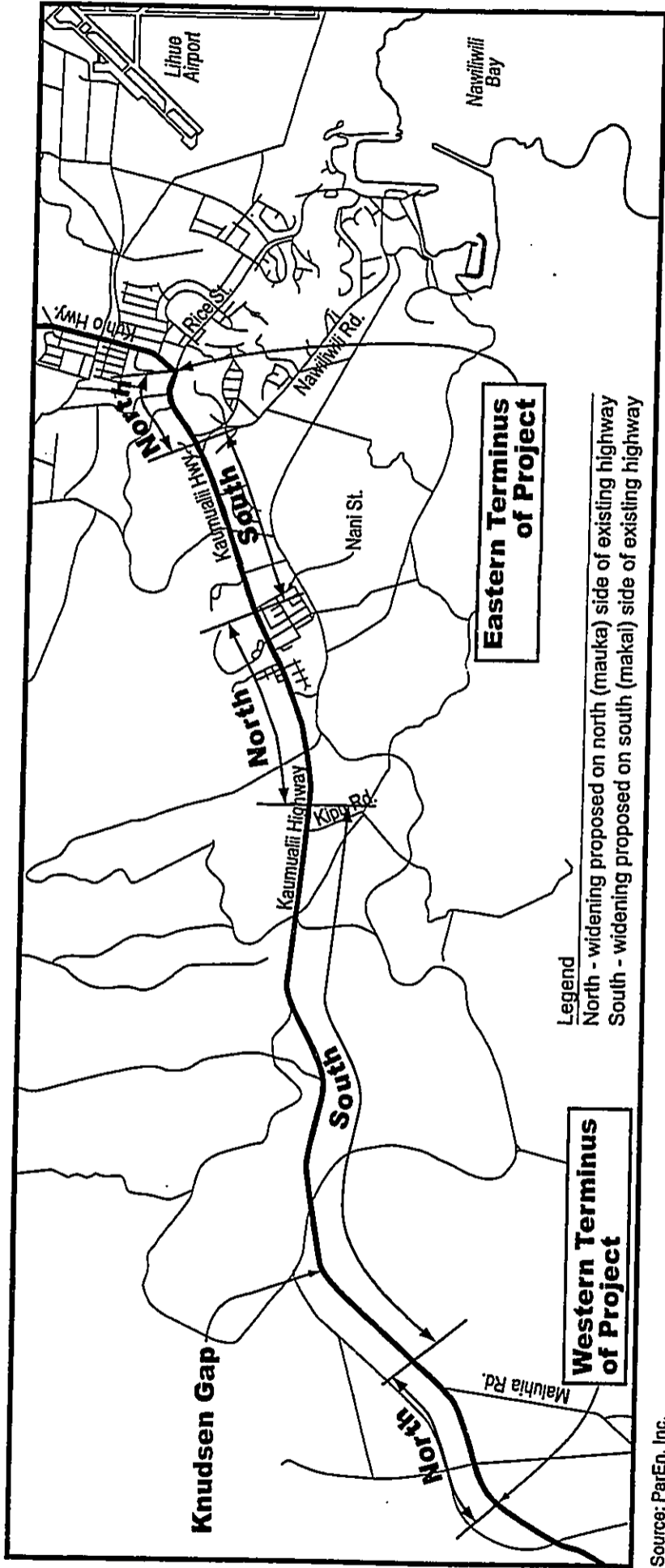
S.3.2 Build Alternative

The proposed project will extend from Kuhio Highway in Lihue to approximately 1340 m (4400 ft) west of Maluhia Road (12 km (7.5 miles)). Within these limits, Kaumualii Highway will be converted from a two-lane undivided roadway to a four-lane divided roadway. To avoid certain resources, the widening will occur alternately on the north (mauka) or south (makai) sides of the existing road (see Figure S-2).

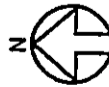
The Build Alternative will require relocating the section of Hoomana Road that intersects with Kaumualii Highway. This roadway is the only access to German Hill, a residential community of about 20 houses and a church. To maintain access to German Hill, the south (makai) section of Hoomana Road will be re-aligned, and a new intersection with Kaumualii Highway will be constructed approximately 90 m (300 feet) east of the existing intersection.

The estimated cost of the Build Alternative is estimated to be between \$75 million and \$110 million, which includes right-of-way acquisition and construction.

Due to funding constraints, the entire project will be constructed in phases. The first phase will extend approximately 5 km (3 miles) from Kuhio Highway in Lihue to Kipu Road. The limits of subsequent phases have not yet been determined. Construction of phase one is expected to



Source: ParEn, Inc.



GRAPHIC SCALE:
0 2500 ft 5000 ft

0 1 km 2 km

Direction of Proposed Widening of Build Alternative IMPROVEMENTS TO KAUMUALII HIGHWAY
Final Environmental Assessment
FIGURE S-2

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

begin in 2003, and be completed by 2005. The schedule of subsequent phases will depend on funding availability.

S.4 IMPACTS AND MITIGATION

Table S-1 summarizes the environmental and social impacts of the No Build and Build alternatives. A summary of mitigation measures for each adverse impact is also provided.

In general, the Build Alternative will not cause substantial environmental impacts because the proposed roadway improvements will occur beside the existing Kaunualii Highway. The only displacement or relocation will be one residence at the southern edge of the German Hill neighborhood. This residence will be displaced because of the re-alignment of Hoomana Road. Additional roadway right-of-way needed for the project will convert land that could be used for agriculture to transportation use. The project will also result in filling 0.1 ha (0.25 acres) of wetlands, and require the replacement of the historic Lihue Mill Bridge's steel railings. The removal of the railings will cause an "adverse effect" on the historic bridge, per Section 106 of the National Historic Preservation Act.

S.5 APPROVALS AND PERMITS

The following permits or approvals will be required prior to the construction of the highway.

- U.S. Department of the Army, Corps of Engineers (USACE) - Section 404 permit (Nationwide)
- SDOH - National Pollutant Discharge Elimination System (NPDES) permit
- SDOH - Water Quality Certification
- State of Hawaii Department of Land and Natural Resources (DLNR) – Stream Channel Alteration Permit
- State of Hawaii Department of Business, Economic Development and Tourism (DBEDT), Office of Planning - Coastal Zone Management consistency concurrence
- Department of Public Works - Grading, Grubbing, Stockpiling and Excavation permit

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

No Build Alternative	Build Alternative
LAND USE AND RELOCATIONS	
<u>Immediate or Construction Impacts.</u> None.	<u>Immediate or Construction Impacts.</u> Loss of approximately 35 ha (86 acres) of open space. Much of this land is former cane field, but presently fallow. One residence in German Hill will be displaced because of the re-alignment of Hoomana Road.
<u>Long-Term or Operational Impacts.</u> County land use plans show the area between Puhi and Lihue being developed for residential and commercial uses. The pace of such development would depend on market forces.	<u>Long-Term or Operational Impacts.</u> Similar to the No Build Alternative. Urban development west of Puhi is not expected due to the County's plans to promote diversified agriculture in this area.
<u>Mitigation.</u> None required.	<u>Mitigation.</u> The owner-occupant of the German Hill residence will be compensated and provided with relocation assistance in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act. The house may be relocated to another location in German Hill if the house is moveable, a suitable location is available, and the owner is agreeable.
FARMLAND	
<u>Immediate or Construction Impacts.</u> None.	<u>Immediate or Construction Impacts.</u> In the area west of Puhi, roadway right-of-way taken from fallow agricultural land will be converted to transportation use. Per the Farmland Protection Policy Act, the Land Evaluation and Site Assessment score corresponding to this farmland conversion is 134 points, below the 160 point threshold at which alternatives that avoid farmland impacts must be evaluated.
<u>Long-Term or Operational Impacts.</u> None.	<u>Long-Term or Operational Impacts.</u> None.
<u>Mitigation.</u> None required.	<u>Mitigation.</u> None required.
SOCIAL AND ECONOMIC	
<u>Immediate or Construction Impacts.</u> None.	<u>Immediate or Construction Impacts.</u> The project will infuse up to \$110 million of federal funds into the local economy, increasing short-term employment and the local purchase of goods and services.
<u>Long-Term or Operational Impacts.</u> None.	<u>Long-Term or Operational Impacts.</u> No neighborhood will be split, or isolated from the greater community. The relocation of one residence in German Hill will not affect social cohesion or activities in this neighborhood because the affected residence is located at the extreme southern edge of this neighborhood. Conversion of private property to public use will cause a decrease in County property tax revenue. No long-term employment impacts are anticipated. There are no minority or low-income populations that will experience disproportionately high and adverse impacts from the project in accordance with Executive Order 12898 regarding Environmental Justice.
<u>Mitigation.</u> None required.	<u>Mitigation.</u> None required.

Table S-1
Summary of Environmental Impacts and Mitigation
(continued)

No Build Alternative	Build Alternative
TRANSPORTATION	
<u>Immediate or Construction Impacts.</u> None.	<u>Immediate or Construction Impacts.</u> Two lanes of traffic (the same as at present) will be maintained during almost all phases of construction, minimizing traveler delays during project construction. Access to adjacent land uses will be maintained at all times, but detours may be used.
<u>Long-Term or Operational Impacts.</u> Traffic conditions on Kaunualii Highway will continue to deteriorate from the existing poor levels, which is already LOS F at certain intersections. The current level of bike and pedestrian service will remain the same. County bus service will deteriorate due to increasing congestion. The current level of highway safety will remain the same: motorists are vulnerable to head-on collisions, and sight distances are not up to current standards.	<u>Long-Term or Operational Impacts.</u> Traffic operations on Kaunualii Highway will improve from LOS F at certain intersections now and under the No-Build Alternative, to LOS B or C. Bike and pedestrian service will improve due to the provision of wider shoulders, bike lanes at intersections in urban areas, and sidewalks in urban areas. County bus service will improve because of better traffic operations on the highway. Highway safety will improve because the widened median will reduce the risk of head-on collisions, and sight distances will be corrected to current standards. However, the additional lanes will enable some motorists to exceed the speed limit, potentially increasing the risk of incidents.
<u>Mitigation.</u> None required.	<u>Mitigation.</u> A "Maintenance of Traffic Plan" will be prepared during the design phase to ensure that two lanes of traffic are available throughout construction, and that access to adjacent land uses is maintained. Maintenance of pedestrian and bicycle access will also be included.
COMMUNITY SERVICES AND FACILITIES	
<u>Immediate or Construction Impacts.</u> None.	<u>Immediate or Construction Impacts.</u> None.
<u>Long-Term or Operational Impacts.</u> None.	<u>Long-Term or Operational Impacts.</u> Access to community services and facilities, such as parks, hospitals, schools, and police, fire and ambulance services, will improve due to additional highway capacity.
<u>Mitigation.</u> None required.	<u>Mitigation.</u> None required.
AIR QUALITY	
<u>Immediate or Construction Impacts.</u> None	<u>Immediate or Construction Impacts.</u> During construction, fugitive dust emissions (particulate matter of relatively large size) will be generated from activities such as construction vehicles operating on unpaved roads, material blown from stockpiles and exposed areas, and other activities.
<u>Long-Term or Operational Impacts.</u> Under worst-case meteorological conditions, carbon monoxide (CO) concentrations near analyzed intersections are predicted to exceed the State Ambient Air Quality Standards (AAQS), but would be far below the National AAQS. The State CO AAQS is so stringent that it is exceeded at many locations in the State with even moderate traffic volumes.	<u>Long-Term or Operational Impacts.</u> CO concentrations will improve slightly in comparison to the No Build Alternative, yet three of the four intersections analyzed will exceed the State AAQS under worst-case meteorological conditions.

Table S-1
Summary of Environmental Impacts and Mitigation
(continued)

No Build Alternative	Build Alternative
AIR QUALITY (CONTINUED)	
<u>Mitigation.</u> None required.	<u>Mitigation.</u> Fugitive dust will be controlled by frequent watering, the use of wind screens when construction is near residences and commercial districts, and limiting the areas of disturbance. Open-bodied trucks will be covered when in motion if they are transporting wind-erodible materials.
NOISE	
<u>Immediate or Construction Impacts.</u> None.	<u>Immediate or Construction Impacts.</u> Construction will normally occur during daylight hours when occasional loud noises are more tolerable. Since most construction activities will be away from noise sensitive land uses, disruptions of normal activities from construction-related noise are not anticipated.
<u>Long-Term or Operational Impacts.</u> Future traffic noise levels at two residential areas in Puhi are predicted to slightly exceed existing levels. These are the only residential areas immediately adjacent to Kaumualii Highway within the project limits.	<u>Long-Term or Operational Impacts.</u> Future traffic noise levels at the two Puhi sites are predicted to be slightly lower than under the No Build Alternative. The FHWA Noise Abatement Criteria (NAC) will not be approached, nor will there be a substantial increase in noise per the SDOT Noise Analysis and Abatement Policy.
<u>Mitigation.</u> None required.	<u>Mitigation.</u> Specifications stipulated in the State Department of Health (SDOH) community noise control standards will be followed.
WATER RESOURCES	
<u>Immediate or Construction Impacts.</u> None.	<u>Immediate or Construction Impacts.</u> During construction, impacts on water resources will be associated with erosion and sedimentation that may be caused by the project's clearing and earthmoving activities, and alteration of existing drainage patterns. Although new culverts and bridges will be constructed at stream crossings, they will not change existing drainage patterns and flow capacities. Construction in the vicinity of Knudsen Gap could expose dike structures in Haupū Range. The widening will fill approximately 0.1 ha (0.25 acres) of a wetland area just west of Puhi. Although the project will span a regulatory floodplain along Nawiliwili Stream, base flood elevations at this stream will not change. The regulatory floodway does not have to be revised.
<u>Long-Term or Operational Impacts.</u> Increase in regional pollutant loading of surface waters because of increases in total regional VKT (vehicle-kilometers traveled).	<u>Long-Term or Operational Impacts.</u> Approximately 16 hectares (40 acres) of new impervious roadway surface will be created. However, because drainage structures will be designed to maintain existing surface water patterns, changes to existing hydraulic flows in the region are not anticipated. In addition, when compared to the total regional watershed, the amount of impervious surface provided by the project over a 12 km (7.5 miles) distance will not increase the risk of flooding. Numerical modeling indicates that base flood elevations at

Table S-1
Summary of Environmental Impacts and Mitigation
(continued)

No Build Alternative	Build Alternative
WATER RESOURCES (CONTINUED)	
	<u>Long-Term or Operational Impacts (Continued).</u> Nawiliwili and Huleia Streams will not change. The level of regional pollutant loading of surface waters will be similar to the No Build Alternative because total regional VKT will be the same.
<u>Mitigation.</u> None required.	<u>Mitigation.</u> Storm water runoff and erosion during project construction will be mitigated through the use of Best Management Practices (BMPs). Aquatic and wetland areas near construction activities will not be used to store machinery or equipment. In the event of a petroleum or hazardous materials release, established incident response procedures will be implemented. If groundwater is encountered at Haupu Range, it will be resealed as soon as possible. The filled wetlands will be replaced by creating new wetlands upstream from the existing wetlands. New and modified drainage structures will be designed to maintain remaining and new wetland areas.
FLORA	
<u>Immediate or Construction Impacts.</u> None.	<u>Immediate or Construction Impacts.</u> Vegetational communities will be cleared for roadway construction, but these communities do not contain threatened or endangered species. Therefore, this impact will be minimal within the context of the region's botanical resources. However, some of these floral resources may have aesthetic value, even though they are not threatened or endangered. For example, a few swamp mahogany trees along the north (mauka) side of Kaunualii Highway near Maluhia Road will be displaced. These trees are not part of the Maluhia Road tree tunnel. No trees that are part of the Maluhia Tree Tunnel will be affected.
<u>Long-Term or Operational Impacts.</u> None.	<u>Long-Term or Operational Impacts.</u> None.
<u>Mitigation.</u> None required.	<u>Mitigation.</u> Roadside landscaping will be provided, which will include native trees and shrubs wherever practicable. Details of the landscaping plan will be developed during the design phase. The displaced swamp mahogany trees will be relocated to open spots along the Maluhia Road tree tunnel, which is comprised of the same species of trees. Other trees that warrant preservation or relocation will be identified with the assistance of interested organizations.
FAUNA	
<u>Immediate or Construction Impacts.</u> None.	<u>Immediate or Construction Impacts.</u> Habitat of relatively common faunal communities along Kaunualii Highway will be displaced due to right-of-way requirements. Habitat of Federal Trust species (species listed as threatened or endangered) will not be affected by construction.

Table S-1
Summary of Environmental Impacts and Mitigation
(continued)

No Build Alternative	Build Alternative
FAUNA (CONTINUED)	
Long-Term or Operational Impacts. None.	Long-Term or Operational Impacts. None.
Mitigation. None required.	Mitigation. None required.
SOLID AND HAZARDOUS WASTE	
Immediate or Construction Impacts. None.	Immediate or Construction Impacts. Excavated material is expected to be free of contamination. Construction activities will generate solid and hazardous waste.
Long-Term or Operational Impacts. None.	Long-Term or Operational Impacts. None.
Mitigation. None required.	Mitigation. Solid and hazardous waste generated during construction will be properly handled and disposed of in accordance with SDOH requirements.
HISTORIC AND ARCHAEOLOGICAL RESOURCES	
Immediate or Construction Impacts. None.	Immediate or Construction Impacts. The historic Lihue Mill Bridge will be adversely affected because its deck will be widened and its steel railings will be replaced. The historic Hoomana Overpass Road bridge will be closed to vehicular traffic due to the relocation of Hoomana Road, but maintained without any alteration as a pedestrian/bike path. Therefore, the project will not cause an adverse effect to this bridge. Although a house in the German Hill historic district will be displaced, the historic district will not be adversely affected because the integrity of the district will remain intact.
Long-Term or Operational Impacts. None.	Long-Term or Operational Impacts. None.
Mitigation. None required.	Mitigation. A Memorandum of Agreement has been signed, which stipulates that photographic and written documentation of Lihue Mill Bridge will be obtained in accordance with the Historic American Building Survey standards. If an archaeological or historic site is uncovered during construction, work will stop immediately and the appropriate authorities will be contacted.
VISUAL AND AESTHETIC RESOURCES	
Immediate or Construction Impacts. None.	Immediate or Construction Impacts. None.
Long-Term or Operational Impacts. None.	Long-Term or Operational Impacts. The visual quality of the two identified viewsheds, the Haupu Range and the Maluhia Road "tree tunnel", will not be affected.
Mitigation. None required.	Mitigation. None required.

S.6 COMMENTS AND COORDINATION

Project scoping activities consisted of written correspondence with relevant government agencies, landowners, and environmental organizations. In addition, two public information meetings, the announcement and distribution of the project's Draft EA, and a formal public hearing were used to solicit comments about the project.

The following agencies, organizations and landowners were contacted early in the planning process for information to help prepare the EA and for comments on potential impacts to certain properties or resources.

- State of Hawaii Department of Land and Natural Resources (DLNR), Commission on Water Resource Management
- DBEDT, Office of Planning
- County of Kauai Planning Department
- County of Kauai Department of Public Works
- County of Kauai Department of Water
- County of Kauai Transportation Agency
- Amfac Land Company, Limited (Lihue Plantation)
- Grove Farm Properties, Inc.
- Island School
- Kauai Community College
- Kauai Electric Company
- Kauai Humane Society
- Kauai Outdoor Circle, The
- Kaunualii Investment Company & Koamalu Associates
- Kilohana/Wilcox Trust
- Knudsen Trust
- Lihue Public Cemetery Association

Since the project will require compliance with certain environmental laws and regulations, the following agencies were also consulted:

Section 7 of the Endangered Species Act

- U.S. Department of the Interior, Fish and Wildlife Service (USFWS)
- DLNR, Division of Forestry and Wildlife

Section 106 of the National Historic Preservation Act

- DLNR, State Historic Preservation Division
- Office of Hawaiian Affairs
- State of Hawaii Department of Hawaiian Home Lands
- Kauai Historic Preservation Review Commission

Section 404 of the Clean Water Act

- USACE
- U.S Environmental Protection Agency
- USFWS

Farmland Protection Policy Act

- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS)

Two public information meetings were conducted as part of the project's public involvement efforts. The first meeting was held on the evening of March 2, 1999 at the Wilcox Elementary School Cafetorium, and the second meeting was held on the evening of January 13, 2000 at the same location. Sixteen people attended the first meeting, and 53 people attended the second. Questions and comments during the first meeting were mostly about clarifying certain elements of the project, whereas questions and comments during the second meeting were primarily about access to German Hill. Many of the participants at the second meeting were German Hill residents who were informed about the re-alignment of Hoomana Road, and were invited to this meeting.

The project's Draft EA was publicly announced in the May 8, 2000 edition of the State Environmental Notice, which marked the start of a formal 30-day comment period on the Draft EA that ended on June 7, 2000. Copies of the Draft EA were distributed to federal, State and County agencies and elected officials who may have an interest in the proposed project. In addition, copies of the Draft EA were sent to affected landowners, and the Lihue Public Library.

The project's formal public hearing on the project was held on May 25, 2000 at the Wilcox Elementary School Cafetorium from 6:00 p.m. to 9:00 p.m. The hearing was conducted in an

"open house" format in which no formal presentation is made, but information about the project is provided in "science fair" types of displays, and a handout. In addition, experts were available to answer questions. The hearing display boards and handout provided information on the project's design characteristics, and traffic and environmental impacts. Since no formal presentation was made, the public could attend the hearing at any time during the hours stated above.

Forty written statements were received during the Draft EA comment period and at the public hearing. Of the 29 people who attended the public hearing, 22 provided comments either by writing their statements on a form provided at the hearing or by speaking to a court reporter stationed at the hearing. The number of commentors (written and oral) totaled 54. Among those commentors who expressed an opinion on whether the proposed project should proceed, those favoring the project outnumbered those opposing the project by a three to one ratio. Some of the more common themes expressed by the commentors include the need for landscaping and beautification along the highway consistent with the notion of Kauai being the "Garden Island"; the desire for overhead utility lines to be placed underground; concern for cyclists using the highway, and interest in creating a new, parallel two-lane roadbed substantially offset from the existing highway alignment to avoid creating a four-lane highway. HDOT responded to all written and oral comments. Some of the comments led to changes in the EA.

S.7 FINDING OF NO SIGNIFICANT IMPACT

In accordance with HRS Chapter 343 and HAR Chapter 200, the SDOT, as the approving agency, has rendered a Finding of No Significant Impact (FONSI) for the Improvements to Kaumualii Highway project based on an assessment of project impacts in relation to the Significance Criteria specified in HAR 11-200-12(b). Comments on the Draft EA from agencies and the public have been considered in the FONSI determination. A summary of the FONSI assessment is provided in Table S-2. As shown in this table, SDOT found that the project impacts (see Table S-1) fall under all of the Significance Criteria specified in HAR 11-200-12(b).

**Table S-2
Summary of Assessment of Project Impacts in
Comparison to Significance Criteria**

Criterion	Significant
Involves an irrevocable commitment to loss or destruction of any natural or cultural resource	No
Curtails the beneficial uses of the environment	No
Conflicts with the State's long-term environmental policies or goals and guidelines expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders	No
Substantially affects the economic or social welfare of the community or State	No
Substantially affects public health	No
Involves substantial secondary impacts	No
Involves substantial degradation of environmental quality	No
Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions	No
Substantially affects a rare, threatened or endangered species, or its habitat	No
Detrimentially affects air or water quality or ambient noise levels	No
Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a floodplain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters	No
Substantially affects scenic vistas and viewplanes identified in county or state plans or studies	No
Requires substantial energy consumption	No

Notes: "No" means project impact as it pertains to the criterion is considered to be not significant, and therefore, an EA is the appropriate HRS Chapter 343 review document.
"Yes" would mean project impact as it pertains to the criterion is considered to be significant, and therefore, an environmental impact statement (EIS) would be the appropriate HRS Chapter 343 review document.

Source: State of Hawaii Department of Transportation

Under NEPA, the determination of "significance" depends on an impact's "context" and "intensity", and how these qualities relate to each other. Context refers to the environment and the level or relative abundance of resources in the project area. Intensity refers to the specific impact, or how much of the resource(s) would be used or affected by the project. Based on the results of impact analyses contained in this document, and comments received on the Draft EA, FHWA has determined that the proposed project will not result in a significant impact as defined under NEPA, and has also rendered a FONSI.

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CHAPTER ONE

Purpose of and Need for Action

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CHAPTER 1 PURPOSE OF AND NEED FOR ACTION

1.1 INTRODUCTION

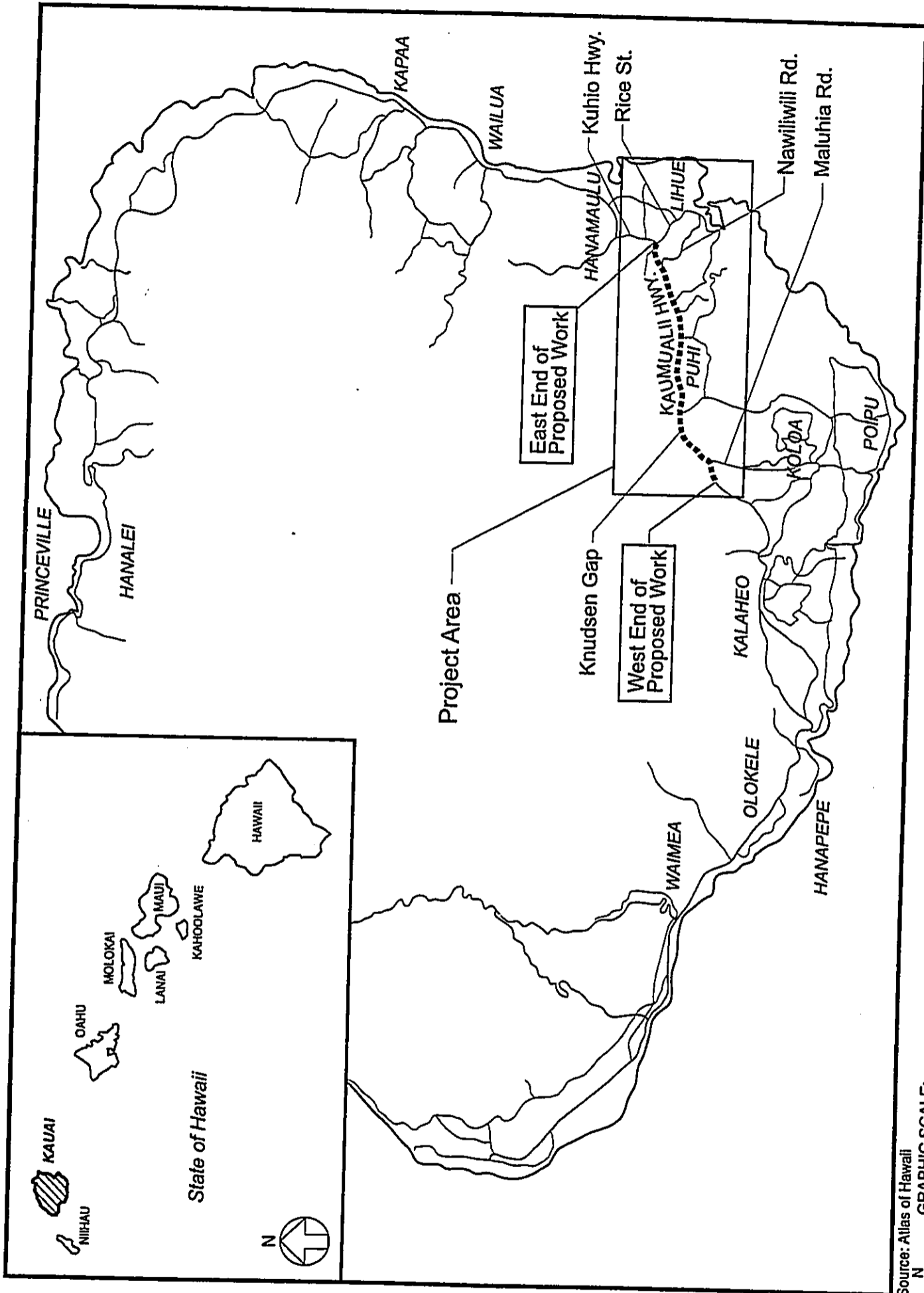
The Highways Division of the State of Hawaii Department of Transportation (SDOT) and the Federal Highway Administration (FHWA) are issuing this Final Environmental Assessment (EA) as the lead local and federal agencies for this project, which is officially named "Improvements to Kaumualii Highway from Lihue to West of Maluhia Road." The project is located on the island of Kauai, County of Kauai, Hawaii (see Figure 1-1), and will be designed to increase the vehicular capacity of Kaumualii Highway between Lihue and Maluhia Road. The project is included in the Statewide Transportation Improvement Program (STIP), which is the capital improvement program for near-term transportation projects in the State.

Under the provisions of the applicable State and federal environmental review processes, the FHWA and the SDOT are the approving agencies at the federal and State levels, respectively.

1.1.1 Planning Context

The Kauai Long-Range Land Transportation Plan (May 1997) includes this project as one element of a comprehensive set of transportation measures designed to meet Kauai's mobility requirements to 2020. If approved, State and federal funding will be used to design and construct the project. The proposed use of State and federal funds triggers the environmental review requirements of Hawaii Revised Statutes (HRS) Chapter 343 (the Hawaii EIS Law) and the National Environmental Policy Act (NEPA).

The environmental review process allows for three courses of action depending on a project's anticipated level of impact. The first course would be "exemption" from environmental review per the Hawaii Administrative Rules (HAR) Chapter 200 (Environmental Impact Statement Rules), and qualification as a "categorical exclusion" per 23 Code of Federal Regulations (CFR) 771 and 40 CFR 1508. These procedures are applicable to types of projects (e.g., road resurfacing, installation of guardrails, etc.) that normally do not impact the environment.



Source: Atlas of Hawaii

GRAPHIC SCALE:



Project Location
IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
FIGURE 1-1

However, the type of project being proposed is not listed as an "exemption" or "categorical exclusion".

The second course of action applies to projects whose environmental impact would not be "significant". The term "significant" has a technical definition under both HAR Chapter 200 and NEPA (see Chapter 6). For such projects, an "Environmental Assessment" (EA) is prepared, and is the appropriate environmental review document. Based on impact analyses presented in this document, and the commitment to implement the mitigation measures described in this document, the proposed project will not cause a "significant" impact to the environment. The basis for concluding that the project's impacts will not be significant is provided in Chapter 6.

An early assessment that the project would not cause a significant impact was presented in the project's Draft EA. As described in Section 5.3, the Draft EA was reviewed by the public and government agencies. No new information from comments received on the Draft EA (see Section 5.3) changed the preliminary FONSI assessment (see below).

The third course of action applies to projects expected to have a "significant" impact on the environment. For such projects, an Environmental Impact Statement (EIS) is prepared, and is the appropriate environmental review document. Since the impacts of the proposed project will not be "significant", an EIS was not prepared.

Following agency and public review of the Draft EA, SDOT responded to all comments received (see Section 5.3). Based on Significance Criteria specified in HAR Chapter 200 (see Chapter 6), comments received on the Draft EA, and SDOT's responses to these comments, SDOT and FHWA have rendered Findings of No Significant Impact (FONSI) under HRS Chapter 343 and NEPA, respectively. Therefore, this Final EA / FONSI has been prepared, and will be publicly announced in the State Environmental Notice.

This Final EA is intended to disclose the environmental and social impacts that could result from the project's implementation, and commit to the implementation of specific mitigation measures. The project is being designed for travel demand levels projected for 2020, the planning horizon of the Long-Range Plan. Therefore, some of the environmental impacts are assessed for that year. Additionally, short-term impacts generated during project construction and impacts occurring immediately after construction are also assessed. Finally, this Final EA

also contains a record of all comments and consultation activities that have been conducted as part of project planning.

1.1.2 History

Kaumualii Highway generally follows a traditional trail system that linked east and west Kauai, especially near the area called "Knudsen Gap"—a natural pass in the Haupu Mountain Range. Before western contact, the Gap was a well-known and highly-trafficked area. However, there are few clues about the exact route of the trail system east of the Gap.

After western contact, economic and population growth on Kauai increased travel demand between the Gap and Lihue, and investments in transportation improvements began in the first half of the 19th century. Immigrants started settling in the Koloa Ahupuaa in the 1830s, fostering a rapid change in the area to sugar cane cultivation and cattle herding. During the same period, settlements also arose in the area of present-day Lihue. Koloa became the official port-of-entry for Kauai in the 1850s, and a sugar plantation was established in Lihue. However, despite prosperity in Koloa and Lihue during the second half of the 19th century, the route from the Gap to Lihue remained an unpaved, dirt carriage road through the end of the 19th century.

At the beginning of the 20th century, the road between the Gap and Lihue was part of a roadway system that connected the southwest and northeast coasts of Kauai. The road remained unpaved, however, until federal funds became available in the 1930s to assist in the construction of the "Kauai Belt Road" (the present Kaumualii Highway). Kauai Belt Road was constructed incrementally, with the last section from Nawiliwili Road to Lihue Town completed in 1950 (Lihue Mill Bridge was actually constructed earlier in 1936).

The last major project on Kaumualii Highway was the construction of a 120 m (420 ft) bridge over Huleia Stream in 1989. This bridge replaced the old "Halfway Bridge," which was constructed in the 1930s.

1.2 PURPOSE OF AND NEED FOR THE PROJECT

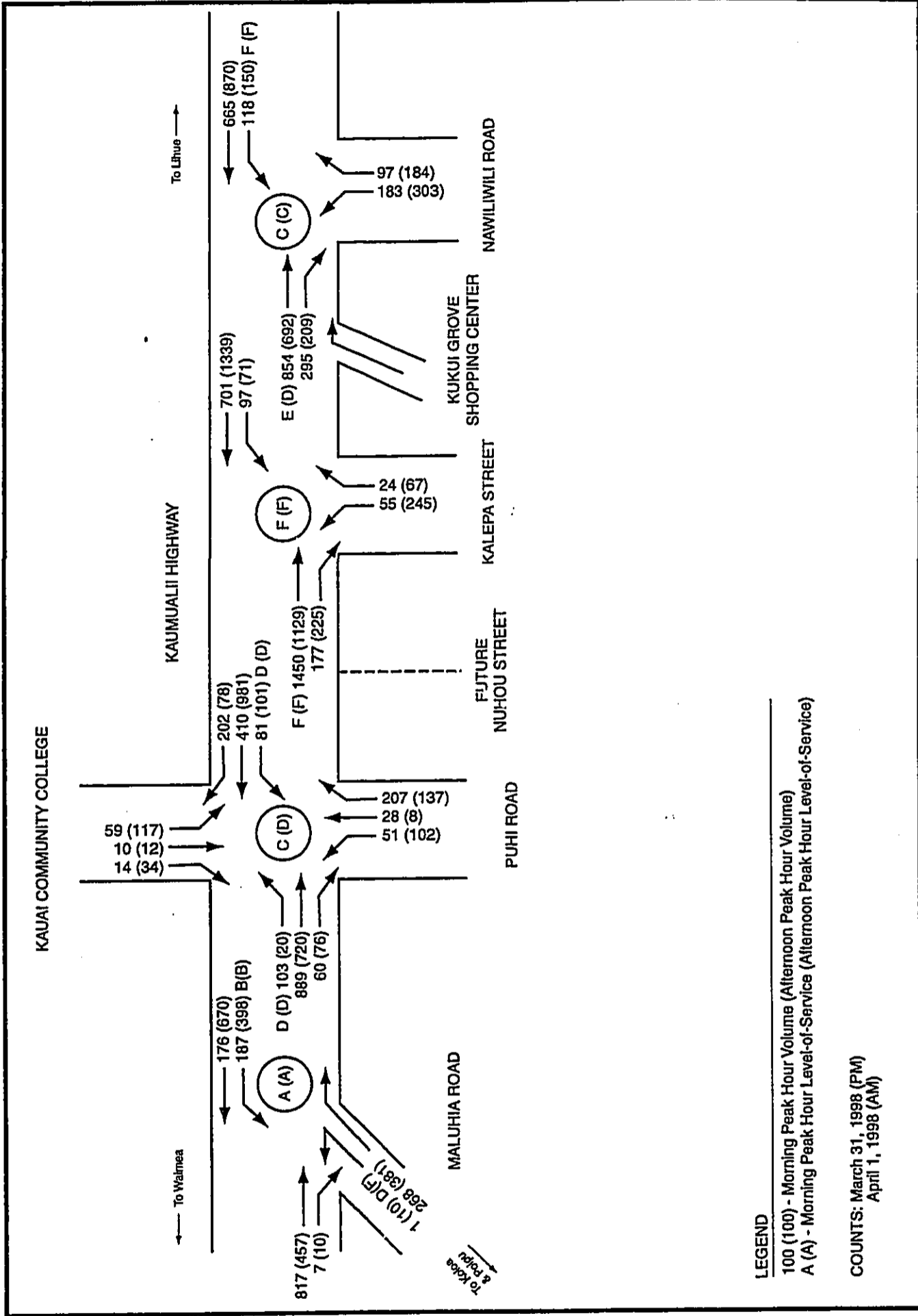
Increasing the vehicular capacity of Kaunualii Highway is proposed now because of existing deficiencies in roadway capacity. Since travel demand in the corridor is expected to increase, insufficient roadway capacity is expected to persist, and even worsen, unless the project is built. The project will also address two aspects of Kaunualii Highway that affect traffic safety: 1) sight distances that are less than current standards; and 2) a roadway vulnerable to head-on collisions. In addition, the project will provide the flexibility to maintain system connectivity during major incidents (e.g., traffic accidents).

1.2.1 Existing Capacity Deficiencies

Roadway performance is measured by level-of-service (LOS). LOS is reported on a scale from "A" through "F", representing best to worst conditions. The ratings are based on the ratio of traffic volume to roadway capacity (V/C ratio). High V/C ratios translate into traveler delay, which further generates driver discomfort, frustration, excess fuel consumption and air pollutant emissions, and lost travel time. LOS C or D is generally considered the least acceptable condition, with LOS E and F considered unacceptable.

According to the Long-Range Plan, traffic during the morning peak hour on Kaunualii Highway within the project limits operates at LOS E and F. This level of roadway congestion, especially on the west side of Lihue, is caused by the substantial amount of residential construction in the Eleele/Hanapepe and Lawai areas that has occurred since the late 1980s. In addition, the Poipu area has been slow to recover from damages sustained during Hurricane Iniki in 1992. Therefore, employment shifted to Lihue. Commuter travel that formerly flowed between residential areas west of Lihue and Poipu now moves between these residential areas and Lihue. These factors have combined to increase traffic volumes on Kaunualii Highway east of Maluhia Road 26 percent between 1988 and 1994 (Long-Range Plan), despite Hurricane Iniki. Since no capacity improvements have been made to Kaunualii Highway in that time frame, traffic conditions have worsened considerably.

Figure 1-2 shows peak hour traffic counts taken on Kaunualii Highway at four intersections from March 21 to April 1, 1998: Maluhia Road, Puhi Road, Kalepa Street, and Nawiliwili Road (Kaunualii Highway Widening, Lihue to Maluhia Road, Traffic Assessment Report, Kauai).



1998 Peak Hour Traffic Volumes and Levels-of-Service IMPROVEMENTS TO KAUMUALII HIGHWAY
Final Environmental Assessment
FIGURE 1-2



Hawaii, July 1998). The analysis of morning and afternoon peak hours of traffic in 1998 indicates that the section of Kaumualii Highway from Lihue to Puhi operates at LOS F, confirming the conclusion of the Long-Range Plan. The morning and afternoon peak hour congestion (LOS D to F) is primarily at intersections between Nawiliwili Road and Puhi (see Figure 1-2).

1.2.2 Future Transportation Demand

Population and economic growth in south Kauai is forecast to increase travel demand in this region. The Koloa-Poipu area is expected to remain an important visitor resort center, and is anticipated to experience employment and residential development. The Waimea to Port Allen region, and the Poipu to Lihue region, are both expected to experience population growth. According to the Long-Range Plan, the populations of the Waimea, Koloa, and Lihue districts are projected to increase by 7.8 percent, 35.3 percent and 31.7 percent between the years 1994 and 2020, respectively. Employment in the latter two is projected to increase 26.6 percent and 42.3 percent within the same years, respectively.

With Kaumualii Highway being the only regional highway in south Kauai, the capacity of this highway is insufficient to accommodate projected year 2020 traffic volumes due to population, employment and visitor growth (Long-Range Plan). Therefore, traffic conditions on Kaumualii Highway are expected to deteriorate below the already inadequate conditions reported in Section 1.2.1 if no capacity improvements are made to the highway. More information on the traffic conditions that will be experienced in the future if the project is not implemented is provided in Section 4.4.1.

1.2.3 Highway Safety Improvements

Kaumualii Highway is a safe roadway based on accident data. However, there are two aspects to roadway safety that will be improved by the proposed project.

First, there are a few sections of roadway with sight distances (how far ahead a driver can see) less than current highway standards. These sections of roadway exist because the highway was constructed before the adoption of current sight distance standards. Sight distance is important in terms of providing adequate passing and stopping distances. The project will

provide sight distances that conform to current highway standards along the entire section proposed for improvement.

Second, motorists using Kaunualii Highway are vulnerable to head-on collisions because Kaunualii Highway is a two-lane undivided roadway. Since many two-lane undivided highways have low traffic volumes, the number of head-on collisions on these roadways is relatively low. However, as traffic volumes increase, the possibility of head-on collisions also increases. Because Kaunualii Highway is a heavily used roadway, its conversion from an undivided roadway to a divided roadway will substantially reduce the chance of head-on collisions.

1.2.4 System Connectivity Improvements

When major incidents (e.g., traffic accidents) occur on Kaunualii Highway, one or both lanes have been closed to clear the highway and conduct investigations. When lanes are closed, traffic has been detoured onto cane haul roads, causing congestion and delays. Using cane haul roads for detour purposes is becoming more difficult because sugarcane is no longer being cultivated along much of the highway, and the haul roads are not being maintained. Therefore, their future utility as a temporary detour route cannot be assured. Since the project will provide two additional lanes in a divided roadway configuration, the likelihood of a major incident blocking all four lanes will be highly unlikely. Therefore, with the proposed project, the police and the SDOT will have the flexibility in the future to detour traffic flow around a major incident by using the unaffected roadbed of a divided Kaunualii Highway.

CHAPTER TWO

Alternatives

CHAPTER 2 ALTERNATIVES

This chapter describes the alternatives that receive detailed analysis in Chapter 4 of this Final Environmental Assessment (EA): one build alternative and the No Build alternative. It also briefly describes other alternatives that were considered, but were either rejected or modified in the evolution of the Build Alternative.

2.1 DESCRIPTION OF ALTERNATIVES

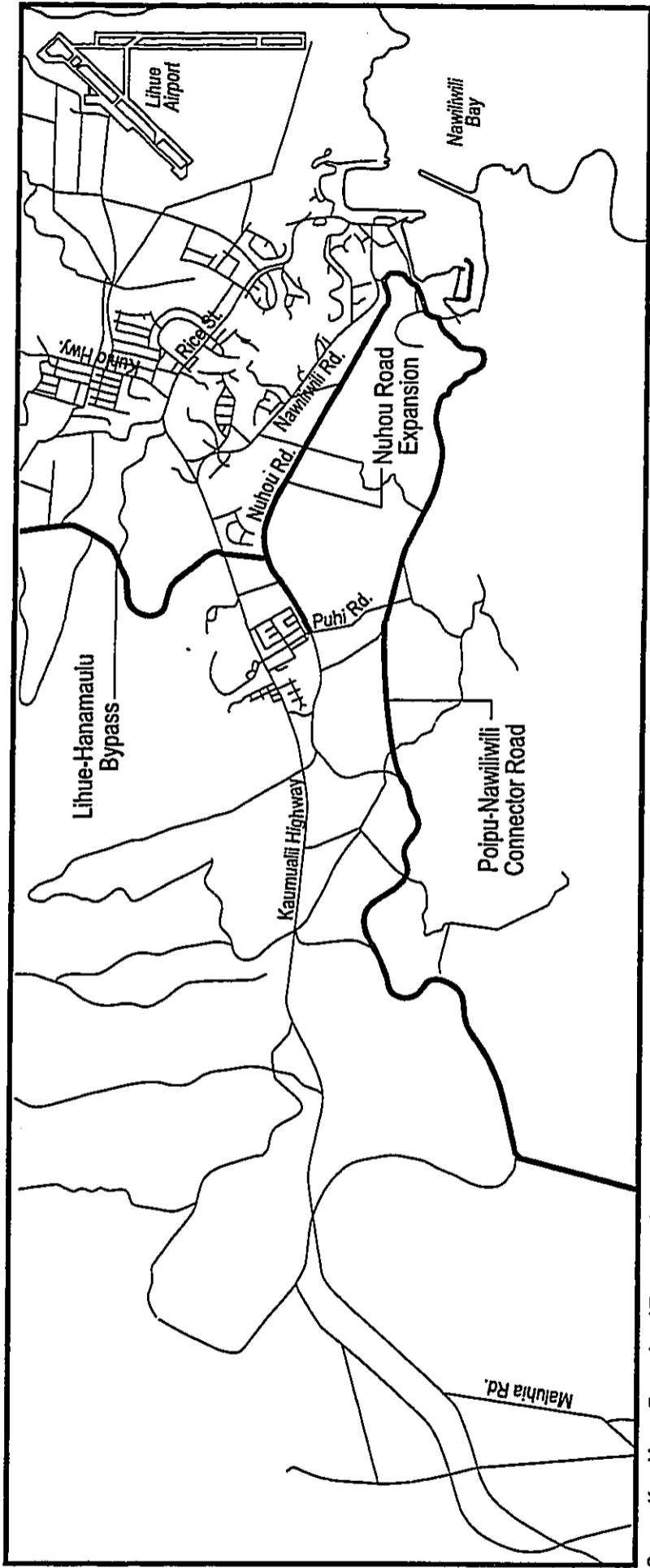
2.1.1 No Build Alternative

The No Build alternative consists of roadway improvements listed in the Kauai Long-Range Land Transportation Plan (May 1997) that are expected to be implemented by 2020, except for the proposed project addressed by this Final EA. Proposed roadway improvements in the vicinity of this project include (see Figure 2-1):

- Poipu-Nawiliwili Connector Road – new two-lane roadway makai of the existing Kaunualii Highway;
- Lihue-Hanamaulu Bypass Road – new four-lane divided roadway;
- Nuhou Road – new four-lane undivided roadway between Puhi Road and Nawiliwili Road;
- East Koloa-Poipu Bypass Road – widen to a four lane-lane undivided roadway between the proposed Poipu-Nawiliwili connector Road and Poipu Road; and
- Poipu Road – widen to a four-lane divided roadway between Lawai Road and the East Koloa-Poipu Bypass Road.

2.1.2 Build Alternative

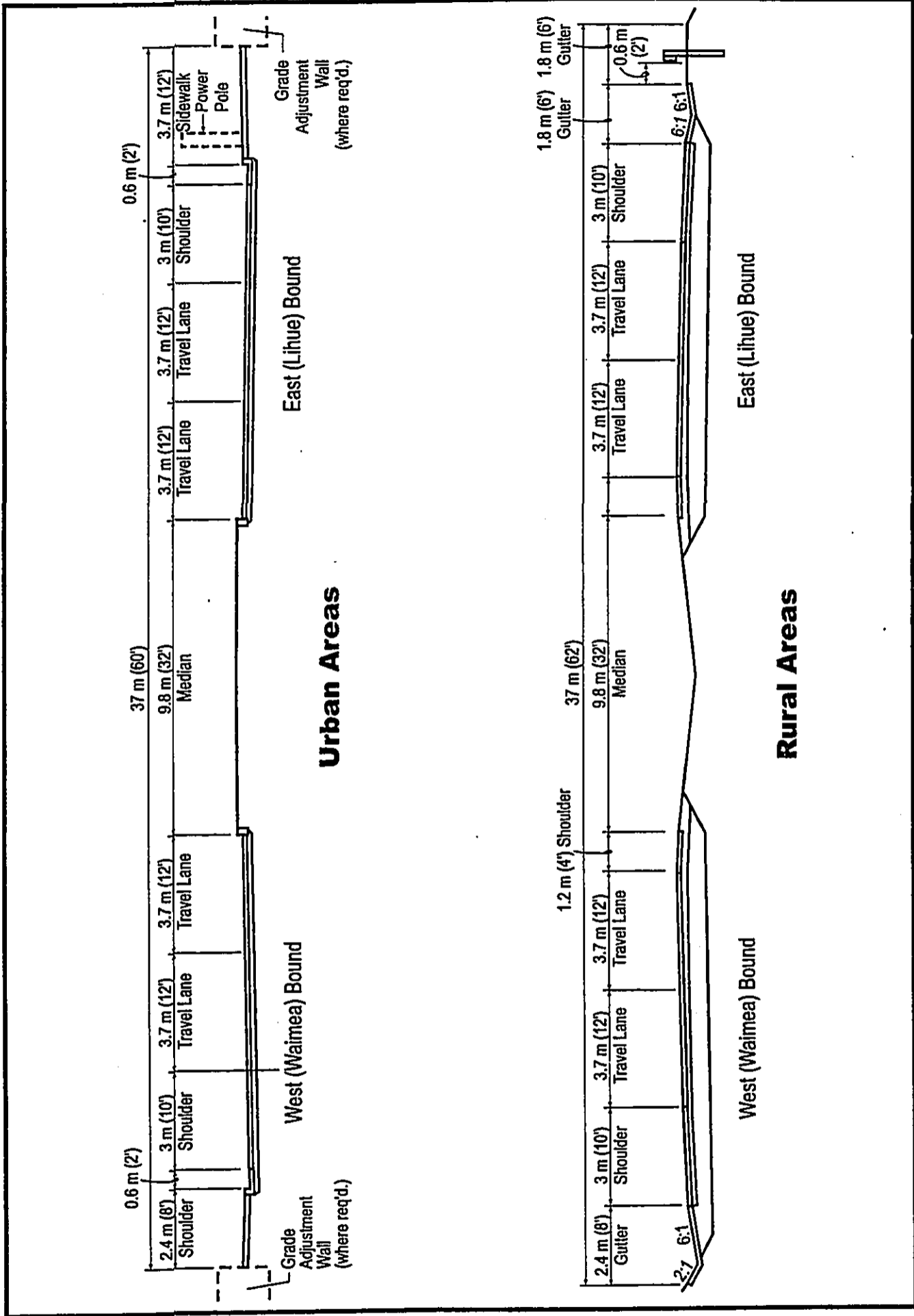
The proposed project will convert Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway (see Figure 2-2) between Kuhio Highway in Lihue to approximately 1340 m (4400 feet) west of Maluhia Road (see Figure 1-1). The west end was selected to provide a transitional section from the two-lane configuration west of Maluhia Road to the proposed four-lane configuration starting in the vicinity of the Kaunualii Highway / Maluhia



Source: Kauai Long-Range Land Transportation Plan, May 1997



Roadway Improvements Included in the No Build Alternative
IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
FIGURE 2-1



Source: ParEn, Inc.

Proposed Roadway Cross-Sections
 IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
 FIGURE 2-2

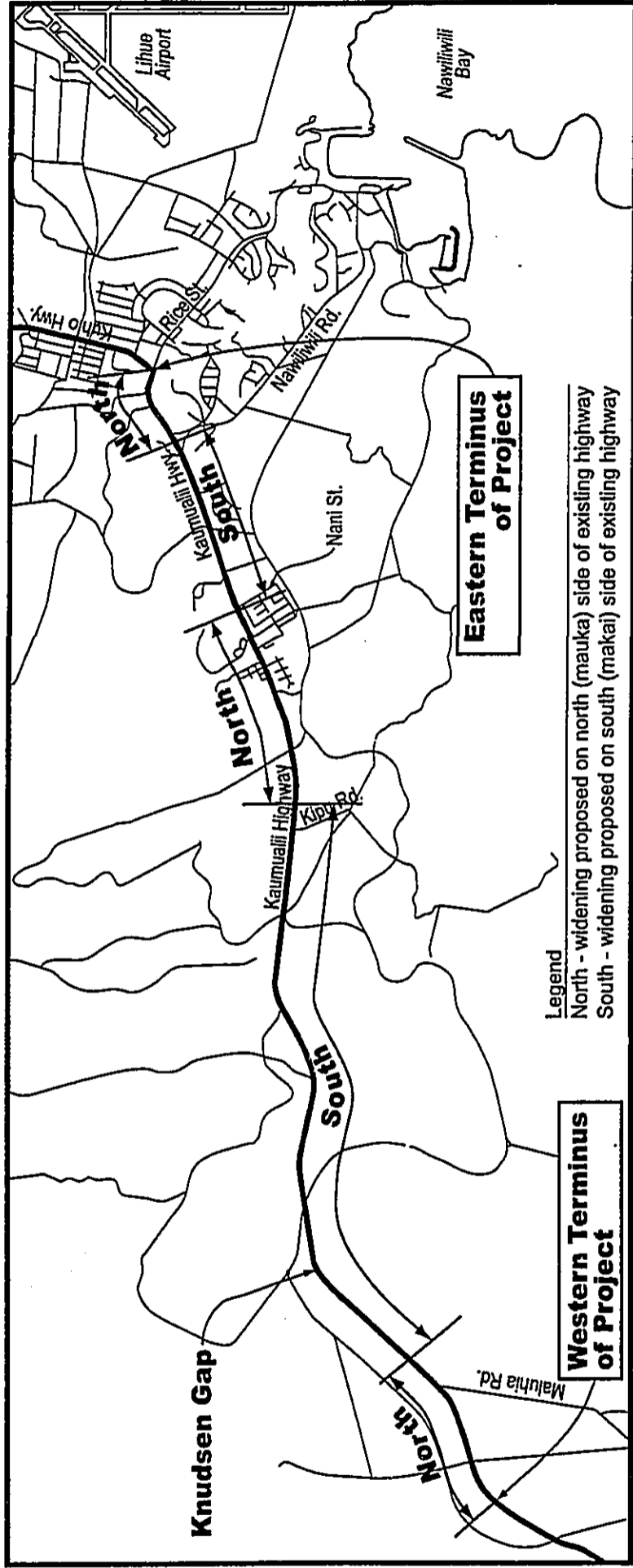
Road intersection. This intersection is essentially the project terminus as Maluhia Road provides access to Koloa and Poipu. The addition of two lanes on Kaumualii will substantially increase the vehicular capacity of the road. The total length of the project will be approximately 12 km (7.5 miles), and it will be constructed in phases.

Depending on location (see Figure 2-3), the widening will occur either on the south (makai) or the north (mauka) side of the existing highway alignment. As described in Section 2.2.1, widening Kaumualii Highway exclusively on the south (makai) or north (mauka) side was considered. However, a hybrid of mauka and makai widening was selected to lessen the environmental impacts of the project. In addition, an alternative was considered that would realign Kaumualii Highway between Knudsen Gap and the west end of the project to avoid both wetlands and the Maluhia Road tree tunnel, a unique collection of trees designated "exceptional" under the County's Exceptional Tree Ordinance (see Section 2.2.2). However, following a precise delineation of wetland areas along the project, it became possible to modify the Build Alternative to avoid these important resources (see Figure 2-4).

From Kuhio Highway in Lihue to Nawiliwili Road, Kaumualii Highway will be widened on the north (mauka) side to avoid:

- relocating the head shaft of a sugarcane conveyor that crosses Kaumualii Highway;
- displacing a Lihue Mill storage building;
- displacing part of Lihue Public Cemetery; and
- displacing part of a County Department of Water baseyard facility.

From Nawiliwili Road to Nani Street in Puhi, the proposed widening will switch to the south (makai) side to take advantage of existing SDOT right-of-way. From Nani Street to Kipu Road, the proposed widening will shift to the north (mauka) side to avoid businesses in Puhi, such as the Grove Farm office building (a potential historic property), Kauai Nursery and a Brewer Environmental Industries establishment. From Kipu Road to just west of a wetland adjacent to Weoweopilau Stream (see Section 3.7.3), a south (makai) side widening was selected to avoid the Haiku airstrip, Halenanahu Reservoir, the wetland, and an access road to a quarry at Huleia Bridge. From the wetland to the west end of the project limits, the proposed widening



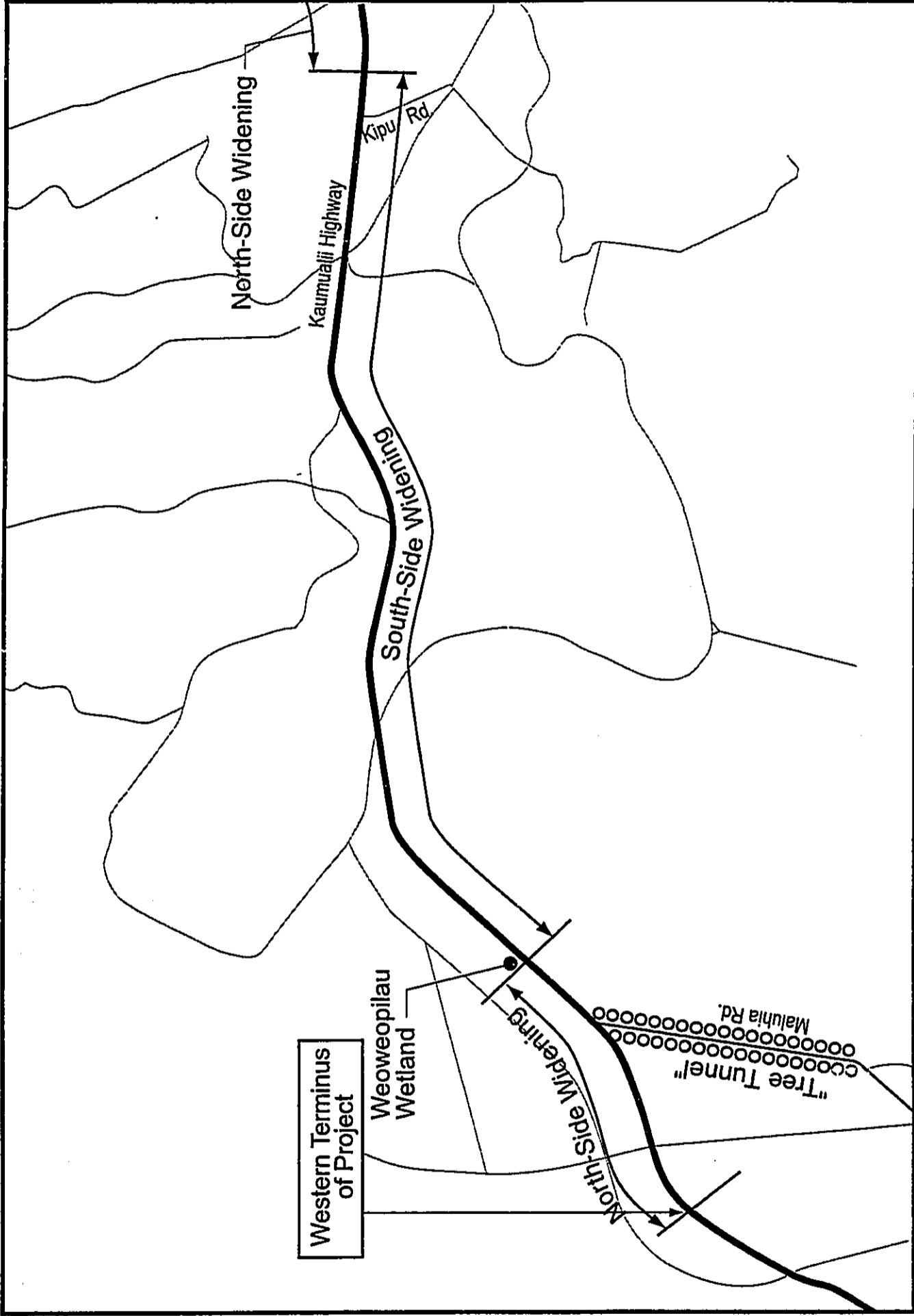
Source: ParEn, Inc.



GRAPHIC SCALE:
 0 2500 ft 5000 ft

0 1 km 2 km

Direction of Proposed Widening of Build Alternative IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
FIGURE 2-3



Source: ParEn, Inc.



GRAPHIC SCALE:



**Work Proposed in the Vicinity of Maluhia Road
IMPROVEMENTS TO KAUMUALII HIGHWAY**
Final Environmental Assessment
FIGURE 2-4

will be on the north (mauka) side to avoid displacing trees that are part of the Maluhia Road tree tunnel.

The area from Lihue to Puhi is mostly urban and is planned for further urban development. Therefore, the typical roadway cross-section for urban areas (shown on Figure 2-2) will be constructed from Kuhio Highway to Nuhou or Puhi Streets. The precise limits of the urban roadway section will be determined during the design phase.

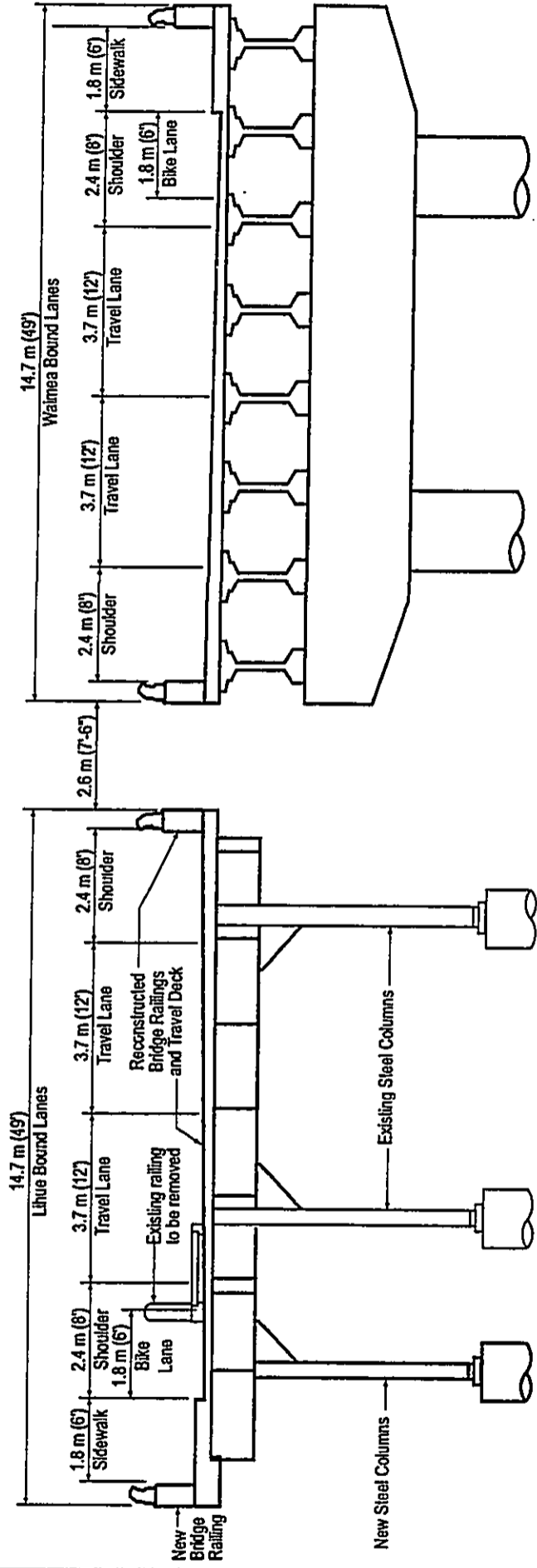
The section of Kaumualii Highway west of Puhi traverses agricultural and open space areas, and therefore the rural roadway cross-section shown on Figure 2-2 will be constructed.

The roadway will include two 3.7 m (12 feet) lanes in each direction, and paved 3 m (10 feet) wide shoulders (see Figure 2-2). The shoulders will be designated for use by cyclists. In urban areas, bike lanes will be striped at intersections because the 3 m (10 feet) wide shoulders will not be maintained in these areas. The urban areas will also include sidewalks conforming to the Americans with Disabilities Act. The median will be approximately 10 m (32 feet) wide in both urban and rural areas.

The roadway right-of-way will be at least 37 m (120 feet) wide, with the precise width of the right-of-way at any particular point depending on local terrain features, which will affect the amount of earthwork (grading) required.

Channels and culverts will generally convey the storm water runoff from the higher side of the road (mauka side) to the lower side (makai). Drainage from bridges over streams will be discharged into the streams. In urban areas, drainage facilities will include storm drains or grated catch basins along the curbs. New drainage facilities (culverts and piping) will generally be the same as those already on Kaumualii Highway, except that they will be of higher capacity, and will be extended or reconstructed to accommodate the additional two lanes, widened median, shoulders and other proposed new roadway elements.

The existing Lihue Mill and Huleia Bridges will remain in place, but will be converted to one-way traffic only (see Figures 2-5 and 2-6). New bridges will be constructed at these locations for traffic movements in the opposite direction. Lihue Mill Bridge, which crosses Nawiliwili Stream, will be modified to meet current federal safety standards. In particular, the existing



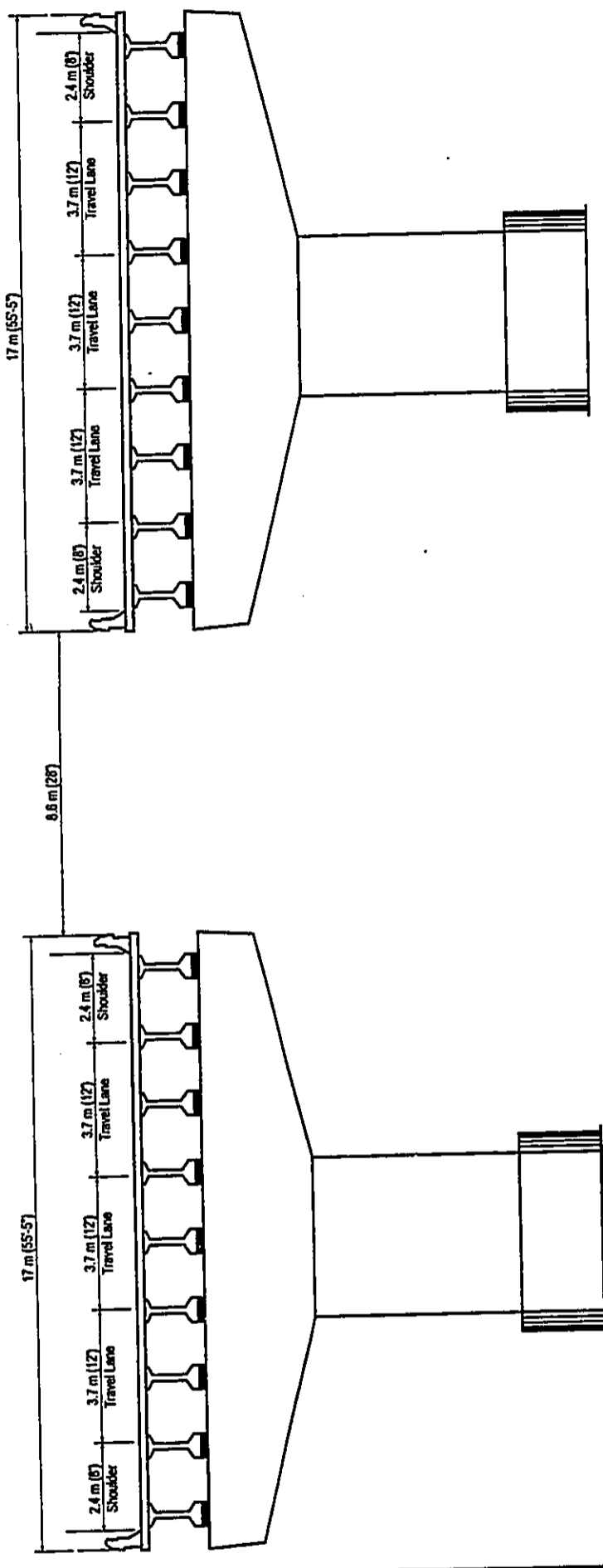
**Existing Bridge Structure
Modified for East (Lihue) Bound Traffic Only**

**New Bridge Structure
West (Waimea) Bound Traffic Only**

Source: ParEn, Inc.

**Cross-Sections of Modified and New Lihue Mill Bridges
IMPROVEMENTS TO KAUMUALII HIGHWAY**
Final Environmental Assessment
FIGURE 2-5

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



**New Bridge Structure
East (Lihue) Bound Traffic Only**

**Existing Bridge Structure
Modified for West (Waimea) Bound Traffic Only**

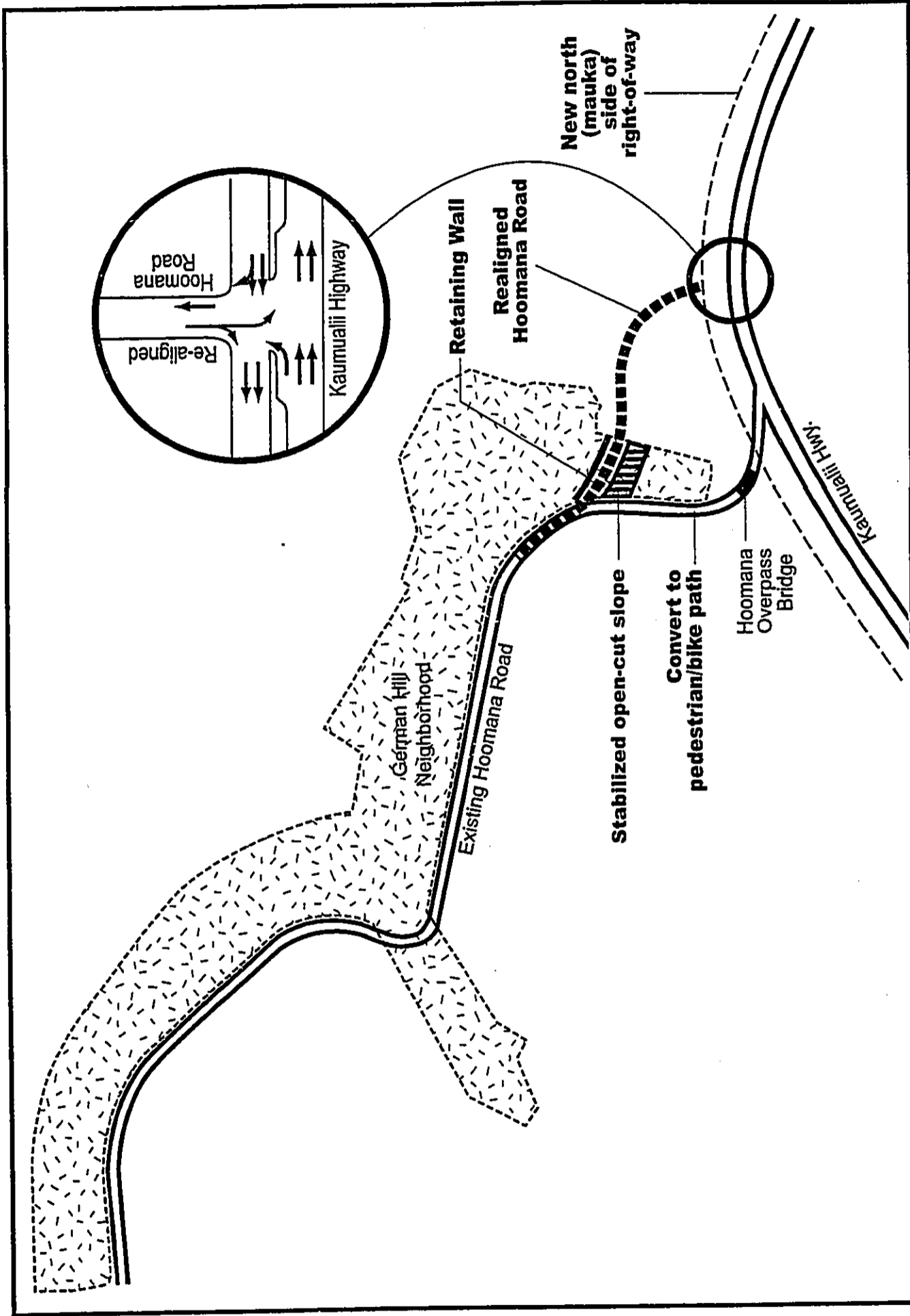
Source: ParEn, Inc.

**Cross-Sections of Modified and New Huleia Bridges
IMPROVEMENTS TO KAUMUALII HIGHWAY**
Final Environmental Assessment
FIGURE 2-6

steel railings, which are rusting, will be replaced with concrete railings. A second Lihue Mill Bridge will be constructed on the north (mauka) side of the existing bridge for west (Waimea) bound traffic (see Figure 2-5). This new bridge will be similar to the modified Lihue Mill Bridge in profile and style. The existing Huleia Bridge will also remain in place, and its lanes converted to west (Waimea) bound traffic only. A second Huleia Bridge will be constructed on the south (makai) side of the existing bridge for east (Lihue) bound traffic (see Figure 2-6).

The posted speed limit on Kaumualii Highway will remain at 80 km/h (50 mph) west of Puhi, 55 km/h (35 mph) from Puhi to Nawiliwili Road, and 40 km/h (25 mph) from Nawiliwili Road to Lihue. The existing traffic signals at Nawiliwili Road, Kalepa Street, Nuhou Street, and Puhi Road will be modified to accommodate the widened Kaumualii Highway. The Maluhia Road intersection may include new traffic signals if double left-turn lanes are provided for west (Waimea) bound to south (makai) bound traffic. Left-turn pockets will be provided at all intersections within the widened median.

Widening Kaumualii Highway on the north (mauka) side in Lihue, as proposed, will require closing the existing intersection with Hoomana Road (see Figure 2-7). Hoomana Road is the only access to German Hill, a residential neighborhood of about 20 houses and a church. To maintain access to German Hill, Hoomana Road will be re-aligned as shown on Figure 2-7. The new Hoomana Road intersection will be approximately 90 m (300 feet) east of the existing intersection. Unlike the existing Hoomana Road intersection, all left-turn movements will be allowed at this new intersection. The section of Hoomana Road from Kaumualii Highway to where the new alignment will meet the existing road will be closed to vehicular traffic, but will be converted to a pedestrian/bike path accessing the new north (mauka) shoulder of the widened Kaumualii Highway. As shown on Figure 2-7, a retaining wall will be constructed on the north (mauka) side of the re-aligned road so that no or little right-of-way will be needed from the adjacent property. An open cut-slope will be used on the south (makai) side because the property affected will have to be acquired anyway because the re-aligned road will cut-off this property's access to Hoomana Road.



Realigned Hoomana Road
 IMPROVEMENTS TO KAUNUALII HIGHWAY
 Final Environmental Assessment
 FIGURE 2-7

Source: ParEn, Inc.

Not to Scale



2.2 ALTERNATIVES CONSIDERED BUT DROPPED FROM CONSIDERATION

The following build alternatives were considered, but were dropped from further consideration. In this section, these alternatives are described and the basis of their rejection presented.

- widen Kaumualii Highway only on the south (makai) side (Option A);
- widen Kaumualii Highway only on the north (mauka) side (Option B);
- widen Kaumualii Highway between Lihue to Knudsen Gap and re-align highway between Knudsen Gap and west end; and
- transportation system management.

In addition, the project had to consider options for certain elements of the project. These options shown below and the rationale for their rejection are also described in this section.

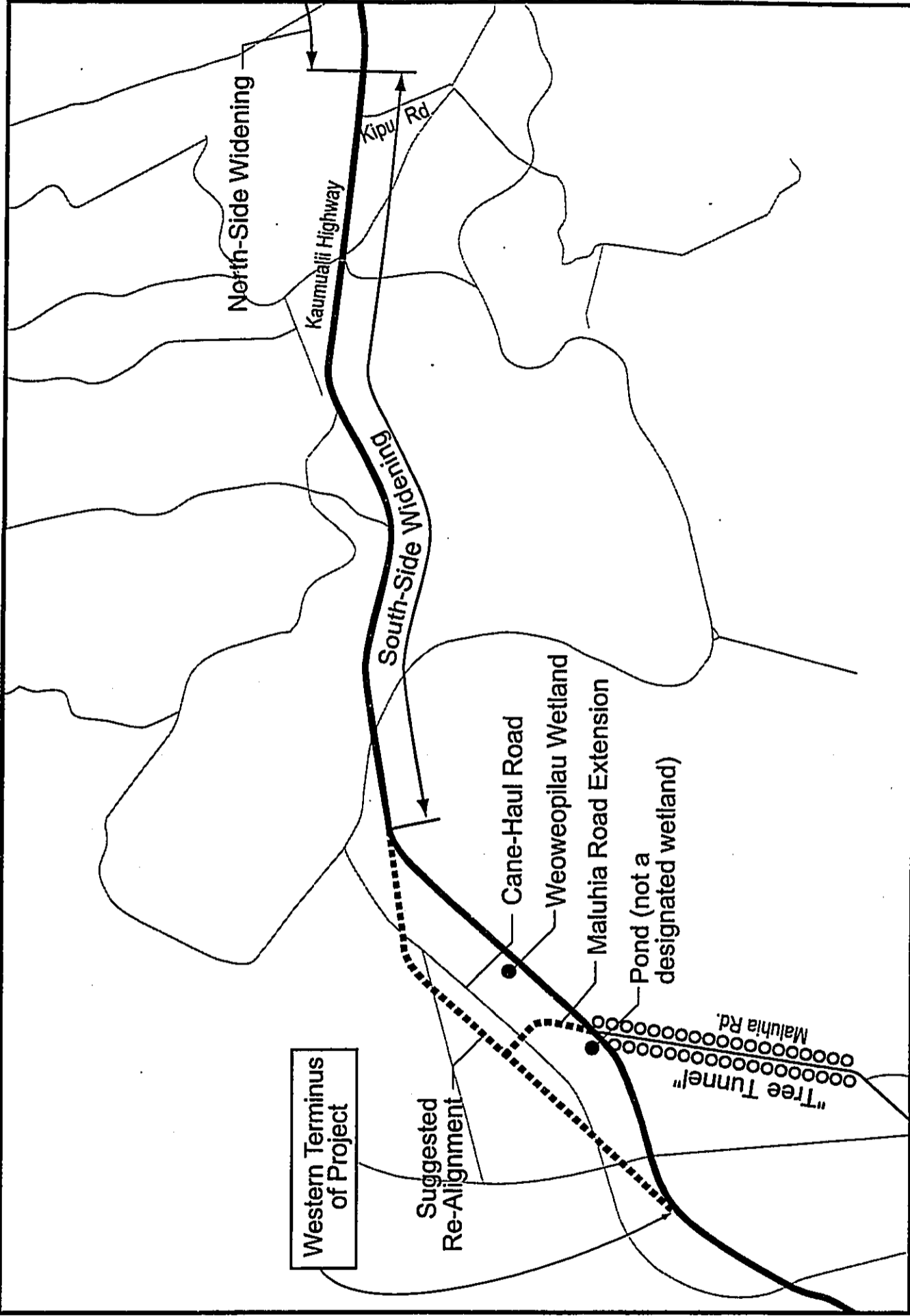
- options for maintaining access to German Hill; and
- alternative for modifying Lihue Mill Bridge.

2.2.1 Widening on North or South Side Only

Options A and B were eliminated from further study because a hybrid approach could achieve the project's purposes and needs while avoiding impacts to Lihue Public Cemetery, Lihue Mill, Grove Farm office building, a Brewer Environmental Industries site, Kauai Nursery, Puhi businesses, County of Kauai Department of Water facility, and the need for substantial modification to a cane conveyor system owned by Lihue Plantation.

2.2.2 Partial Re-Alignment

To avoid what was initially considered two wetland areas (Upon subsequent investigation, one of the areas initially thought to be a wetland did not meet the regulatory definition of a wetland. See Section 3.7.3) and the north (mauka) end of the Maluhia Road tree tunnel, an alternative was suggested during the March 2, 1999 public meeting (see Section 5.2) that would re-align Kaumualii Highway between Knudsen Gap and the west end (see Figure 2-8). Upon conceptual engineering, the re-aligned highway would be displaced approximately 370 m



Partial Re-Alignment Alternative
 IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
 FIGURE 2-8

Source: ParEn, Inc.
 N
 GRAPHIC SCALE:
 0 1250 ft 2500 ft 0 500 m 1 km

(1200 feet) to the north (mauka) of the existing highway. This new roadway segment would be approximately 2830 m (9300 feet) long and require a right-of-way width of up to 60 m (200 feet). The section of Kaumualii Highway that would be replaced by the re-alignment would be abandoned and perhaps converted to agricultural use. Maluhia Road would be extended to meet the new alignment.

Following delineation of wetlands in the project area according to the US Army Corps of Engineers' regulatory definition, the boundaries of the wetlands near the Maluhia Road tree tunnel were clarified. The Build Alternative was then modified to avoid both the Maluhia Road tree tunnel and the wetlands in the vicinity. Since the objectives of the partial re-alignment alternative were now met by the modified Build Alternative at substantially less cost, the rationale for continuing to study the partial re-alignment alternative was no longer valid and it was dropped from further consideration.

2.2.3 Transportation System Management

Transportation system management (TSM) is the application of construction, operational, and institutional actions to make the most efficient and cost effective use of existing transportation infrastructure. TSM actions are categorized as being either "supply-side" or "demand-side". Supply-side actions are intended to increase the capacity of existing infrastructure (e.g., a roadway) using relatively "low cost" and localized solutions, such as use of contraflow lanes, intersection channelization, improved pavement or signage, synchronized traffic signals, etc. Individual supply-side actions are often undertaken in localized areas to alleviate traffic problems at spot locations.

Demand-side actions are intended to reduce congestion by decreasing the number of vehicles traveling at the same time by such measures as increasing vehicle occupancy, lowering the peak travel demand by shifting the time of travel, or making the use of single-occupant vehicles less attractive. Demand-side actions include high-occupancy vehicle (HOV) lanes, ride-sharing programs, parking management, and transit service improvements. Except for HOV facilities, most demand-side actions are more appropriate within the context of a regional or metropolitan area.

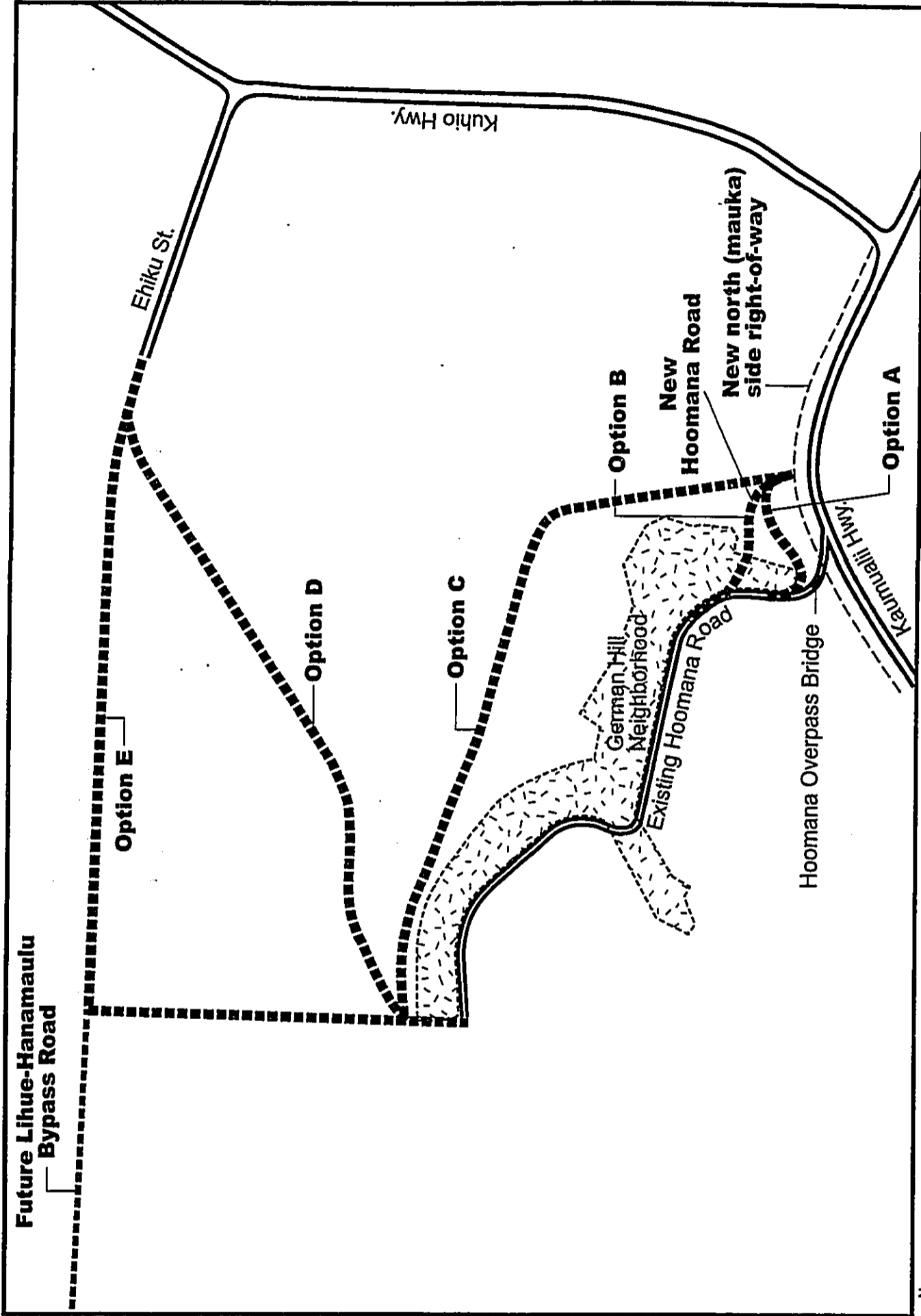
For this project, supply-side TSM actions to address the purpose and need of the project were assessed. However, without widening the highway, low-cost actions to improve the intersections on Kaumualii Highway would not sufficiently increase capacity to address existing and future travel demand. Providing HOV lanes were not considered because that would require widening the highway. Therefore, a TSM alternative was eliminated from further consideration.

2.2.4 Options to Maintain Access to German Hill

As described in Section 2.1.2, the north (mauka) side widening of Kaumualii Highway in Lihue will force the closure of the existing Hoomana Road intersection, the only access to a small residential neighborhood called German Hill. Five optional routes were considered as shown on Figure 2-9. As described in Section 2.1.2, Option B was selected to be part of the Build Alternative. Options C, D or E, which would provide access to the neighborhood from the north (mauka) side, was not selected because the German Hill residents, as communicated during a January 13, 2000 public meeting and subsequent comment letters (see Appendix A), strongly objected to these options. They believe that any of these routes would cause unacceptable impacts to their community, as well as to Lihue Plantation. Option A was also generally not favored by the German Hill residents, but was not as objectionable as Options C, D and E. Option A would not meet County design standards because of its tight curves, and therefore, was not supported by the County Department of Public Works (see Appendix A) who would retain jurisdiction of the road after it is constructed. For this reason, SDOT decided to drop Option A from consideration.

2.2.5 Alternative for Modifying Lihue Mill Bridge

As described in Section 3.10.2, Lihue Mill Bridge is considered historic and eligible for National Register of Historic Places. Although the Build Alternative will not displace the bridge, it will modify it by converting its two lanes to one-way traffic, widening the bridge deck and replacing the steel railings. In accordance with Section 106 of the National Historic Preservation Act (see Section 4.10.1), the proposed modification will have an "adverse effect" on this historic property (see Section 4.10.2). A second alternative to modify the bridge was developed to explore the possibility of preventing the "adverse effect" determination under Section 106 (see



Source: ParEn, Inc.
Not to Scale



Options Considered to Maintain Access to German Hill
IMPROVEMENTS TO KAUMUALII HIGHWAY
Final Environmental Assessment
FIGURE 2-9

Figure 2-10). However, since this alternative would still remove the steel railings (an important characteristic making the bridge historic), and require the widening of the bridge deck despite a separate pedestrian bridge, it would not change the "adverse effect" determination. Therefore, this alternative was dropped from consideration.

2.3 ESTIMATED COST, PHASING AND SCHEDULE

The estimated cost of the Build Alternative is between \$75 million to \$110 million in year 2000 dollars. This cost includes right-of-way acquisition and construction.

Due to funding constraints, the entire project will be constructed in phases. The first phase will extend approximately 5 km (3 miles) from Kuhio Highway in Lihue to Kipu Road. The limits of subsequent phases have not yet been determined.

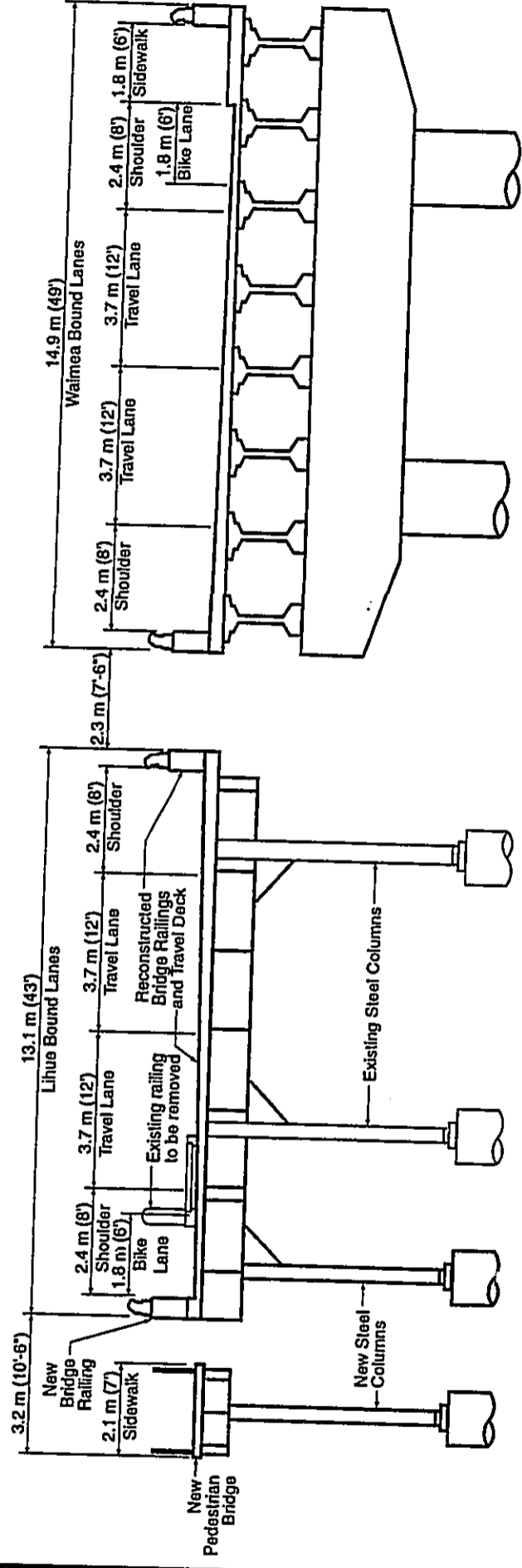
The present project schedule is shown on Table 2-1. The environmental review process will be completed by September 2000. Design, permitting and right-of-way acquisition is expected to last up to two years, and is scheduled begin immediately after completion of the environmental review. Construction of phase one is expected to begin in 2003, and the first phase of improvements to Kaumualii Highway is scheduled to open for service in 2005. The schedule of subsequent phases will depend on funding availability.

**Table 2-1
Proposed Project Schedule**

Activity	Period
Design, Permitting and Right-of-Way Acquisition ¹	Fall 2000 to 2002
Construction of Phase One	2003
Open for Service	2005
Construction of Subsequent Phases	TBD

Notes: ¹ Design will be completed for all phases. Permitting and right-of-way acquisition will only be done for the first phase.
TBD: to be determined, based on funding availability.

Source: State of Hawaii, Department of Transportation, March 2000.



Source: ParEn, Inc.

Cross-Sections of Alternative Modifications of Lihue Mill Bridge IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
FIGURE 2-10



CHAPTER THREE
Affected Environment

CHAPTER 3 AFFECTED ENVIRONMENT

This chapter describes existing environmental conditions in the area potentially affected by the project. Impacts of the proposed project on these conditions are discussed in Chapter 4.

3.1 LAND USE

3.1.1 Regional Setting

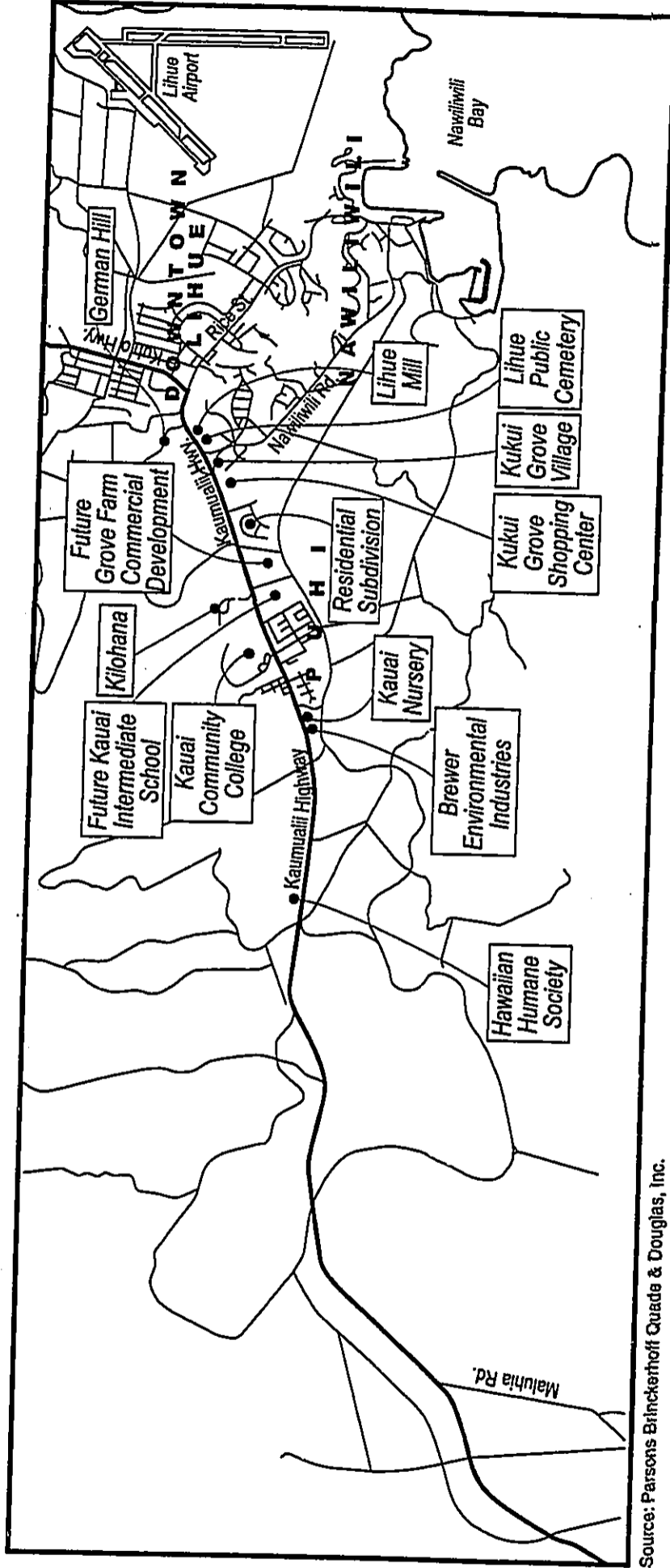
The County of Kauai consists of two major islands, Kauai, the "Garden Isle", and Niihau, the "Forbidden Isle". The 1997 population of the County was estimated at 56,000 (State of Hawaii, Department of Business, Economic Development and Tourism, 1997), making it the least populous of the four counties in the State. With the population of Niihau at about 230 (1990 census), over 99 percent of the population in the County resides on the island of Kauai. Kauai is the fourth largest island in the Hawaiian Archipelago, with an area of approximately 1431 km² (552 square miles).

The project will be located in the southeast portion of the island between Lihue, the largest urban area on the island, and Maluhia Road (see Figure 1-1). Some construction will extend west of Maluhia Road to provide a transition from existing two-lane configuration to the proposed four-lane configuration.

Neighborhoods and communities near the proposed project include Lihue, German Hill, Nawiliwili and Puhi. The locations of these neighborhoods and communities are shown on Figure 3-1.

3.1.2 Existing and Planned Land Uses

The eastern portion of the project area is characterized by urban land uses and open space. The western portion of the project area is open space, primarily former sugarcane fields. Selected land uses are shown on Figure 3-1.



Source: Parsons Brinckerhoff Quade & Douglas, Inc.



GRAPHIC SCALE:



**Existing and Planned Land Uses
IMPROVEMENTS TO KAUMUALII HIGHWAY**
Final Environmental Assessment
FIGURE 3-1

Near the eastern terminus of the project (the Kaumualii Highway / Kuhio Highway / Rice Street intersection) is the Lihue town center. The town center includes the County Building and Civic Center, a State office building, and other commercial establishments. Northwest of the eastern terminus is a small residential neighborhood called German Hill. German Hill consists of about 20 houses and a church. Access to this neighborhood is via Hoomana Road, a narrow roadway extending mauka from Kaumualii Highway immediately east of Lihue Mill Bridge (Nawiliwili Stream). To the immediate south (makai) of Lihue Mill Bridge, within the Nawiliwili Stream floodplain (see Section 3.7.4), is Lihue Mill, which is owned by Amfac Land Company, Ltd. To the west of the mill and on a hill above Kaumualii Highway is Lihue Public Cemetery. Just outside of Lihue, along the south (makai) side of Kaumualii Highway and adjacent to Nawiliwili Road, is Kukui Grove Village, a business park, and Kukui Grove Shopping Center, the largest shopping center on Kauai. A residential subdivision is located near the shopping center.

Puhi is the town closest to Lihue along Kaumualii Highway. This community has its roots in the island's sugarcane industry, and is the location of the Grove Farm headquarters, which was established in the mid-1930s (see Section 3.10.2). Puhi includes a small commercial business core, Kauai Community College on the north (mauka) side of the highway, a small industrial district located approximately 0.5 m (1/3 mile) south (makai) of the highway, and residences that include some low-density multi-family units. Kauai Nursery, a flower nursery, and a Brewer Environmental Industries establishment is located just west of Puhi on the south (makai) side of the highway. Open space (former agricultural lands) predominates west of Puhi. A Hawaiian Humane Society facility is located approximately 2.5 km (1.5 miles) west of Puhi.

Most of the land adjacent to the remainder of the Highway is open space and agricultural land, with the exception of Kilohana, a building on the Hawaii Register of Historic Places, which was once the residence of a prominent family on Kauai.

According to the County Planning Department, planned urban development in the project area would be limited to the south (makai) side of Kaumualii Highway between Puhi and Lihue. Grove Farm Properties, Inc., the major landowner in this area, is planning to develop both commercial and residential uses in this locale. The State is constructing Kauai Intermediate School just east of Puhi, adjacent to the Nuhou Road extension (see Figure 3-1). Based on

County planning documents, such as the currently proposed update of the Kauai General Plan (see Section 3.1.3.2a), Puhi would eventually merge with Lihue and Nawiliwili.

3.1.3 Governmental Plans, Policies And Controls for the Affected Environment

3.1.3.1 Hawaii State Plans and Controls

3.1.3.1a Hawaii State Plan

The Hawaii State Plan (June 1991) consists of comprehensive goals, objectives, policies and priorities in all areas of government functions. These functions include the protection of the physical environment, the provision of public facilities, and the promotion and assistance of socio-cultural advancement.

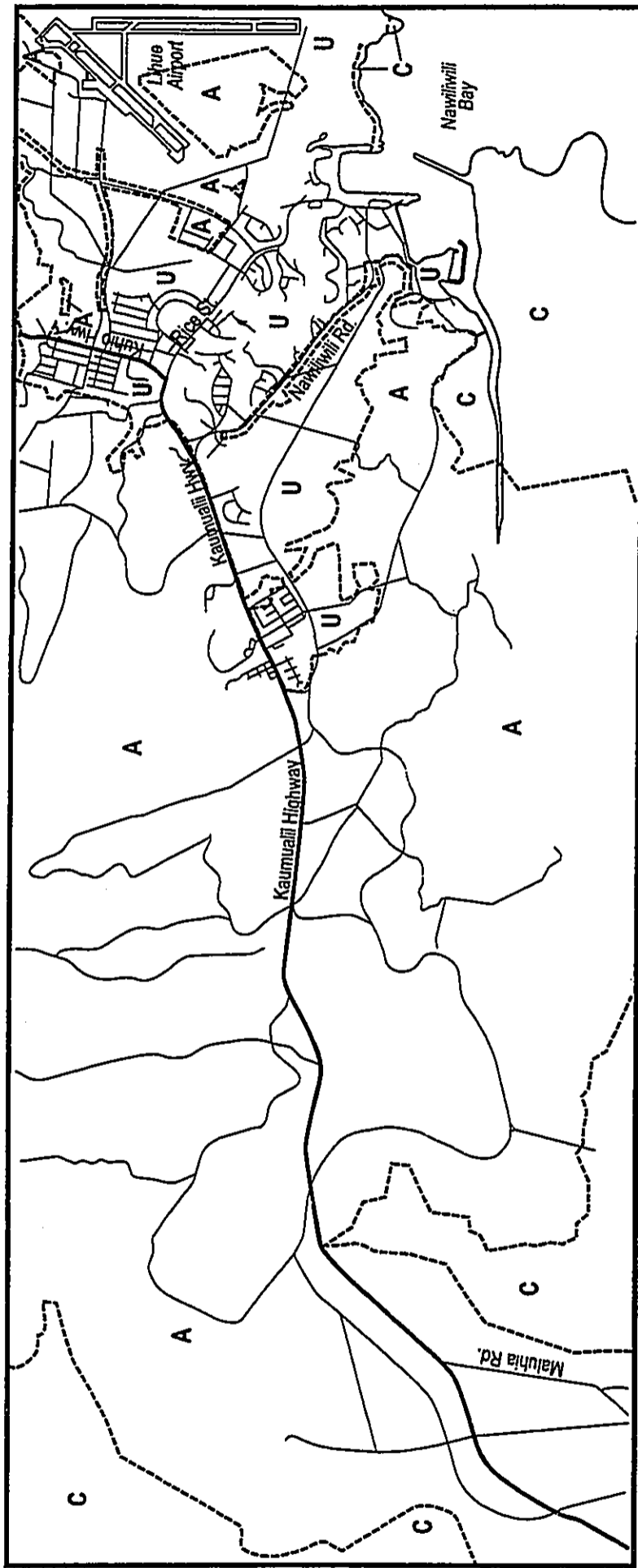
3.1.3.1b Hawaii State Land Use Controls

Chapter 205, Hawaii Revised Statutes (HRS), relating to the State Land Use Commission (SLUC), regulates land use through classification of State lands into four districts: Urban, Agriculture, Conservation and Rural. The intent of the land classification is to accommodate growth and development while retaining the natural resources of the state. Each district has specific land use objectives and development constraints.

Figure 3-2 shows the State land use districts in the study area. Urban designated lands in the study area are primarily in Lihue and Puhi. Kaunualii Highway traverses Agriculture designated lands along most of the project limits.

3.1.3.1c Coastal Zone Management Act (CZM) (Chapter 205A, HRS)

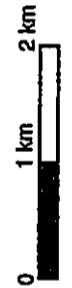
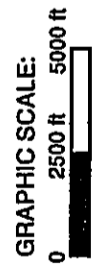
Kaunualii Highway is within the State's Coastal Zone Management (CZM) area. The objectives and policies of the Hawaii CZM Program are to protect and manage Hawaii's coastal resources. Federally assisted activities affecting Hawaii's coastal zone, such as the proposed project, must be consistent with the CZM objectives and policies.



Source: State Land Use Commission

LEGEND

- A: Agricultural
- C: Conservation
- U: Urban



State Land Use Districts
IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
FIGURE 3-2

3.1.3.1d Kauai Long-Range Land Transportation Plan

The State of Hawaii Department of Transportation (SDOT) and the County of Kauai cooperatively prepared the Kauai Long-Range Land Transportation Plan (May 1997). The Long-Range Plan guides the development of major surface transportation facilities and programs in the County, identifying short and long-range (year 2020) strategies and actions leading to an integrated intermodal transportation system. The Long-Range Plan identified improvements to Kaunualii Highway as a high-priority action because of the existing congestion along this corridor, and because future residential and employment growth is expected to occur between Waimea and Lihue. The Long-Range Plan stated that Kaunualii Highway from Koloa Road to Kuhio Highway / Rice Street (in Lihue) should be widened from its present two-lane undivided configuration to a four-lane divided configuration.

3.1.3.2 County of Kauai Plans and Controls

3.1.3.2a General Plan

In accordance with the Kauai County Charter, the General Plan establishes "policies to govern the future physical development of the County" and "guide[s] all future council action regarding land use and development regulations, urban renewal programs and expenditures for capital improvements." The first General Plan, adopted in 1971, led to the creation of the County's Comprehensive Zoning Ordinance, Subdivision Ordinance and several functional plans. An update of the General Plan was adopted in 1982, and is still the official General Plan for the County.

Goals of the General Plan relevant to the proposed project are as follows:

- To maintain the concept of Kauai as "The Garden Isle"; thus, insuring any growth be in consonance with the unique landscape and environmental character of the island.
- To insure that all physical growth is consistent with the overall ecology of the island.
- To recognize those aspects of the island and its people which are historically and culturally significant, and to maintain and enhance such aspects as a continuing expression of the island's physical and social structure.

- To manage development of social and physical infrastructure based on growth targets, priorities and efficient utilization of facilities and services.

The General Plan includes simplified land use designations (as opposed to detailed zoning designations) to serve as a flexible policy tool. The General Plan land use designations for the study area is provided in Figure 3-3.

The County is currently in the process of updating the General Plan. A Discussion Draft was completed in December 1999, and public hearings are being held to obtain comments on the General Plan update. According to the County Planning Department, the new General Plan may be adopted by the end of 2000 or early 2001 (interview held on January 13, 2000). Since the new General Plan is not yet adopted, the proposed project is using the 1982 General Plan, the current official plan, to determine project consistency.

3.1.3.2b County of Kauai Zoning

The County Planning Department administers the zoning ordinance. Most of the project area is zoned Agriculture or Open (space). The urban areas in the project area are Lihue and Puhi. Although most of Lihue is zoned "Residential up to 20 units per acre (R-20)", it does have relatively large areas zoned Commercial and Industrial. Puhi also has residential areas zoned up to R-20, and much of these areas are undeveloped. Puhi also has Commercial zoned land adjacent to Kaunualii Highway and a relatively large Industrial zoned district (Limited Use).

3.1.3.2c County of Kauai Special Management Area

Chapter 205A outlines special controls, policies and guidelines for development within the area along the shoreline designated by the 1975 Shoreline Protection Act as the Special Management Area (SMA). This Act gave the counties authority to issue permits for development activities proposed within the SMA. The proposed project is not located in the SMA.

3.2 FARMLAND

Amfac maintains active sugarcane fields on the north (mauka) side of Kaumualii Highway between Puhii and Lihue. Lihue Mill, owned and operated by Amfac, is located on the south (makai) side of Lihue Mill Bridge. A cane conveyor structure crosses Kaumualii Highway just east of Lihue Mill Bridge. The conveyor is used to transport cultivated sugarcane from the fields north (mauka) of Kaumualii Highway to the mill for processing.

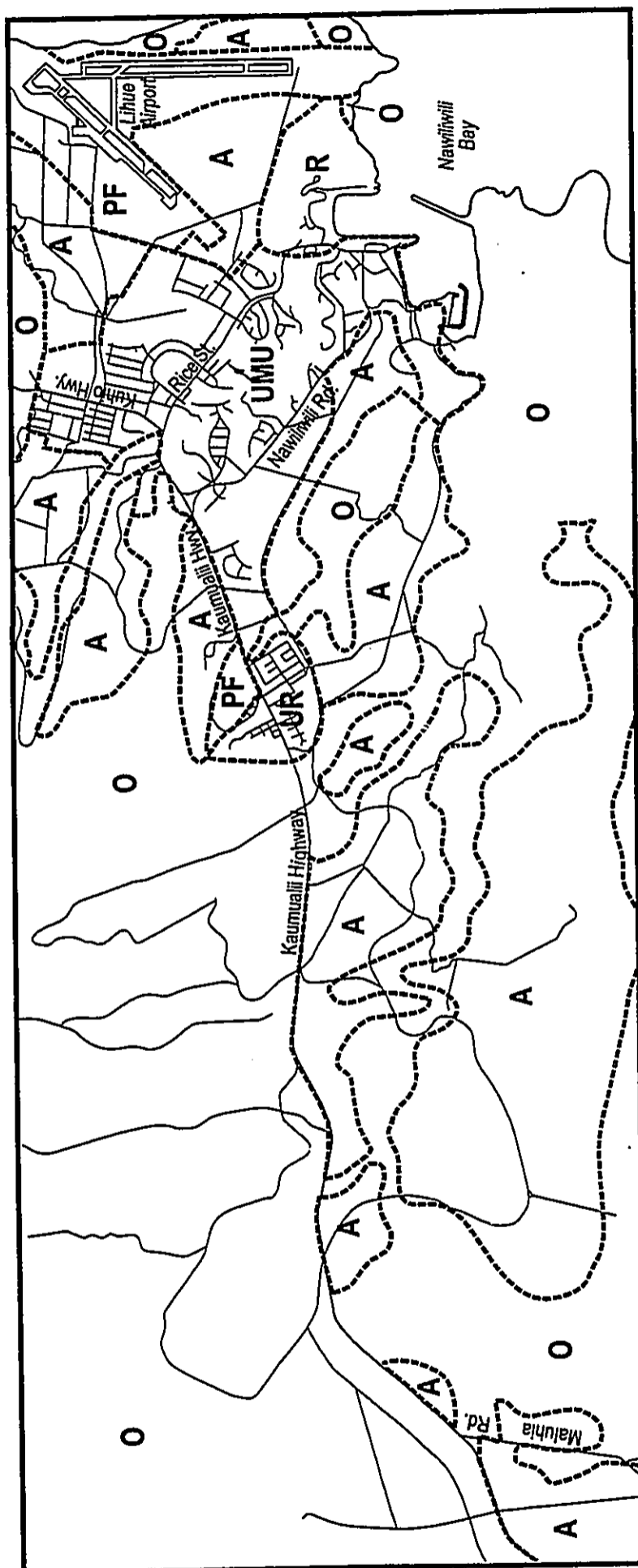
Former sugarcane lands exist from Puhii to the west end of the project. These lands are not presently used for farming, but are still zoned for agriculture.

3.3 SOCIAL AND ECONOMIC ACTIVITY

This section summarizes the demographic, housing and income characteristics of residents in the study area. For the purpose of this exercise, the study area is defined by U.S. census tracts (CTs) 404, 405 and 406 (see Figure 3-4). CT 404 covers the area from Puhii to Hanamaulu, a community located to the north of Lihue (see Figure 3-4); CT 405 encompasses Lihue; and CT 406 includes Koloa and Poipu. The information presented in this section is used to determine whether any minority and low-income population will experience disproportionately high or adverse impacts from the proposed project per the Executive Order on Environmental Justice (#12898) (see Section 4.3.4).

3.3.1 Demographic Characteristics

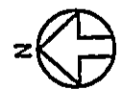
Table 3-1 exhibits selected demographic characteristics of the study area. In 1990, the population of the study area in the CTs listed above was 15,647, or approximately 30 percent of the County population. Table 3-1 also displays the number of households, families, ethnicity and age distributions for the study area in 1990. Filipinos, Whites, Japanese and Hawaiians comprised 31, 29, 23 and 11 percent of the overall population in the study area in 1990, respectively. Since these four racial groups made up 94 percent of the total population of the study area in 1990, the representation of other racial groups was very small. The percentages of Whites, Japanese and Hawaiians in the population of the study area are roughly the same or close to their percentages in County and State population totals. Filipinos, on the other hand,



Source: 1982 Kauai General Plan Update, 1982

LEGEND

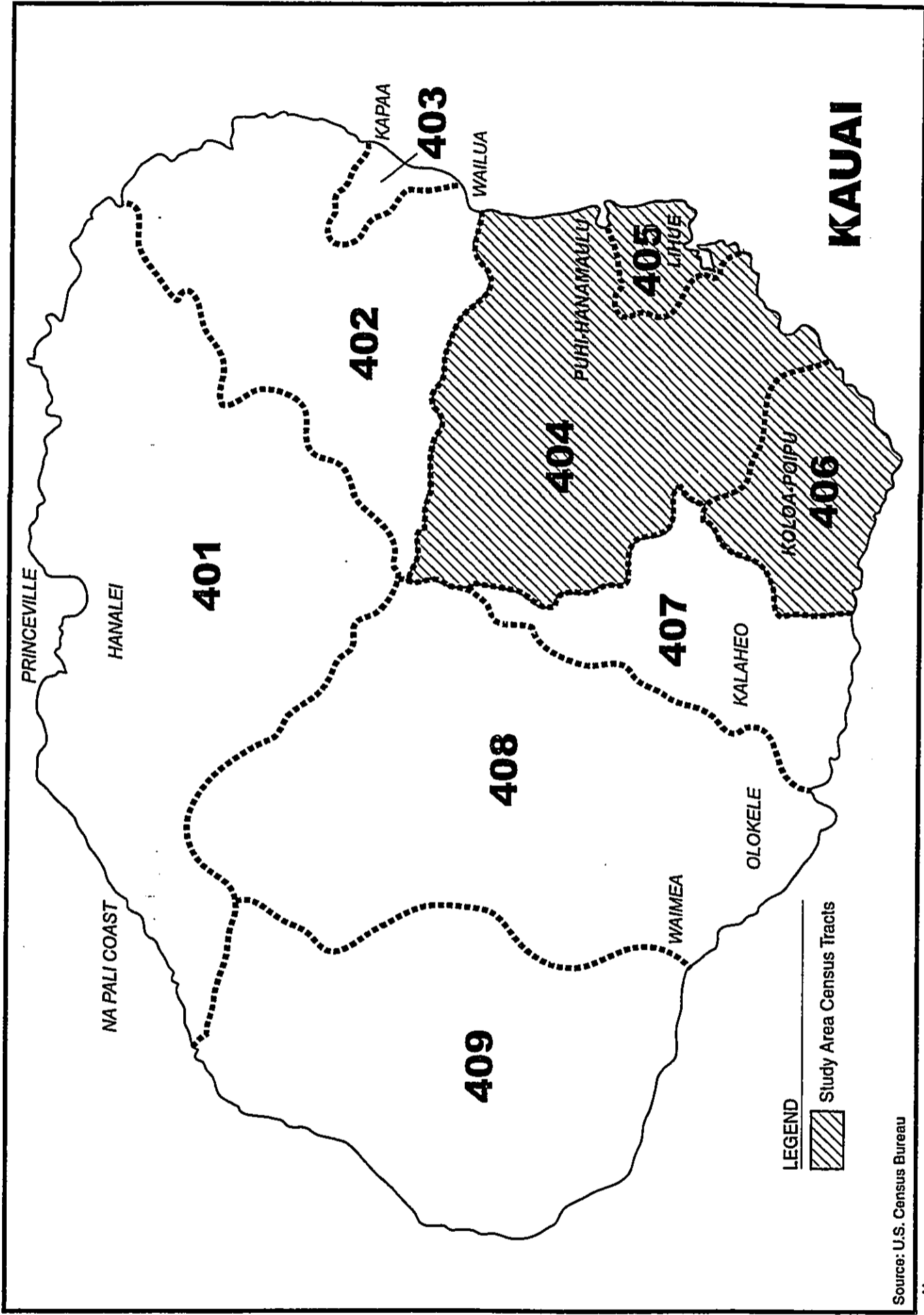
- O: Open
- A: Agricultural
- UR: Urban Residential
- UMU: Urban Mixed Use
- R: Resort
- PF: Public Facility



GRAPHIC SCALE:
 0 2500 ft 5000 ft

0 1 km 2 km

**General Plan Land Use Designations
 IMPROVEMENTS TO KAUNUALII HIGHWAY**
 Final Environmental Assessment
 FIGURE 3-3



Census Tracts of Study Area
IMPROVEMENTS TO KAUMUALII HIGHWAY
Final Environmental Assessment
FIGURE 3-4

are over-represented in the study area when compared to the total County and State population totals. Between Puhi and Hanamaulu (the region surrounding Lihue), Filipinos made up the majority (55 percent) of the residents. The age distribution of residents in the study area does not appear to be substantially different from the age distribution of the County or State.

**Table 3-1
Demographic Information of Selected Areas**

	Puhi - Hanamaulu	Lihue	Koloa-Poipu	Kauai	State
	CT 404	CT 405	CT 406		
Population	5,462	5,292	4,923	51,177	1,108,229
Sex					
Males	53%	51%	51%	51%	51%
Females	47%	49%	49%	49%	49%
Households	1,392	1,983	1,683	16,326	356,748
Families	1,207	1,291	1,267	12,502	266,439
Ethnicity					
White	18%	30%	41%	35%	33%
Chinese	1%	3%	1%	2%	6%
Filipino	55%	18%	20%	26%	15%
Japanese	13%	33%	23%	20%	23%
Other Asian	0%	0%	2%	1%	3%
Hawaiian	10%	15%	10%	14%	12%
Pacific Islander	0%	0%	0%	1%	2%
Black	0%	0%	0%	0%	2%
Other Race	3%	1%	3%	3%	2%
Age					
Less than 5 years	9%	4%	7%	8%	7%
5 to 17 years	21%	16%	20%	20%	18%
18 to 34 years	28%	22%	24%	24%	29%
35 to 64 years	31%	37%	36%	35%	34%
65 or more years	11%	20%	14%	13%	11%

Note: CT = census tract

Source: U.S. Census Bureau

3.3.2 Housing Characteristics

Table 3-2 exhibits certain housing characteristics of selected areas in 1990. Overall, 77 percent of the housing units were one-unit structures, with Puhi-Hanamaulu and Koloa-Poipu having housing stocks comprised of 89 percent and 84 percent single-family units,

respectively. Lihue, as the County's largest urban area, has a more mixed housing stock that comprised of 64 percent single-family units, and 31 percent in structures containing five or more units.

**Table 3-2
Housing Information of Selected Areas**

	Puhi - Hanamaulu	Lihue	Koloa-Poipu	Kauai	State
	CT 404	CT 405	CT 406		
Housing Units	1,417	2,145	1,800	17,613	389,810
Units in Structure					
1 Unit	89%	63%	84%	86%	61%
2 to 4 Units	6%	5%	4%	6%	6%
5 or More Units	2%	31%	10%	6%	32%
Mobile of Other	2%	0%	2%	2%	1%
Tenure					
Owner-Occupied	65%	53%	61%	59%	54%
Renter-Occupied	35%	47%	39%	41%	46%
Occupancy					
Occupied	97%	93%	90%	93%	91%
Vacant	3%	7%	10%	7%	9%

Note: CT = census tract

Source: U.S. Census Bureau

Overall the owner versus renter occupancy ratio for the study area was 59:41 in 1990, which is the same as the owner-renter occupancy ratio for the County. Within communities of the study area, this ratio varied from 65:35 in Puhi-Hanamaulu to 53:47 in Lihue. The overall occupancy rate of the study area is not much different than occupancy rates for the County or State. However, within particular areas it varied, such as a 97:3 ratio in Puhi-Hanamaulu to 90:10 ratio in Koloa-Poipu. The relatively high number of visitor accommodation units in Koloa-Poipu could explain this difference.

3.3.3 Income and Employment Characteristics

Table 3-3 exhibits certain income characteristics for selected areas in 1990. Median household incomes in the study area were higher than the median income for the County, which was \$37,425 in 1989. Incomes varied from a low of \$38,942 in Koloa-Poipu to a high of \$41,169 in Lihue. The poverty rates of residents in the study area were lower than the rate for

the County or State, ranging from a low of five percent in Lihue to seven percent in both Puhī-Hanamaulu and Koloa-Poipu.

**Table 3-3
Income Information of Selected Areas**

	Puhī - Hanamaulu	Lihue	Koloa-Poipu	Kauai	State
	CT 404	CT 405	CT 406		
Median Household Income	\$40,739	\$41,169	\$38,942	\$37,425	\$38,829
Selected Sources of Income (Percent of Households)					
Social Security	34%	34%	29%	30%	25%
Retirement	24%	26%	22%	20%	20%
Public Assistance	13%	5%	4%	7%	7%
Households Below Poverty Level	7%	5%	7%	8%	8%

Note: CT = census tract

Source: U.S. Census Bureau

From 1987 to 1997, the unemployment rate for Kauai County ranged from 2.8 percent in 1989 to 14.3 percent in 1994. Within the period from 1992 to 1997, the unemployment rate was no less than 10.3 percent, which occurred in 1992 the year that Hurricane Iniki struck the island causing catastrophic damage to the hotels and the visitor industry. The year before Hurricane Iniki, the unemployment rate was 4.1 percent.

3.3.4 Economic Characteristics

Kauai's most important industry is tourism. The island features some of the State's most spectacular and scenic areas, such as the Na Pali Coast and Waimea Canyon. The year following Hurricane Iniki, the island attracted 571,800 visitors. Since then, the number of visitors per year has steadily increased, and in 1998, Kauai attracted 1,038,800 visitors, close to the pre-Hurricane Iniki annual visitor counts. In 1998, there were approximately 17,200 visitors on Kauai per day, which is about 30 percent of the resident population. About 42 percent of all jobs on Kauai are directly or indirectly related to the visitor industry. Visitor accommodation areas on Kauai are located in Princeville on the north end of the island; Kapaa-Wailua on the east end of the island; Lihue; and Poipu-Kalaheo on the south end of the

island. Kapaa-Wailua and Poipu-Kalaheo contain 30 percent and 34 percent of the island's hotel units, respectively.

Agriculture was once Kauai's principal industry, but because of the difficulties faced by the State's sugarcane and pineapple industries in the past few years, the role of the agricultural industry in the County's economy is relatively small. In 1998, the County estimated that agricultural jobs made up only 3.2 percent of the total jobs, despite the fact that 140,800 acres, or about 40 percent, of the island's land area is classified as Agriculture by the State. The County is developing diversified agriculture to replace sugarcane and pineapple cultivation with some success. Between 1990 and 1997, sales of diversified agricultural crops have more than quadrupled from \$6.8 million to \$30.6 million. The fallow agricultural lands on the west end of the project area may be used for diversified agriculture.

Kauai's high technology industry is dominated by the Pacific Missile Range Facility, located on the west side of the island, approximately 40 km (25 miles) from the west end of the proposed project. The facility is one of the of the largest employers on the island, with a total workforce of approximately 870, with 360 of these in high technology fields.

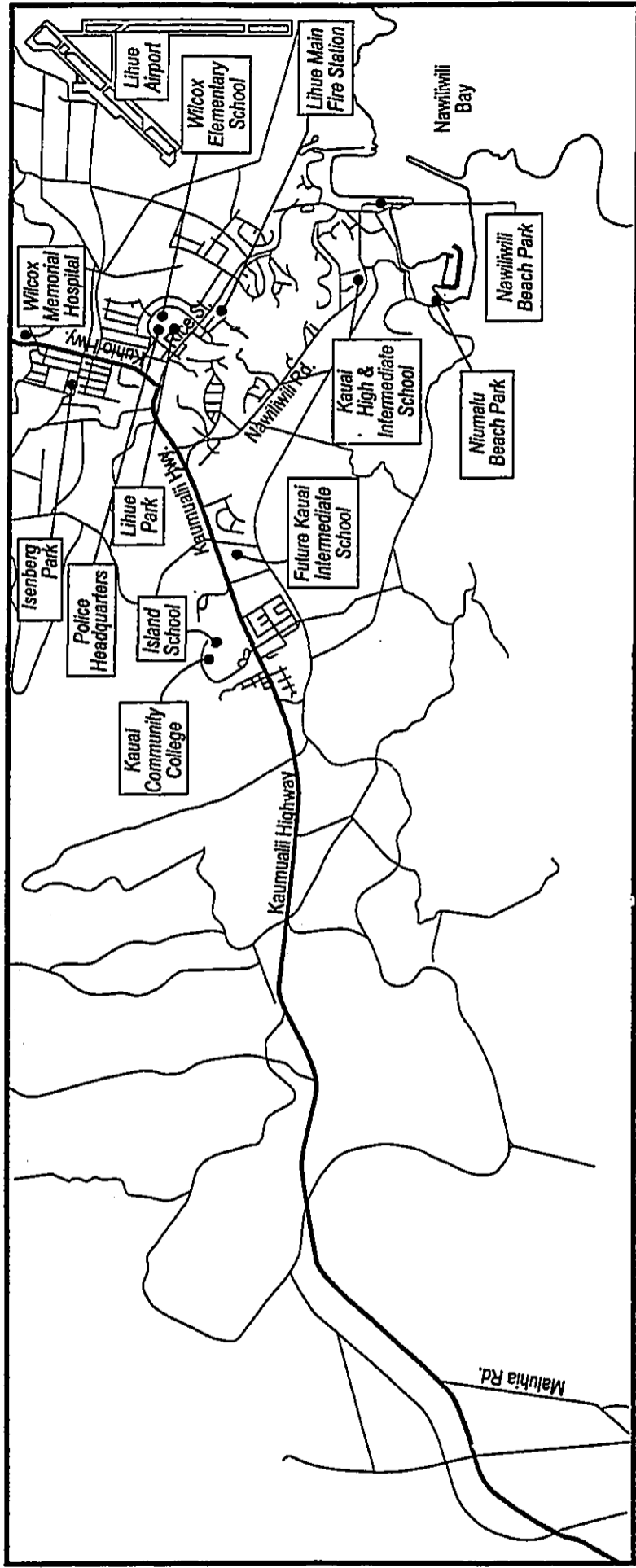
3.3.5 Public Facilities and Services

The locations of public facilities in the vicinity of the project are shown on Figure 3-5.

Police patrols in the study area operate out of the main police headquarters in Lihue (see Figure 3-5). The main fire station is also located in Lihue, and another fire station is in Koloa (see Figure 3-5).

The schools in the project area include Wilcox Elementary School in Lihue, Kauai High and Intermediate School in Nawiliwili, King Kaumualii Elementary School in Hanamaulu, and Kauai Community College and Island School in Puhi (see Figure 3-5). An intermediate school is under construction near Kaumualii Highway just east of Puhi.

The hospitals in the general vicinity of the project area include Wilcox Memorial Hospital in Lihue, and West Kauai Medical Center in Waimea (see Figure 3-5). Wilcox Memorial Hospital provides full surgical and support services. Its emergency center provides comprehensive emergency treatment 24 hours a day, seven days a week. West Kauai Medical Center



Not Shown: Koloa Fire Station, King Kaumualii Elementary School, West Kauai Medical Center, Hanamaulu Beach Park
 Source: Parsons Brinckerhoff Quade & Douglas, Inc.



GRAPHIC SCALE:



**Public Facilities and Services
 IMPROVEMENTS TO KAUMUALII HIGHWAY**
 Final Environmental Assessment
FIGURE 3-5

provides emergency, maternity, surgical, intensive care, long-term care, coronary care and rehabilitation services.

There are no parks or recreational resources adjacent to Kaumualii Highway within the project limits. The nearest parks are in Lihue and Nawiliwili, which include Lihue Park, Isenberg Park, Nawiliwili Beach Park, Niupalu Beach Park, Hanamaulu Park and Hanamaulu Beach Park (see Figure 3-5). A park is currently being planned south (makai) of Kaumualii Highway, just west of Nuhou Street.

3.4 INFRASTRUCTURE

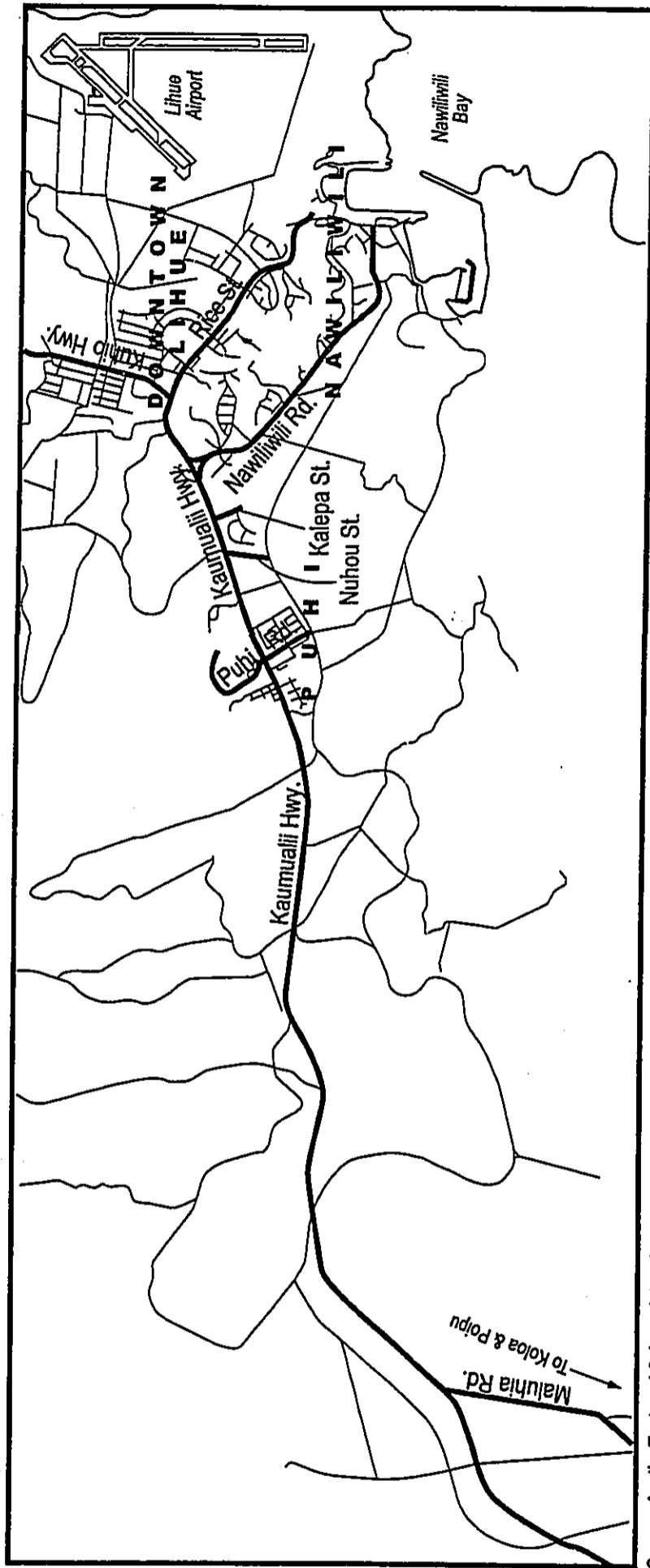
3.4.1 Transportation

3.4.1.1 Roadway System

Major roadways in the project area are shown on Figure 3-6.

Kaumualii Highway is a major State primary arterial, designated Route 50, running east-west between Lihue and west Kauai, a distance of approximately 55 km (35 miles). The highway is the primary, or in some areas, the only access route for the communities between Lihue and Barking Sands, which include Poipu, Koloa, Lawai, Eleele, Port Allen, Hanapepe, Kalaheo, Waimea, and Kekaha. Kaumualii Highway links with Kauai's other major highway, Kuhio Highway (State Route 56) in Lihue. Kuhio Highway is the primary arterial roadway serving east and north Kauai. Kaumualii Highway also links with Rice Street, a major County collector in downtown Lihue.

The major cross streets along Kaumualii Highway within the project limits include Nawiliwili Road, Kalepa Street, Nuhou Street, Puhi Road, and Maluhia Road. Nawiliwili Road is a State arterial running between Kaumualii Highway and Nawiliwili Bay. It is a four-lane divided roadway at Kaumualii Highway, but most of this facility is a two-lane roadway. Nawiliwili Road services residential communities in south Lihue, Nawiliwili, and Kukui Grove Shopping Center. Kalepa Street is a four-lane undivided County collector that services a small residential community to the west of Kukui Grove Shopping Center, as well as the shopping center. Nuhou Street is a two-lane County collector that was recently constructed to serve the future



Source: Auslin, Tsutsumi & Associates, Inc.



Major Roadways
IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
FIGURE 3-6

Kauai Intermediate School, and planned commercial development. Puhi Road is a County collector that services the Puhi community to the south (makai) of Kaumualii Highway, and Kauai Community College to the north (mauka) of Kaumualii Highway. Maluhia Road is a two-lane County arterial providing access to the Koloa and Poipu communities. Maluhia Road is known as the "tree tunnel" road because of the trees that line both sides of the road starting at the intersection with Kaumualii Highway.

3.4.1.2 Bicycle and Pedestrian Facilities

Kaumualii Highway is presently designated a bike route from Lihue to Knudsen Gap, although the highway has no bike lanes. The highway shoulders can be used for cycling. Bike Plan Hawaii: A State of Hawaii Master Plan (April 1994), prepared by the SDOT, recommended that Kaumualii Highway be made into a bike route. As described above, a portion of Kaumualii Highway has been designated a bike route since the Bike Plan was completed. A bike route is any street or highway designated for shared use of bicycles and motor vehicles or pedestrians or both.

Because of its rural environment, existing pedestrian facilities in the study area are limited to some of the residential neighborhoods.

3.4.1.3 Transit Services

The County Transportation Agency, an agency under the Office of the Mayor, provides regular route and para-transit services. The regular-route bus services the entire island from Kekaha on the southwestern end to Hanalei on the north side. The bus route uses Kaumualii Highway to service the communities between Kekaha and Lihue. Headways are between a half-an-hour to two hours, and service is from 5:30 a.m. to 7:00 p.m. Para-transit provides door-to-door service for qualified individuals, such as seniors, human service agency participants, and those certified and registered as eligible for ADA (Americans with Disabilities Act) service. The buses used for the regular routes are relatively small with capacities of about 15 to 26 persons.

3.4.1.4 Highway Safety

Relatively few vehicle incidents occur on Kaumualii Highway (see Appendix C). The number of vehicle incidents on Kaumualii Highway between the zero and 11 km (7 mile) marker, roughly

the segment between Lihue and Maluhia Road, ranged from a low of 13 to a high of 32 in the five years from 1995 to 1999. As a comparison, the number of vehicle incidents on Kuhio Highway between the zero (intersection with Kaumualii Highway) and 16 km (10 mile) marker ranged from a low of 300 to a high of 333 during the same five years. Based on these incident statistics, Kaumualii Highway appears to be a relatively safe highway despite its high volumes, undivided configuration and deficient sight distances.

3.4.2 Drainage

Stormwater sheet flows off of the roadway and onto adjacent areas. To prevent ponding on and along the roadway, drainage structures pass under Kaumualii Highway at several locations to convey stormwater downslope, from the north (mauka) side to the south (makai) side of the highway. Stormwater on the bridges and culverts is collected in drainage inlets and discharged into the streams and irrigation ditches.

3.4.3 Utilities

The right-of-way of Kaumualii Highway is used for overhead electrical and telephone lines. Water transmission lines are also within the right-of-way from Lihue to just west of Puhi. The County sewer system in Lihue does not extend into or along Kaumualii Highway. The wastewater system for Puhi is owned and operated by Grove Farm, and is located south (makai) of Kaumualii Highway. Kauai Community College operates its own wastewater treatment system. Treated wastewater from the College is discharged via an existing 20 cm (8-inch) sewer line that crosses Kaumualii Highway to Klussman Reservoir.

3.5 CLIMATE AND AIR QUALITY

3.5.1 Local Meteorology

The climate of Hawaii is relatively moderate throughout most of the State, although some differences in certain meteorological parameters may occur from one region to another. Most of these differences are caused by the islands' mountainous topography.

Hawaii lies well within the belt of northeasterly trade winds generated by the semi-permanent Pacific high pressure cell to the north and east of the islands. Long-term wind data collected at Lihue Airport, which is located about 6 km (4 miles) to the east of the project area, indicates that the northeast wind direction prevails throughout the year with a mean annual wind speed of 20 km/h (12.3 mph). Winds from the south are infrequent, occurring only a few days during the year and mostly in winter in association with Kona storms. Kauai has equable temperatures from day to day and season to season, with marked variation in rainfall from the wet to the dry season and from place to place.

At Lihue Airport, average annual daily minimum and maximum temperatures are 20 C (68°F) and 27 C (81°F), respectively. The extreme minimum temperature on record is 10 C (50°F), and the extreme maximum is 32 C (90°F).

Rainfall on Kauai is highly variable depending on elevation and location with respect to the trade winds. The Lihue area has a moderately wet climate. Normal annual rainfall at Lihue Airport is about 108 cm (43 inches). Three-fourths of this total on average occurs from October to April. Widespread rainstorms, which account for much of the precipitation, occur most frequently during this period.

3.5.2 Ambient Air Quality Standards

As required by the Clean Air Act, National Ambient Air Quality Standards (AAQS) were established by the U.S. Environmental Protection Agency (USEPA) 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. Current standards for ozone and PM_{2.5} were established in September 1997. The State of Hawaii has also established its own standards for these pollutants. Both the National and State AAQS are listed in Table 3-4. The State AAQS are considerably more stringent than the National AAQS for certain pollutants.

3.5.3 Attainment Status of Study Area

Section 107 of the 1977 Clean Air Act Amendments requires the USEPA to publish a list of geographic areas that are not in compliance with the National AAQS, and these areas called

non-attainment areas. Areas that have insufficient data to make a determination are unclassified, and are treated as attainment areas until proven otherwise. The designation of an area is made on a pollutant-by-pollutant basis.

The State of Hawaii is designated as an attainment area for all of the applicable pollutants.

**Table 3-4
National and State Ambient Air Quality Standards**

Pollutant	Standard		
	Hawaii State	Federal Primary	Federal Secondary
Carbon Monoxide (CO)			
1 Hour	10 mg/m ³ (9 ppm)	40 mg/m ³ (35 ppm)	40 mg/m ³ (35 ppm)
8 Hour	5 mg/m ³ (4.5 ppm)	10 mg/m ³ (9 ppm)	10 mg/m ³ (9 ppm)
Nitrogen Dioxide (NO₂)			
Annual Arithmetic Mean	70 ug/m ³	100 ug/m ³ (0.053 ppm)	100 ug/m ³ (0.053 ppm)
Particulate Matter < 10 micrometers (PM₁₀)			
24 Hour	150 ug/m ³	150 ug/m ³	150 ug/m ³
Annual Arithmetic Mean	50 ug/m ³	50 ug/m ³	50 ug/m ³
Particulate Matter < 2.5 micrometers (PM_{2.5})			
24 Hour	--	65 ug/m ³	65 ug/m ³
Annual Arithmetic Mean	--	15 ug/m ³	15 ug/m ³
Ozone (O₃)			
1 Hour	100 ug/m ³	235 ug/m ³ (0.12 ppm)	235 ug/m ³ (0.12 ppm)
8 Hour	--	157 ug/m ³ (0.08 ppm)	157 ug/m ³ (0.08 ppm)
Sulfur Dioxide (SO₂)			
3 Hour	1300 ug/m ³	--	1300 ug/m ³ (0.5 ppm)
24 Hour	365 ug/m ³	365 ug/m ³ (0.14 ppm)	--
Annual Arithmetic Mean	80 ug/m ³	80 ug/m ³ (0.03 ppm)	--
Lead (Pb)			
Quarterly Average	1.5 ug/m ³	1.5 ug/m ³	1.5 ug/m ³

Source: State of Hawaii, Department of Health, Clean Air Branch.
USEPA National AAQS, Updated July 1997.

3.5.4 Present Air Quality

The present air quality in the project area is mostly affected by air pollutants from vehicular, industrial, natural and/or agricultural sources. Table 3-5 presents an air pollutant emission summary for the island of Kauai for calendar year 1993. The emission rates shown on this table pertain to manmade emissions only, i.e., emissions from natural sources are not included. Much of the PM emissions on Kauai originate from area sources, such as agricultural activities. SO_x are emitted almost exclusively from point sources such as power plants and other fuel-

burning industries. NO_x emissions emanate predominantly from area sources (mostly motor vehicle traffic), but industrial point sources also contribute a substantial share. The majority of CO emissions occur from area sources (motor vehicle traffic), while hydrocarbons are emitted mainly from point sources.

**Table 3-5
Air Pollution Emissions Inventory for the Island of Kauai, 1993**

Air Pollutant	Point Sources (tons/year)	Area Sources (tons/year)	Total (tons/year)
Particulate	614	4,817	5,431
Sulfur Oxides	703	nil	703
Nitrogen Oxides	4,072	7,054	11,126
Carbon Monoxide	2,315	11,974	14,289
Hydrocarbons	859	224	1,083

Source: J.L. Shoemaker & Associates, Inc for the State of Hawaii Department of Health, Final Report, Review, Revise and Update of the Hawaii Emissions Inventory Systems for the State of Hawaii, 1996

The State of Hawaii Department of Health (SDOH) operates a network of air quality monitoring stations at various locations around the State. Each station, however, typically does not monitor the full complement of air quality parameters. The SDOH monitoring station closest to the project area is located at Lihue. PM₁₀ is the only pollutant monitored at this location, a pollutant not relevant to the proposed project.

Although very little ambient air quality data are available to characterize existing conditions, due to the relatively small number of emission sources in the project area, it is likely that all National and State AAQS are currently being met except perhaps for some areas near agricultural sources or locations affected by traffic congestion. In summary, the air quality in the project area is relatively good.

3.6 NOISE

3.6.1 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 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.

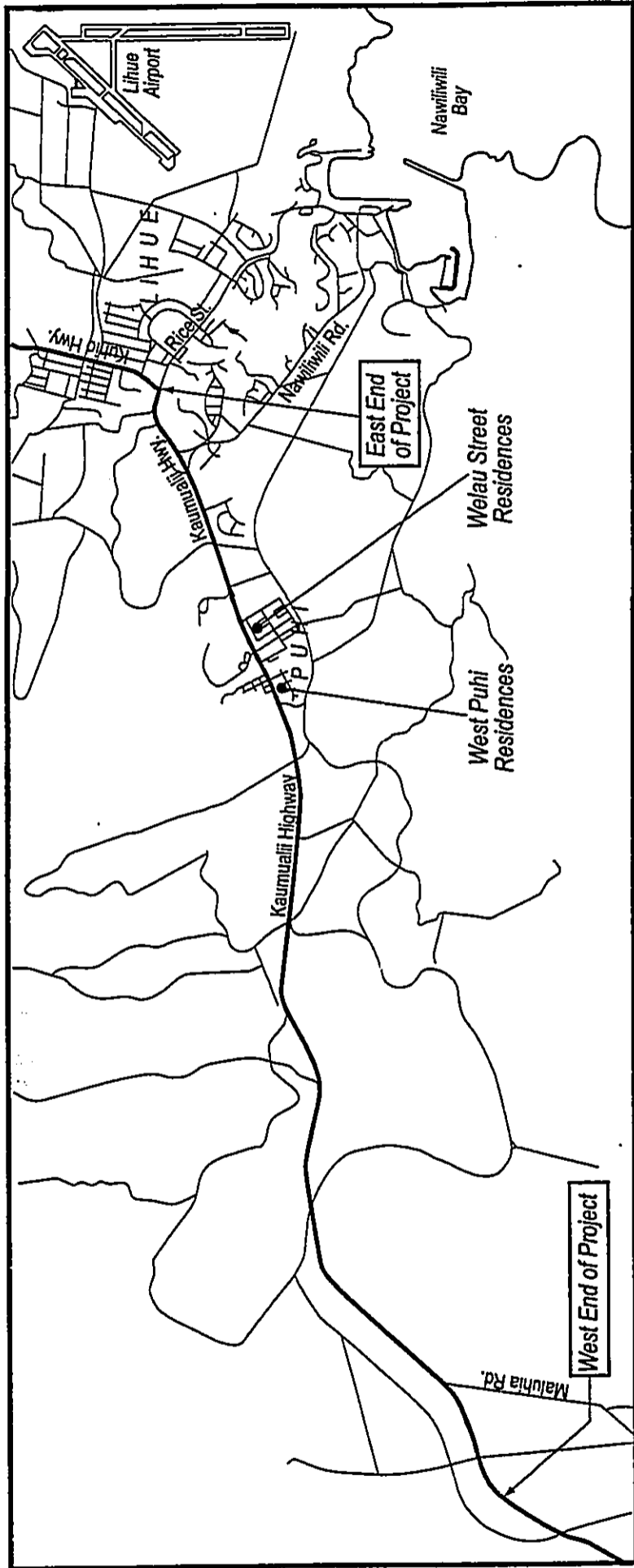
Since dBA describes a noise level at just one moment, and very few noises are constant, ways of describing noise over extended periods are needed. One way is describing fluctuating noise heard over a period as if it were a steady, unchanging sound. This type of an average is called the equivalent sound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

3.6.2 Noise Abatement Criteria

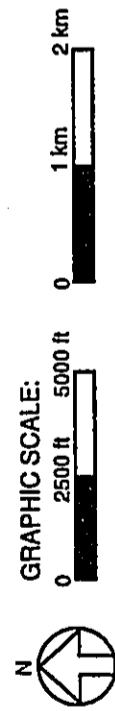
The Federal Highway Administration (FHWA) has developed Noise Abatement Criteria (NAC), which were adopted by the State of Hawaii (see Table 3-6). According to the SDOT's Noise Analysis and Abatement Policy (Noise Policy), a noise impact would occur when predicted traffic noise levels approach or exceed the NAC, or when predicted traffic noise levels substantially exceed the existing noise levels.

3.6.3 Measurements and Existing Conditions

Field measurements of existing noise levels were taken on February 1 and 2, 2000 at two sites, as shown on Figure 3-7. These sites are located in Puhi, and are considered to be noise sensitive receptors in accordance with the NAC (Activity Category B). The first receptor is a group of ten houses along Welau Street, which is parallel to Kaunualii Highway. These houses are set-back approximately 70 m (230 feet) from the highway. The second receptor is a small group of single-family and low-density multi-family residences on the west side of Anonui Street



Source: Parsons Brinckerhoff Quade & Douglas, Inc.



Noise Monitoring Locations
 IMPROVEMENTS TO KAUMUALII HIGHWAY
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 FIGURE 3-7

near Kaunualii Highway. The house nearest to Kaunualii Highway is set-back approximately 25 m (80 feet). The results of the field measurements at both receptor sites are provided on Table 3-7. It should be noted that although the measured noise levels indicated on Table 3-7 exceed the NAC for Activity Category B, the monitoring was not done from the residences, the locations at which the NAC apply.

**Table 3-6
FHWA Noise Abatement Criteria (NAC)**

Activity Category	L_{eq}(h) 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.

Notes: Interior noise level standards apply to:

1. Indoor activities for those parcels where no exterior noise sensitive land use or activities have been identified; and
2. Situations where the exterior activities are either remote from the highway or shielded so that while the exterior activities remain undisturbed, noise nevertheless affects interior activities.

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

**Table 3-7
Existing Noise Measurements**

Sensitive Receptor ¹	Start Time/Date	Measured L _{eq}	Duration of Measurement
Welau Street Residences	7:00 a.m./Feb. 2	69	60 minutes
	4:00 p.m./Feb. 1	70	60 minutes
West Puhi Residences	7:00 a.m./Feb. 2	69	60 minutes
	4:00 p.m./Feb. 1	68	60 minutes

Notes: ¹ Monitoring for both sites was conducted approximately 8 m (25 feet) from the existing Kaunualii Highway right-of-way.

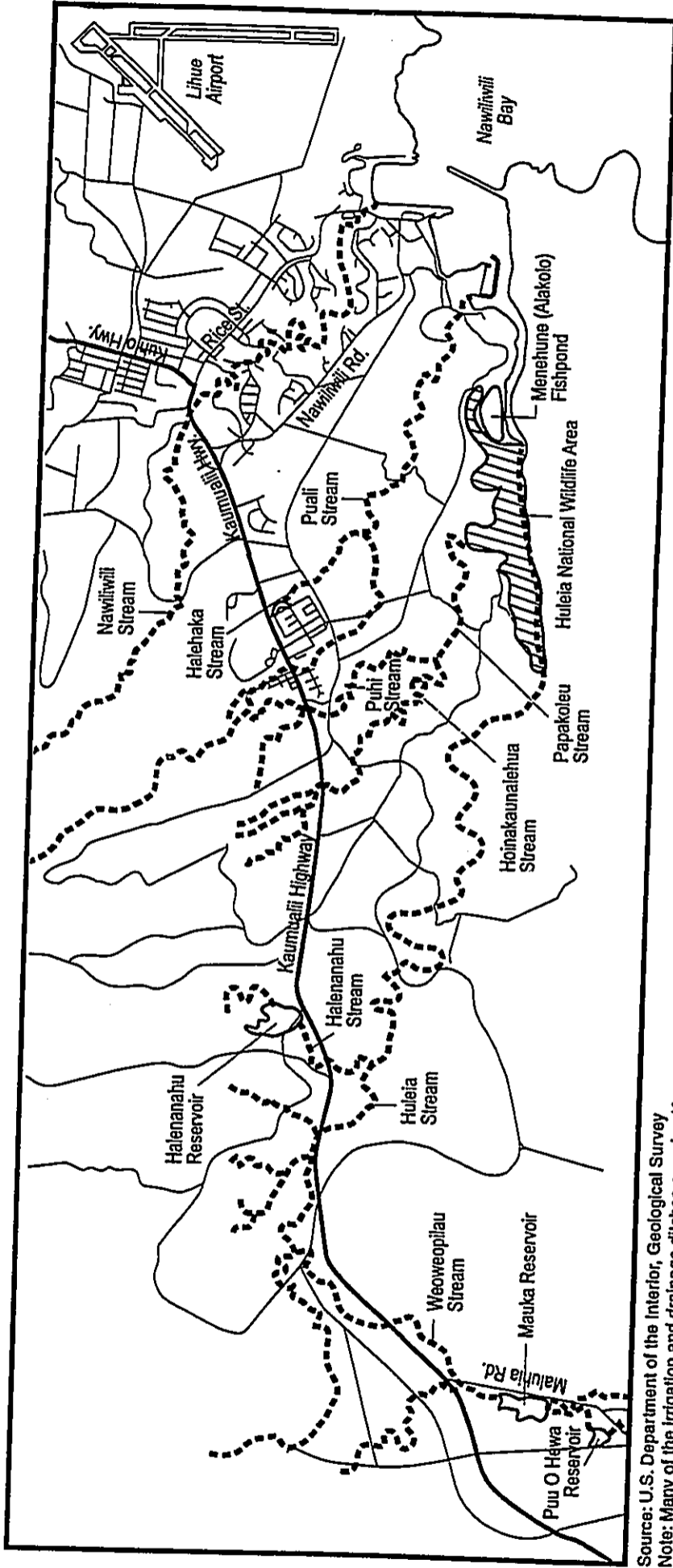
Source: D.L. Adams Associates, Ltd., February 2000.

3.7 WATER RESOURCES

3.7.1 Surface Waters

Several streams and other surface water bodies cross Kaunualii Highway. The majority of these are drainage and irrigation ditches associated with present and past agricultural activities. These waterways cross Kaunualii Highway either in culverts or pipes. Figure 3-8 displays the natural streams that cross Kaunualii Highway within the project limits. Those that are part of the natural system are considered to be waters of the U.S., and subject to regulation under Section 404 of the Clean Water Act. Although most of these streams are perennial, none are navigable. Also, some of the water in these streams is currently or has been diverted into ditches for irrigation.

In Lihue, Nawiliwili Stream crosses Kaunualii Highway beneath the 120 m (390 ft) long Lihue Mill Bridge, which is adjacent to Lihue Mill. In Puhi, a tributary of Puali Stream intersects Kaunualii Highway adjacent to the Grove Farm office building through a parabolic culvert. This tributary connects two reservoirs, but appears to be part of a natural stream system. To the west of Puhi, Papakolea Stream is fed by two tributaries (Hainakaunalehua and Puhi) that intersect Kaunualii Highway. Puhi Stream has two forks that cross the highway. The western fork is well drained due to a large 3.7 m by 3.7 m (12 feet by 12 feet) culvert. The east fork, which is associated with one of the wetlands described in Section 3.7.3, is not well drained, probably due to its small culvert beneath the highway.



Source: U.S. Department of the Interior, Geological Survey
 Note: Many of the irrigation and drainage ditches crossing Kaunua Highway are not shown

LEGEND

..... Streams and Major Irrigation Ditches



GRAPHIC SCALE:
 0 2500 ft 5000 ft

0 1 km 2 km

**Surface Water Resources
 IMPROVEMENTS TO KAUNUA HIGHWAY**
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FIGURE 3-8

Huleia Stream crosses Kaumualii Highway approximately 5 km (3 miles) west of Puhi beneath the 130 m (430 ft) long Huleia Bridge, and is fed by three tributaries upstream (north (mauka)) of the highway. Downstream (south (makai)) from the highway, Huleia Stream is fed by a fourth tributary, Halenanahu Stream, which crosses the highway via double box culverts. Water flow in Halenanahu Stream is controlled at Halenanahu Reservoir, located approximately 100 m (330 feet) north of the highway (see Figure 3-8). The streams from Nawiliwili to Huleia empty into Nawiliwili Bay via the lower reach of Huleia River, which passes through the Huleia National Wildlife Refuge (NWR), which is one of three NWRs on Kauai (see Figure 3-8). Huleia NWR is approximately 98 ha (241 acres) in size, and is adjacent to Menehune (Alakoko) Fishpond, a registered National Historic Landmark. Thirty-one species of birds, including the endangered waterbirds described in Section 3.8.3, can be found in Huleia NWR. Habitat for the endangered Hawaiian Hoary Bat (*Lasiurus cinereus semotus*) may also be in this area (see Section 3.8.3).

Just west of Knudsen Gap, Weoweopilau Stream crosses the highway through a box culvert. Unlike other streams in the project area, Weoweopilau flows south (makai) to north (mauka) and eventually empties into Huleia Stream. Irrigation ditches located near Maluhia Road cross Kaumualii Highway via box culverts and flow directly to Mauka Reservoir, which is located near Maluhia Road approximately 400 m (1300 feet) south of the highway (see Figure 3-8). A pond, approximately 500 m² (5400 square feet) in size and estimated to be 0.9 to 1.2 m (3 to 4 feet) deep, is located adjacent to the irrigation ditch nearest to Maluhia Road, and is only a few meters from Kaumualii Highway. A berm prevents water from the irrigation ditch from flowing into the pond. The water source of this pond could not be located, but is most likely from the nearby ditch. Since the pond appears to be man-made (i.e., if not for the ditch, which is man-made, the pond would not be in existence), and is not considered to be part of a wetland (see Section 3.7.3), it is not considered to be waters of the U.S.

According to a biological assessment prepared for this project (see Appendix H), the streams described above are degraded both physically and biologically. With the exception of Huleia Stream, all the streams had little or no water flowing in their natural channels, and exhibited excessive sedimentation and bank erosion. Most were also so overgrown with invasive vegetation that the stream channels were not visible from the highway. Huleia Stream has the highest quality among all the streams, yet was rated as exhibiting "very poor" biotic conditions.

3.7.2 Groundwater

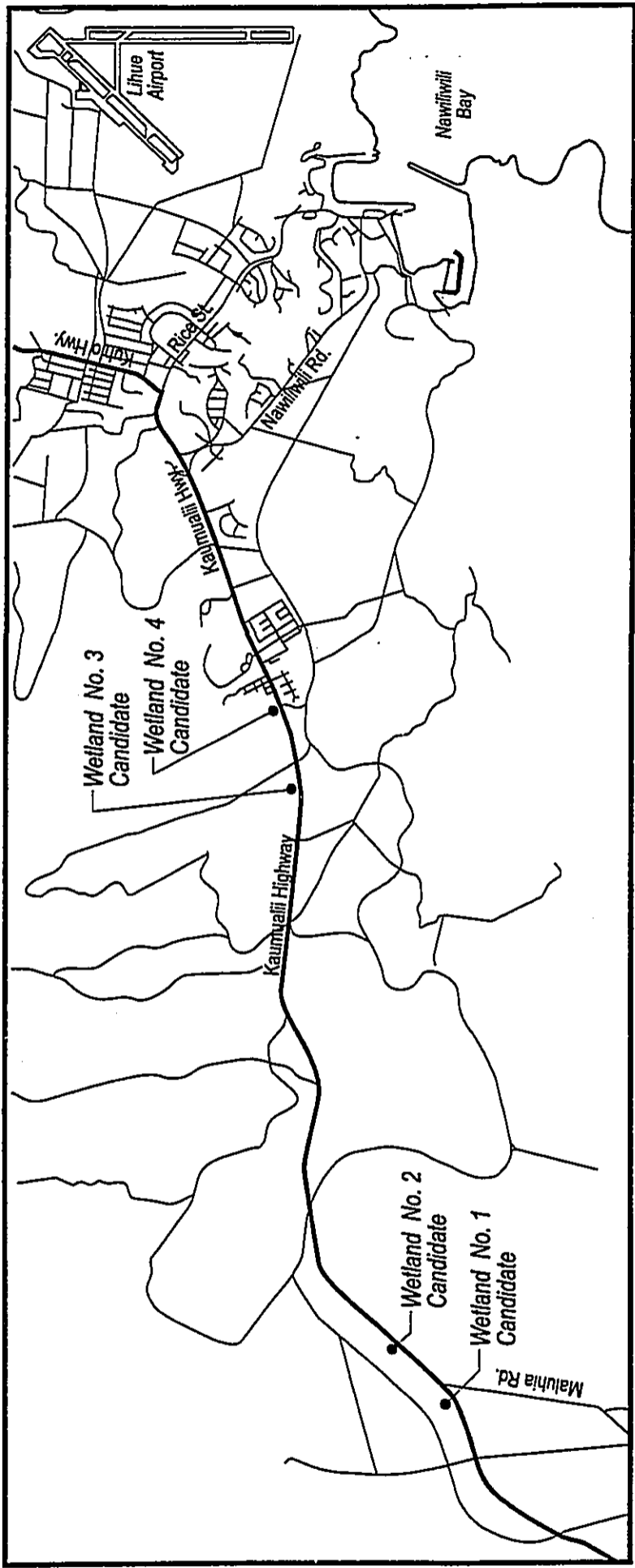
There is no USEPA-designated principal or sole-source aquifer in the project area. Several borings taken within the project limits encountered groundwater at about 1.4 m (4.5 ft) to 8.6 m (28.3 ft) below the existing ground surface. Only those borings near streams encountered groundwater. The State Department of Land and Natural Resources, Commission on Water Resource Management stated in a letter dated September 30, 1998 (see Appendix A) that the Haupū Range may contain dike structures.

3.7.3 Wetlands

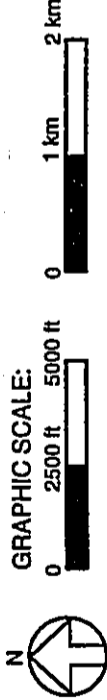
A preliminary assessment of the study area identified four potential wetlands (see Figure 3-9). According to the U.S. Army Corps of Engineers (USACE) wetland delineation manual, a wetland is "those areas that are inundated or saturated by surface or groundwater at a frequency and duration to support, and that under natural circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." The wetland definition was codified by USACE and the USEPA as exhibiting hydric soil, water and vegetation indicators.

The USACE Civil Works Branch conducted field surveys to determine whether those potential wetlands shown on Figure 3-9 are in fact wetlands per federal regulations (see Appendix F). The survey indicated that wetlands #1 and #3 (see Figure 3-9) are not wetlands because they fail to meet all of the regulatory parameters needed to be considered a wetland. (In the following discussion these areas will be referred to as wetlands #1 and #3 despite these areas not being wetlands.) Wetland #1, which contains the pond described in Section 3.7.1, lacks hydric soils, is dominated by upland vegetation, and has infrequent flow. It is, therefore, exempt from regulation under Section 404 of the Clean Water Act. USACE also found no evidence of wetland indicators at the wetland #3 area, which is at or near Hainakaunalehua Stream. The stream is at the bottom of a very steep 12 m (40 feet) gully with mango and java plum trees at the top edge.

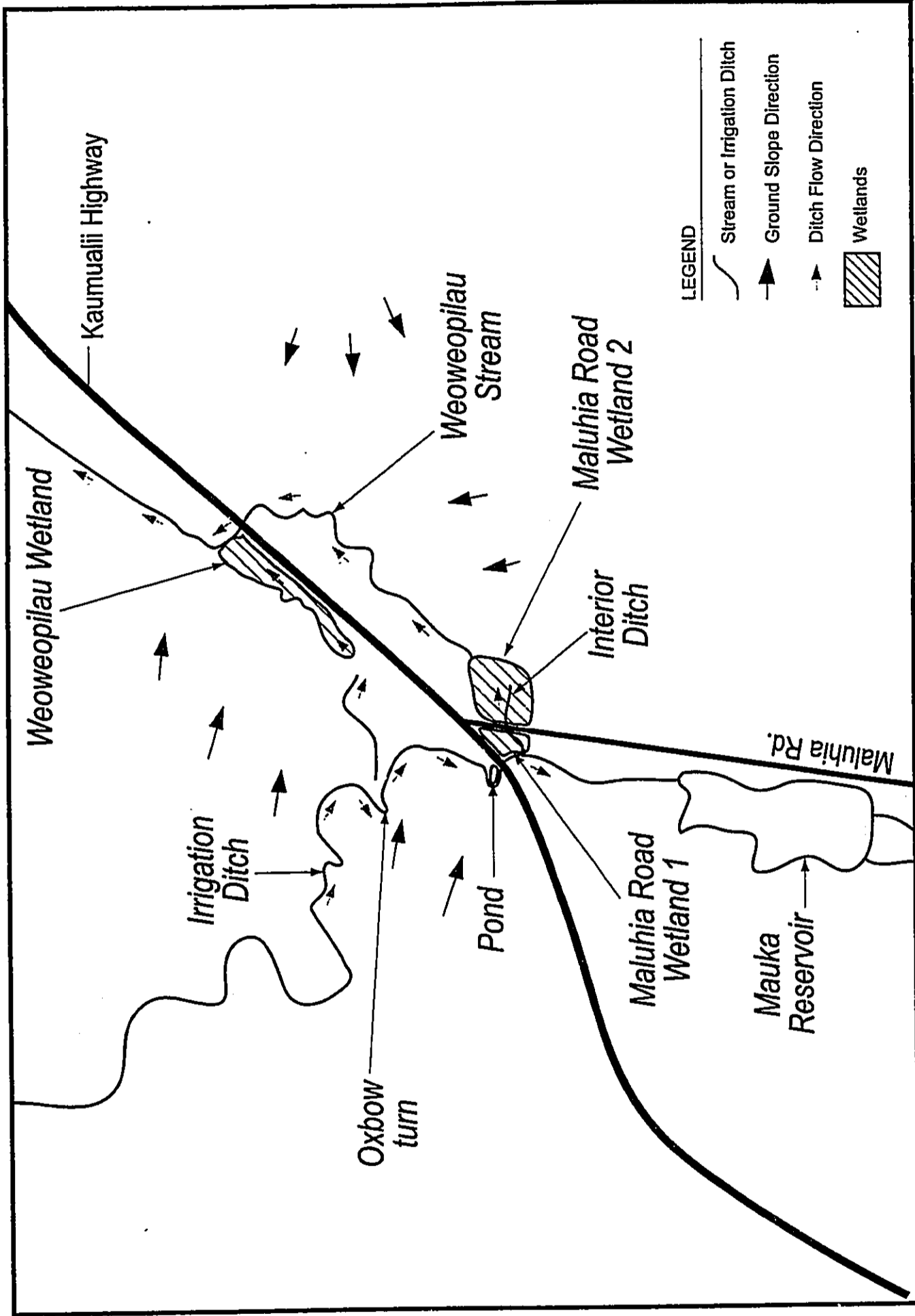
Although USACE Civil Works Branch did not consider wetland #1 a true wetland, they did identify two wetlands on the south (makai) side of Kaumualii Highway (to be called Maluhia Road Wetlands 1 and 2 in this Final EA) (see Figure 3-10). A water control structure in the



Source: ParEn, Inc.



Suspected Wetland Areas
IMPROVEMENTS TO KAUMUALII HIGHWAY
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FIGURE 3-9



Source: U.S. Army Corps of Engineers
 N
 GRAPHIC SCALE:
 0 500 ft 1000 ft
 0 250 m 500 m

Drainage Patterns near Maluhia Road Wetlands and Weoweopilau Wetland
 IMPROVEMENTS TO KAUNUALII HIGHWAY
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 FIGURE 3-10

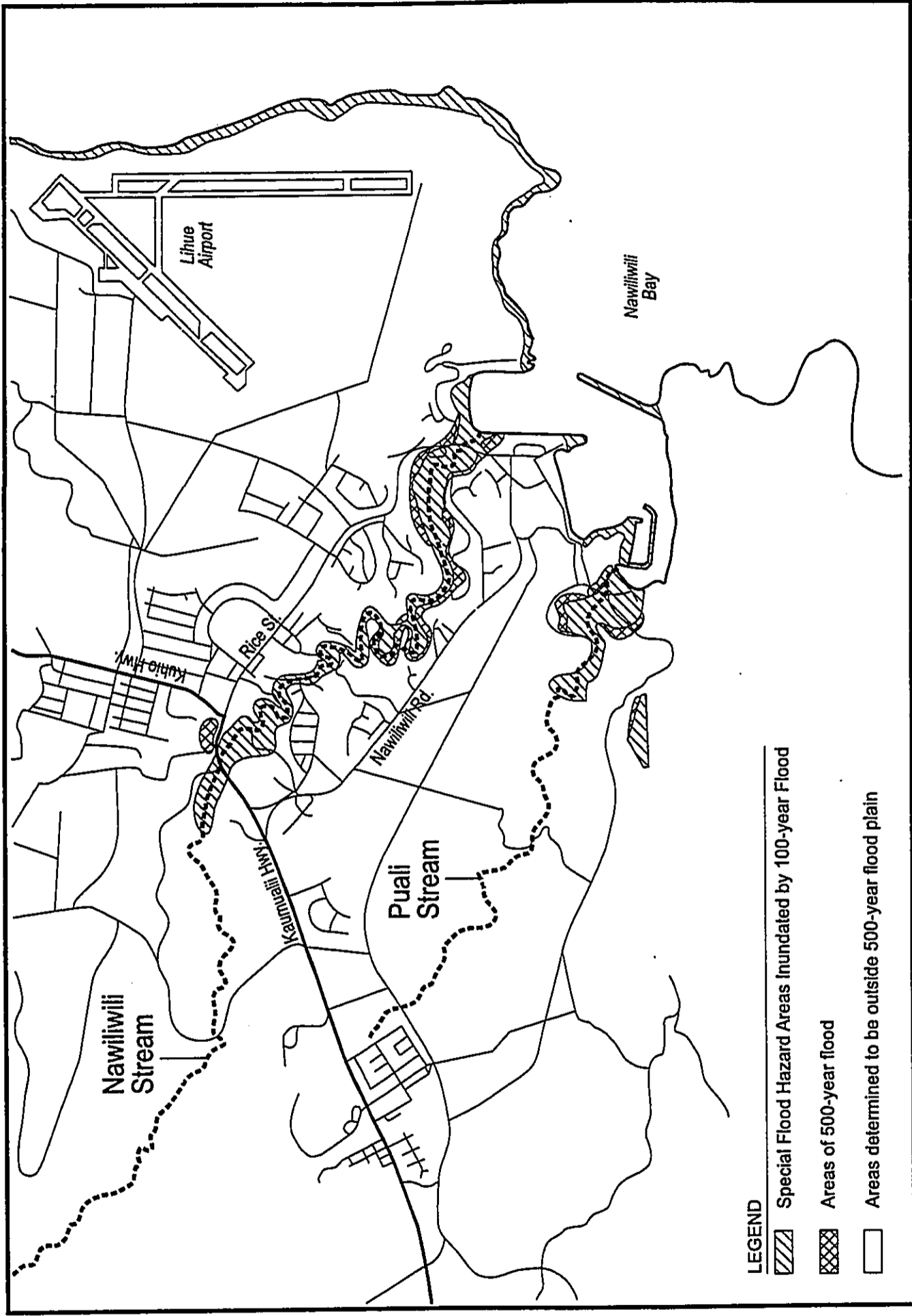
irrigation ditch on the western side of Maluhia Road Wetland 1 shunts water through an interior ditch in the wetland, which eventually flows to Maluhia Road Wetland 2. The interior ditch is the low part of the wetland, and the USACE Civil Works Branch was not able to ascertain the hydrology source for the wetland outside the interior ditch. Maluhia Road Wetlands 1 and 2 exhibit all three hydric parameters and are considered jurisdictional wetlands.

The location of wetland #2 (to be called Weoweopilau Wetland in this Final EA) is shown on Figure 3-10. Weoweopilau Wetland is located in a ravine that gets wider from west to east, eventually blending into Weoweopilau Stream. The hydrology for this wetland is provided by sheet flow since the topography in this area slopes from Kahili Mountain Road towards the highway and Weoweopilau Stream. Groundwater and surface runoff trickles in from the top of the ravine, on the west side, creating a waterfall down the steep slope. The functions and values of this wetland include nutrient uptake, soil stabilization, sediment trapping, ground water recharge, flood storage and habitat for nonnative aquatic species (swordtails, guppies, mosquito fish and bullfrogs).

The location of wetland #4 (to be called Puhi Wetland in this Final EA) is in the east fork of Puhi Stream. The east fork of Puhi Stream is gently flowing, exiting under the highway through a small culvert. This culvert appears to be inadequate during high flows, which probably contributes to the wetland conditions. The functions and values of Puhi Wetland is the same as Weoweopilau Wetland: nutrient uptake, soil stabilization, sediment trapping, ground water recharge, flood storage and habitat for nonnative aquatic species.

3.7.4 Floodplains

According to Flood Insurance Rate Maps (FIRM), the majority of the project area is contained within Zone X, indicating that it is outside the 500-year floodplain. A 100-year floodplain is located along Nawiliwili Stream (see Figure 3-11). Kaumualii Highway crosses this floodplain via Lihue Mill Bridge. Therefore, the highway itself is not within this floodplain. To the east of the Nawiliwili floodplain and north (mauka) of Kaumualii Highway is a small 500-year floodplain (see Figure 3-11).



Floodplains
IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
FIGURE 3-11

3.8 ECOSYSTEMS

3.8.1 Flora

The vegetation along the highway may be classified into three major groupings: 1) developed and landscaped; 2) agricultural; and 3) undeveloped non-agricultural lands.

The area from Lihue to Puhī falls under the first two groupings, as grass lawns and low-lying weeds are typically found in landscaped areas associated with urban development. These developments include Kukui Grove Shopping Center, Kilohana, Kauai Community College, and other commercial and residential developments in Puhī. On the north (mauka) side of Kaumualii Highway in the vicinity of Kukui Grove Shopping Center are sugarcane fields associated with Lihue Plantation.

West of Puhī is former agricultural land that is currently uncultivated, and dominated by native overgrown grasses and shrubs.

Since Kaumualii Highway traverses several streams and gullies (see Section 3.7.1) with steep terrain, the vegetation in these areas is generally thick with shrubs and trees. Because of the terrain in these areas, sugarcane and other crops were never grown there.

The County of Kauai, in keeping the concept of Kauai as the "Garden Isle", has established by ordinance the designation of Exceptional Trees in the County. According to this ordinance, Exceptional Trees are:

... a tree or group of trees with historical or cultural value, or which by reason of its age, rarity, location, size, aesthetic quality or endemic status has been designated by the County Council to be preserved and so earmarked on maps of Kauai to be kept on file in the County Planning Department and the Department of Public Works, Building Division. (Article 5, Sec. 22-5.2)

The Maluhia Road "tree tunnel" is identified in the County ordinance on Exceptional Trees. The ordinance describes the location of this resource as swamp mahogany (*Eucalyptus robusta*) along both sides of Maluhia Road extending 1.2 km (0.75 miles) southward from Kaumualii Highway.

3.8.2 Fauna

An avifauna and mammal survey was conducted for this project. The survey noted the presence of feral cats and pigs (from tracks). Other terrestrial faunal species likely to be in the study area are introduced species that are common throughout the Hawaiian Islands, such as rats, mice, pigs and dogs.

The avifauna survey did not observe any native waterbirds, even though the U.S. Fish and Wildlife Service (USFWS) noted the possible presence of the endangered Hawaiian duck (*Anas wyvilliana*), Hawaiian stilt (*Himantopus mexicanus*), Hawaiian coot (*Fulica alai*) and Hawaiian moorhen (*Gallinula chloropus*) (see Section 3.8.3). The avifauna survey did record 15 non-native (introduced) species (see Table 3-8), most of which were expected. None of these species are threatened or endangered. The only migratory shorebird observed was the Pacific Golden-Plover (*Pluvialis fulva*), which were observed foraging near Kauai Community College. The Wandering Tattler (*Heteroscelus incanus*) and Ruddy Turnstone (*Arenaria interpres*) are known to visit the area, but none were observed.

**Table 3-8
Introduced Birds Sighted During Survey Along Kaunualii Highway**

Common Name	Scientific Name
Red Junglefowl	<i>Gallus gallus</i>
Cattle Egret	<i>Bubulcus ibis</i>
Spotted Dove	<i>Streptopelia chinensis</i>
Zebra Dove	<i>Geopelia striata</i>
Japanese Bushwarbler	<i>Cettia diphone</i>
Hwamei	<i>Garrulax canorus</i>
Greater Necklaced Laughing-thrush	<i>Garrulax pectoralis</i>
Common Myna	<i>Acridotheres tristis</i>
Western Meadowlark	<i>Sturnella neglecta</i>
Japanese White-eye	<i>Zosterops japonicus</i>
Northern Cardinal	<i>Cardinalis cardinalis</i>
House Finch	<i>Carpodacus mexicanus</i>
Chestnut Mannikin	<i>Lonchura malacca</i>
Nutmeg Mannikin	<i>Lonchura punctulata</i>
House Sparrow	<i>Passer domesticus</i>

Source: Phillip L. Bruner, Avifaunal and Feral Mammal Survey for Kaunualii Highway Improvements – MM 0.0 to 7.5, Kauai, April 24, 1998.

As described in Section 3.7.1, the streams crossing Kaumualii Highway are severely degraded. Therefore, an aquatic species survey found no native species and very few alien species in the sections of the streams near Kaumualii Highway. Native macrofaunal species were only found in stream segments several miles downstream from Kaumualii Highway, which suggests that some limited, low-level recruitment is occurring despite severely degraded conditions. The native o'opu nakea (*Awaous guamensis*) and o'opu-napili (*Sicyopterus stimpsoni*) were observed in Puali Stream, but in extremely low numbers. The survey noted that the reason o'opu nakea were not observed in the segment of Huleia Stream near Kaumualii Highway is presence of the predatory smallmouth bass (*Micropterus dolomieu*).

3.8.3 Threatened and Endangered Species

Consultation with the USFWS was initiated per requirements of the federal Endangered Species Act of 1973 (16 U.S.C. 1531-1543). Copies of correspondence with USFWS are located in Appendix B. The State of Hawaii Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) was also contacted for information on the possible presence of threatened and endangered species (see Appendix B).

"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 Service has evidence of vulnerability, but there are not enough data to support formal proposal as an endangered or threatened species.

In a letter dated September 23, 1998 and reconfirmed in a letter dated January 31, 2000 (see Appendix B), the USFWS stated that the endangered waterbirds Hawaiian duck (*Anas wyvilliana*), Hawaiian stilt (*Himantopus mexicanus*), Hawaiian coot (*Fulica alai*), and Hawaiian moorhen (*Gallinula chloropus*) may occur in any of the wetlands and stream crossings in the project area. USFWS also noted that migrating seabirds, such as the endangered Hawaiian dark-rumped petrel (*Pterodroma phaeopygia sandwichensis*) and the threatened Newell's shearwater (*Puffinus newelli*), may be affected by highway lighting. DOFAW also noted the problem of the Newell's shearwater being attracted to highway lighting.

In addition to confirming the possible presence of the above species, the USFWS, in the January 31, 2000 letter, stated that the endangered Hawaiian Hoary Bat (*Lasiurus cinereus semotus*) may also be in the project area. The biologist who conducted the avifaunal and mammal survey also noted that the Hawaiian Hoary Bat is fairly common on Kauai.

The avifaunal and mammal survey conducted for this project did not identify any of the above species. However, it is possible that these species were not present in the project area at the time of the survey.

3.9 GEOLOGY, PHYSIOGRAPHY, SITE CONTAMINATION AND NATURAL HAZARDS

3.9.1 Physiography and Geological Setting

The island of Kauai consists of a single great shield volcano that is deeply eroded and partly veneered with much later volcanics. The shield volcano was built by the extrusion of lava of the Waimea Canyon Volcanic Series during the late Pliocene Epoch (about 2.25 million years ago). These lava flows are exposed near "Knudsen Gap" along the project alignment. Due to their age, these olivine basalts are usually mantled with residual and saprolite soils grading into weathered rock with increasing depth.

Following the cessation of the main volcano building event, there was renewed volcanic activity with the extrusion of the post-erosional Koloa Volcanic Series. Rocks of the Koloa Volcanic Series are generally characterized as thick flows of dense basalt extruded from groups of vents and are associated with pyroclastic materials that form low cinder cones at the vent. Rocks of the Koloa Volcanic Series cover most of the eastern half of Kauai, including the majority of the alignment. In general, the rocks have a mantle of residual and saprolitic soils grading to weathered basalt with depth.

The highway traverses several streams and many smaller drainageways (see Section 3.7.1) that contain Quaternary Period alluvial deposits. The areas near Weoweopilau, Huleia and Nawiliwili Streams contain extensive unconsolidated to moderately consolidated, non-calcareous alluvial material deposited by erosion of the Koloa Volcanic Series. Smaller drainageways and gullies have also deposited alluvial sediments in localized areas.

Agricultural, transportation, and commercial developments within the last century have refined the local topography to its present condition.

3.9.2 Hazardous Waste Sites

Present and historic land uses in the corridor could have produced site contamination. Most contaminated sites are or were associated with the use, transportation, or storage of hazardous materials. Site contamination could result from on-site land uses, or contaminants may have migrated from a nearby site to the project area. This section provides preliminary information on documented sources of hazardous materials or contamination near the project area that could affect property acquisition or construction associated with the project.

Twenty-four State, federal and private databases were searched for sites containing hazardous materials along the project area. The following sites were identified by the database search:

- 21 Registered Underground Storage Tanks (UST);
- 10 Leaking Underground Storage Tanks (LUST);
- 7 Resource Conservation and Recovery Information System (RCRIS) -- small-quantity generators (SQGs), which include sites that generate, transport, store, treat, and/or dispose of hazardous waste as defined by RCRA.
- 1 Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), which contains data on potentially hazardous waste sites reported to the USEPA by states, municipalities, private companies, etc..

The LUST, SQG and CERCLIS sites are all located in Lihue and Puhi.

3.9.3 Natural Hazards

Kauai has been the victim of two major hurricanes within the last 20 years (a hurricane is tropical cyclone (storm) with winds that exceed 118 km/h (73 mph)). Hurricane Iwa struck the island on November 23, 1982, and Hurricane Iniki struck the island on September 11, 1992. Property damage as a result of Hurricane Iniki totaled more than \$3 billion, and much of the economy was devastated as many hotels suffered major damage, causing some to close. Historically, Kauai is the most vulnerable to hurricanes and tropical storms (a tropical storm is a cyclone with sustained winds ranging between 63 km/h (39 mph) and 118 km/h (73 mph)) as

compared to the other major islands. Hurricane Dora crossed Kauai in 1959 and tropical storm Gill crossed the island in 1983.

In Hawaii, most earthquakes are linked to volcanic activity. Since only the island of Hawaii experiences volcanic activity, most earthquakes occur there. Therefore, it is unlikely that Kauai would experience a major or detectable (without the use of highly sensitive instruments) earthquake.

Tsunamis are usually generated when the ocean floor is deformed abruptly during an earthquake. Tsunami reaching Hawaii are generated by earthquakes occurring in such places as Chile, Japan, the Aleutian Islands, Alaska and Hawaii. Based on historical records, the areas most vulnerable to tsunamis are Hilo and the North shores of all the islands. The project area is not susceptible to tsunami.

3.10 HISTORIC AND ARCHAEOLOGICAL RESOURCES

This section documents activities to identify historic and archaeological resources in the project area in accordance with the requirements of the Code of Federal Regulations (CFR) pertaining to the Protection of Historic Properties (36 CFR 800) (known as Section 106).

3.10.1 Methodology

The methodology described in this section encompassed a good faith effort to identify historic properties in the project's area of potential effects (APE). An historic property is any district, site, building, structure, or object that is on or eligible for the National Register of Historic Places. The APE means the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character of historic properties, if any such properties exist.

Cultural Surveys Hawaii (CSH) conducted an archaeological and historical assessment of the Kaunualii Highway corridor within the project limits. An historic background survey was conducted, which included study of historic maps, archival documents, previous archaeological and historical studies of the project area. Fieldwork was also conducted to

inspect and assess historic properties identified through archival and document research, and to find potential new sites. A copy of CSH's assessment report can be found in Appendix I.

Following completion of the CSH assessment report, the following agencies and organizations were asked for assistance in identifying other historic properties that may not have been identified by CSH:

- State of Hawaii Department of Land and Natural Resources, Historic Preservation Division (SHPD);
- Office of Hawaiian Affairs (OHA);
- State of Hawaii Department of Hawaiian Home Lands;
- Historic Hawaii Foundation;
- Kauai Historic Preservation Review Commission (KHPRC);
- Kauai Hawaiian Civic Club (current address not valid; letter and report returned); and
- Kauai Historical Society.

Of the agencies and organizations contacted, only the SHPD, OHA and KHPRC responded to requests for information, or participated in consultation.

Consultation with SHPD consisted of correspondence (see Appendix B) and a meeting held on November 16, 1999. At this meeting, SHPD staff requested consultation with other parties in accordance with the regulations of Section 106. SHPD recommended that the project hold a second public information meeting in which potential project impacts to historic properties be discussed, and consultation with the KHPRC. The project complied with SHPD's recommendations.

The OHA responded to the request for information in a letter dated January 14, 2000 (see Appendix B). Although OHA did not identify additional historic properties, they did request that the CSH report be revised to include research on the Hawaiian occupation and use of lands from Koloa to Lihue beyond what is presented in the report. SDOT responded to OHA's request in a letter dated February 1, 2000 (see Appendix B).

SDOT met with the KHPRC on February 2, 2000 and provided a project briefing. KHPRC followed-up this meeting with a letter to SDOT dated February 4, 2000 (see Appendix B), which

identified additional historic properties in the APE (see Section 3.10.1.2). KHPRC also requested continuing consultation as the project proceeds.

SDOT conducted a public information meeting on January 13, 2000 to discuss among other issues, project impacts to historic properties. Many of the participants at this meeting were residents of German Hill (they were directly notified of this meeting), who were concerned about the re-alignment of Hoomana Road, the only access route to German Hill (see Section 2.1.2.3). No comments were generated regarding historic properties except that one German Hill resident noted that his house is considered historic.

Finally, at the request of the Office of Environmental Quality Control (see June 7, 2000 letter in Section 5.3.3) and the Office of Hawaiian Affairs, SDOT contracted the services of CSH to conduct a traditional cultural properties (TCP) assessment (see Appendix J). A TCP can be designated an historic property under Section 106.

3.10.2 Survey and Consultation Results

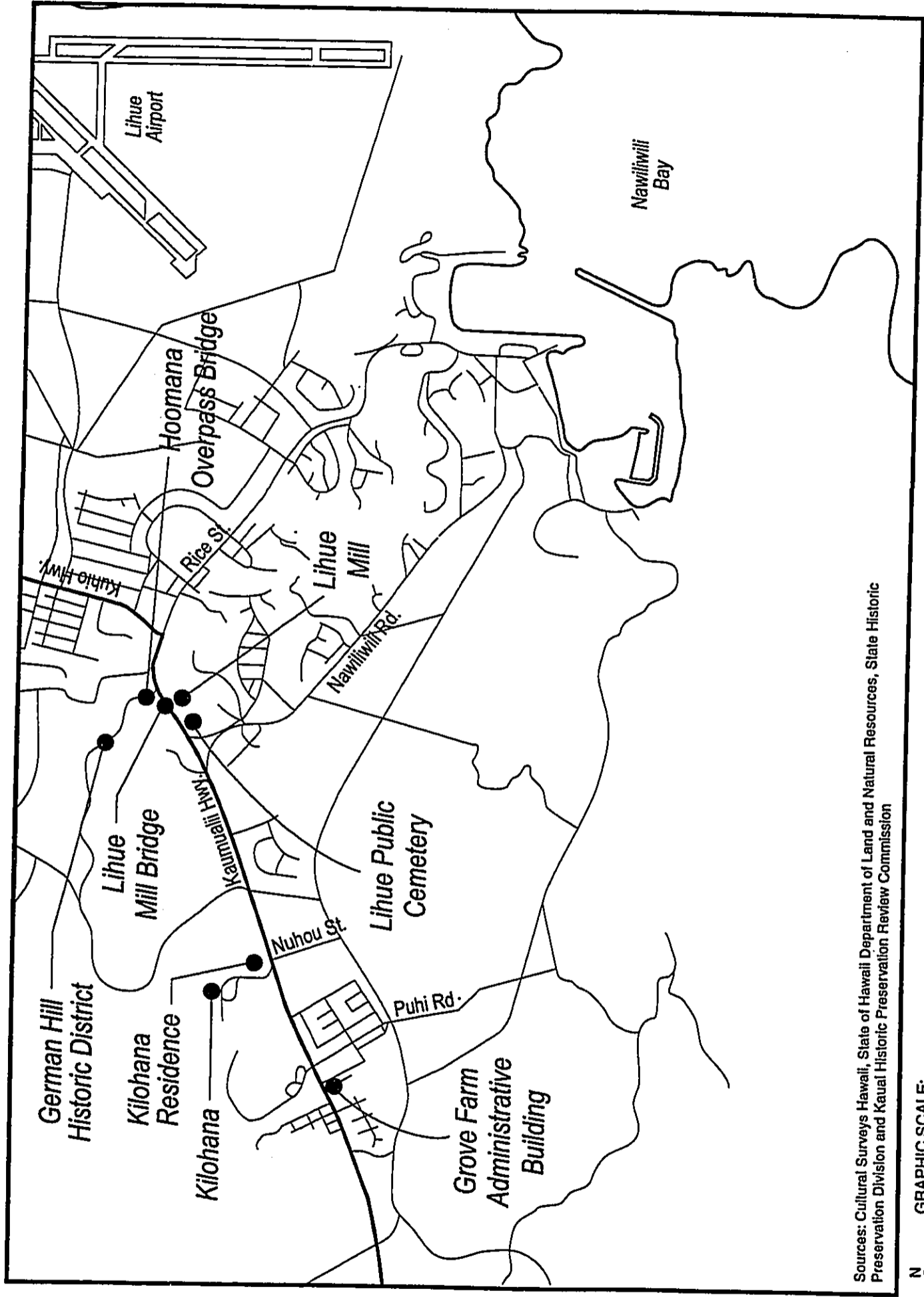
The CSH assessment identified the following historic properties within the APE (see Figure 3-12):

- Grove Farm administrative office building;
- Lihue Public Cemetery;
- Lihue Mill Bridge; and
- Hoomana Overpass Bridge.

Consultation activities with SHPD and KHPRC assisted in identifying four additional historic properties in the APE (see Figure 3-12):

- German Hill, a residential community on Hoomana Road, as a potential historic district;
- Kilohana;
- a residence adjacent to Kilohana; and
- Lihue Mill.

The KHPRC mentioned the possibility of old railroad crossings along the highway. Grove Farm Properties, Inc. provided information on track locations. However, all of the tracks at these



Sources: Cultural Surveys Hawaii, State of Hawaii Department of Land and Natural Resources, State Historic Preservation Division and Kaula Historic Preservation Review Commission

**Historic Properties in the Area of Potential Effect
IMPROVEMENTS TO KAUMUALII HIGHWAY**
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FIGURE 3-12

locations have either been removed or covered, and there is no visible evidence that any track is still in existence. The topographic survey conducted for this project did not identify any crossings.

The TCP assessment (see Appendix J) did not identify any cultural properties or practices in areas immediate adjacent to Kaunualii Highway, nor did it identify TCPs outside the highway corridor. The assessment noted that since the 19th century, the project area has been used extensively for large-scale agriculture, as well as for commercial and residential development. Individuals who were contacted for information about TCPs could not identify any in the immediate project area, nor within the ahupua'a. It is likely that past agricultural and other development have removed nearly all evidence of past cultural practices.

Brief descriptions of the historic properties in the APE are provided below.

Built in the mid-1930s, the Grove Farm office building is the only remaining structure of the plantation era of the late 1800s to latter half of the 20th century. The building still functions as this company's administrative headquarters. The exterior of the building appears not to have altered substantially since the 1930s.

Lihue Public Cemetery is located on a knoll overlooking Kaunualii Highway along the south (makai) side. The cemetery dates back to the 19th century. The cemetery was established by the Rice family, and became the resting place of members of prominent families that had settled on Kauai. William Harrison Rice, the manager of Lihue Plantation, was the first person buried in the cemetery in 1862.

Lihue Mill Bridge was constructed by the Territorial Highway Department in 1936, and provided grade-separation for a railroad alignment leading to Lihue Sugar Mill. According to the State of Hawaii Historic Bridge Inventory and Evaluation (May 1996), the bridge is only one of two steel stringer grade separations constructed in the State. The materials used for the bridge are original, and no reconstruction or major repair of the bridge has been conducted by SDOT. The historic significance of Lihue Mill Bridge is related to its rare steel stringer bridge design.

Hoomana Overpass Bridge was constructed in 1928 by Lihue Plantation over a railroad alignment between upslope fields and Lihue Sugar Mill. The railroad is no longer in existence,

but the bridge's original design and materials have not been altered since its construction. According to the Historic Bridge Inventory, the historic quality, or feeling, of this bridge is derived largely from its narrow width and short sight lines.

German Hill had its beginnings with the construction of Lihue Lutheran Church in 1883, which was meant to serve laborers from Hanover and Bremen, Germany. The houses of German Hill were built by Hackfeld and Company for its department heads, who were almost all Caucasian with German ancestry. The houses were built between 1920 and 1935. The 20 houses and church are still seen as a cohesive district. There have been modifications to individual buildings, but these changes have largely been in character to the district.

Kilohana is listed on the Hawaii Register of Historic Places, and is associated with the Wilcox family. The main building, designed by Mark Potter, a noted Hawaii architect, was constructed in the mid-1930s. It is a grand two-story house within an extensive lawn, and is notable for its angled porte-cochere and prominent roof forms. Its interior layout and finishes are also distinctive. The building's original use was residential, but is currently used for commercial purposes (tours, retail and restaurant). The residence adjacent to Kilohana was constructed in 1938, and is still in excellent condition.

Lihue Mill, located just south (makai) of Lihue Mill Bridge, occupies the same site as the original Lihue Plantation mill, which was built in 1849. The existing mill was built in the mid-1930s. The condition of the mill is fair, and many of its windows have been replaced or covered with corrugated metal.

3.11 VISUAL AND AESTHETIC RESOURCES

Identifying viewsheds is an important step to assess a project's potential visual affects. A viewshed can be described as all surface areas visible from an observer's viewpoint. The two notable viewsheds of the study area are the Haupu Range and the Maluhia Road Tree Tunnel.

Haupu Range

The Haupu Range is a line of relatively low, but majestic hills and peaks, which can be seen from both east and west sides of the range. Kaunualii Highway passes through the range via Knudsen Gap.

Maluhia Road Tree Tunnel

The visual experience of the Maluhia Road Tree Tunnel, which is two lines of swamp mahogany trees extending approximately 1.2 km (0.75 miles) south from Kaumualii Highway, is most mesmerizing while traveling on Maluhia Road. However, the tree tunnel does offer visual appeal while viewing it from the Kaumualii Highway / Maluhia Road intersection, and while traveling east-bound on Kaumualii Highway prior to reaching Maluhia Road. The Haupū Range somewhat blocks the visual experience of the tree tunnel while traveling westbound on Kaumualii Highway.

These viewsheds have visual quality according to FHWA's guidance document on visual impacts (Visual Impact Assessment For Highway Projects Publication No. FHWA-HI-88-054) because they have a high level of vividness (memorability of landscape), some intactness (extent to which the landscape is free from visual encroachment) and some unity (the degree to which the landscape join together to form a coherent, harmonious visual pattern).

The visual quality of Haupū Range is detracted by some structures depending on the perspective of the viewer.

CHAPTER FOUR

Environmental Consequences

CHAPTER 4 ENVIRONMENTAL CONSEQUENCES

This chapter describes the potential beneficial and adverse environmental and social impacts of the proposed improvements to Kaumualii Highway. Two alternatives are considered: the No Build Alternative and the Build Alternative. These alternatives are defined in Chapter Two. The No Build Alternative consists of the roadway improvements identified in the Kauai Long-Range Land Transportation Plan (May 1997) except for the proposed improvements for Kaumualii Highway. The Build Alternative consists of widening Kaumualii Highway from its current two-lane undivided configuration to a four-lane divided configuration from Kuhio Highway in Lihue to Maluhia Road. The west end of the project is extended approximately 1340 m (4400 ft) west of Maluhia Road to allow for a transitional section between the existing two-lane roadway and the future four-lane roadway. Hoomana Road will also be realigned to maintain access to a small neighborhood. The No Build Alternative is used as the basis of assessing the environmental impacts of the Build Alternative. Mitigation measures are also presented in this chapter if an adverse impact is anticipated.

4.1 IMPACTS ON LAND USE

4.1.1 Land Use Impacts

The Build Alternative will provide additional roadway capacity by widening the existing Kaumualii Highway. To widen the highway, areas of open space now used for urban landscaping and abandoned agricultural land will be converted to transportation use. Approximately 35 ha (86 acres) of open space will be converted to roadway right-of-way.

Urban development and long-term land use impacts can result when a highway project enhances access to vacant land, or increases transportation capacity beyond what is needed for planned growth. The assessment of land use impacts of this project hinges on whether increased roadway capacity on Kaumualii Highway will facilitate planned growth, or induce unplanned growth. The level of planned growth is assumed to be the land use growth pattern contained in the Kauai General Plan (see Section 3.1.3.2a).

The Kauai General Plan describes future mixed-use (residential and commercial) development between Puhi and Lihue, on the south (makai) side of Kaumualii Highway (see Section 3.1.2). This growth pattern is presented in the 1982 General Plan (the current plan), and in the Discussion Draft of the General Plan (December 1999). One primary purpose of the Build Alternative is to meet existing travel demand, which already overtaxes the capacity of the roadway. Another major purpose of the project is to address the level of future travel demand that will derive from the land use projections of growth between Puhi and Lihue. Therefore, by increasing roadway capacity, the Build Alternative will facilitate planned growth between Puhi and Lihue.

Under the No Build Alternative, commercial and residential development between Puhi and Lihue would still occur because County planning would encourage growth in this area. However, increasingly congested traffic conditions would result, as described in Section 4.4.1.1.

The Build Alternative will not induce unplanned growth in the fallow agricultural lands west of Puhi because such development will be inconsistent with the land use policies of the County. There is ample available land between Puhi and Lihue for the level of planned development forecast for the area.

In summary, the Build Alternative will have beneficial land use impacts by facilitating planned development. It will not provide excess capacity or encourage unplanned development.

4.1.2 Displacement and Relocation Impacts

As described in Section 2.1.2, the Build Alternative was designed to minimize displacements of existing land uses. However, the re-alignment of Hoomana Road (see Section 2.1.2) will require the relocation of one residence at the southern (makai) edge of the German Hill neighborhood. Since the No Build Alternative would not require the re-alignment of Hoomana Road, the residence would not be displaced under the No Build Alternative.

There will be no displacements along Kaumualii Highway under either alternative.

4.1.3 Relationship of the Proposed Action to Governmental Plans, Policies, and Controls

4.1.3.1 Hawaii State Plans and Controls

4.1.3.1a Hawaii State Plan

The Build Alternative will support the goals and objectives of the Hawaii State Plan (June 1991) dealing with economic, physical and natural environment, and transportation objectives and policies. The No Build Alternative would do little to support the goals and objectives of the Hawaii State Plan (June 1991) because it would not provide the transportation improvements needed to facilitate economic development for the region.

In accordance with the Plan's economic objectives and policies, the Build Alternative will facilitate commerce through improved transportation service. It will also contribute to the economy of the County and State by providing largely federally funded construction jobs. An estimated construction expenditure of up to \$110 million will be made. The project will facilitate commerce without damaging the natural environment. The widening of Kaunualii Highway will occur alternately on the north or south sides of the roadway to avoid important historic, physical and natural resources.

4.1.3.1b Coastal Zone Management (CZM)

The following describes the project's consistency with the objectives and policies of the State's Coastal Zone Management (CZM) Program. The Department of Business, Economic Development and Tourism (DBEDT), the agency administering the State's CZM program, will review this assessment.

Recreation Resources

The Build Alternative will not adversely affect parks and recreational resources in the project area.

Historic Resources

An archaeological and historical assessment was conducted to identify historic resources (archaeological, cultural or historic sites on or eligible for the National Register of Historic

Places) that could be affected by the project. In addition, the State Historic Preservation Division (SHPD) and others (see Section 3.10) were consulted to ensure that all potential historic properties were identified. Section 106 of the National Historic Preservation Act requires a good faith effort to identify historic properties that could potentially be affected by the project. The Federal Highway Administration (FHWA) determined that only one historic property within the project's Area of Potential Effect will be adversely affected by the project: Lihue Mill Bridge. This assessment was submitted to the State Historic Preservation Officer (SHPO), who concurred with the determination of adverse effect. Following the SHPO concurrence with this determination of adverse effect, a Memorandum of Agreement that specifies mitigation measures was prepared. For more information, see Section 4.10.

Scenic And Open Space Resources

The Build Alternative will not block scenic resources (see Section 4.12). Although the additional right-of-way needed for the widening will displace open space, there are ample open space resources in the project area.

Coastal Ecosystems

Since the Build Alternative will not be within the Shoreline Setback Area or the Special Management Area, it will not affect coastal habitats or ecosystems.

Economic Uses

The Build Alternative will benefit residents in the southern portion of Kauai, and the visitor accommodation region in Koloa-Poipu, by alleviating roadway congestion on Kaumualii Highway between Maluhia Road and Lihue. However, it will also convert inactive agricultural land to transportation use, removing such land from possible future use in diversified agriculture (see Section 4.2). Given the abundance of fallow agricultural land in the area, the beneficial impact of congestion alleviation that will be provided by the Build Alternative will outweigh the loss of a very small part of the inventory of fallow agricultural land in the area.

Coastal Hazards

Kaumualii Highway is a crucial piece of infrastructure that will be used for evacuation in the event of a coastal hazard, such as a hurricane or tsunami. The Build Alternative will provide two additional lanes on Kaumualii Highway, increasing evacuation capacity.

Managing Development

The proposed project will facilitate and help localize development in areas planned for growth. The Build Alternative will also require State and County permits that include provisions for public participation. These permits are important for the protection of coastal resources.

4.1.3.1c Island of Kauai Long-Range Land Transportation Plan

The No Build Alternative assumes the construction of the transportation system that is recommended by the Kauai Long-Range Land Transportation Plan (May 1997), except the proposed project. Therefore, the No Build Alternative would only be partially consistent with the Long-Range Plan.

The Build Alternative will be consistent with the Long-Range Plan because it is an element of the Long Range Plan.

4.1.3.2 County of Kauai Plans and Controls

4.1.3.2a Kauai County General Plan

The Build Alternative will be consistent with the County General Plan goals and objectives. It will not detract from the concept of Kauai as the "The Garden Isle," especially since no part of the Maluhia Road "tree tunnel" will be displaced. In addition, the Build Alternative will minimize impacts to the environment by avoiding business displacements, although one residence will be displaced due to the re-alignment of Hoomana Road. The Build Alternative will be consistent with the general landscape of the project area.

A consistency evaluation with the current Discussion Draft of the General Plan is not included in this section because the updated General Plan is not yet adopted. However, both the adopted 1982 General Plan and the proposed update promote urban mixed-use development from Lihue to Puhi, along the south (makai) side of Kaumualii Highway. As described in Section 4.1.1, the Build Alternative will support such development by improving the transportation infrastructure of this area.

4.1.3.2b Kauai County Special Management Area

Since the Build Alternative will be outside the SMA, the project will not require an SMA permit from County.

4.1.4 Mitigation Measures

Land owners affected by right-of-way acquisition will be entitled to fair market compensation for land, buildings and uses in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. One residence will require relocation assistance. Such assistance may include replacement housing payments in addition to the value of the displaced dwelling. In addition, moving and other expenses will be reimbursed to a limit.

4.2 IMPACTS ON FARMLAND

4.2.1 Cropland Impacts

No active agricultural lands will be displaced by either the No-Build or Build Alternatives. However, the Build Alternative will permanently convert to transportation use approximately 25 ha (60 acres) of agriculturally zoned land in the area between Puhi and the west end of the project that could be used for future crop production. This impact will occur on fallow agricultural lands west of Puhi.

4.2.2 Farmland Protection Policy Act

Under the Farmland Protection Policy Act (FPPA), federal agencies must identify and consider the adverse effects of their programs on the preservation of farmland; consider alternative actions that could lessen adverse effects; and ensure that their programs, to the extent practicable, are compatible with State, local and private programs and policies to protect farmland. Agricultural areas that will be affected by the proposed project (see Section 4.2.1) are considered prime, unique, Statewide or locally important according to the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS). Therefore, the proposed project is subject to FPPA.

Per 7 CFR 658.4(a), a Form AD-1006, "Farmland Conversion Impact Rating," was submitted to the NRCS for a "relative value of farmland to be converted." The FHWA completed Form AD-1006 by providing site assessment scores per 7 CFR 658.5. The combined Land Evaluation and Site Assessment score for the Build Alternative is 134 points. (The second score on Form AD-1006 is for the Partial Re-Alignment Alternative (see Section 2.2.2), which was still under consideration at the time consultation with NRCS was occurring.) If an alternative receives a total score equal to or greater than 160 points, alternatives that avoid farmland impacts must be evaluated. However, with a score less than 160, the loss of farmland is not considered significant. The completed Form AD-1006 is provided in Appendix B.

4.3 IMPACTS ON SOCIOECONOMIC CONDITIONS

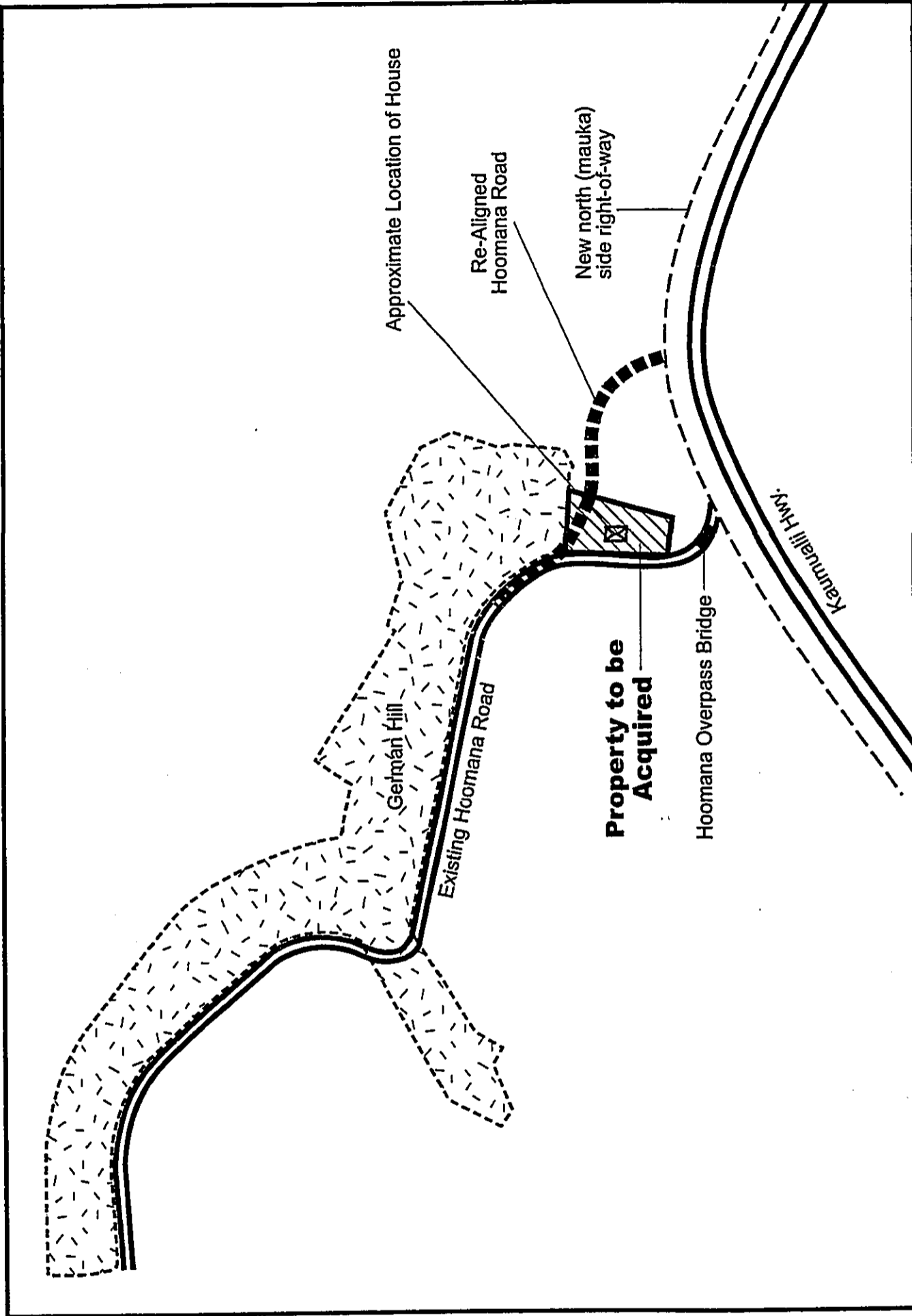
4.3.1 Neighborhoods

As shown on Figure 3-1, residential neighborhoods along Kaunualii Highway include Lihue, German Hill, Kukui Grove, Nawiliwili and Puhi. The Build Alternative will not cause residential or business displacements along Kaunualii Highway (see Section 4.1.2). In addition, safe pedestrian crossings and secondary road crossings will be provided to maintain pedestrian and vehicle connections across the widened highway. Therefore, the Build Alternative will not split any existing neighborhood, nor isolate parts of neighborhoods along the highway from the greater community. Connections across the highway will be maintained.

Although the re-alignment of Hoomana Road will displace one residence within the German Hill neighborhood (see Figure 4-1), the affected residence is located at the extreme southern edge of the neighborhood. Therefore, the remaining houses and the Lihue Lutheran Church will remain a cohesive neighborhood unit, and the social activities of the neighborhood will not be affected.

4.3.2 Economic Activities

None of the alternatives will affect property values in the study area. The market value of properties in the area is based on factors unrelated to the proposed highway widening, such as market demand for housing or commercial property. However, the Build Alternative will



N
 Source: PatEn, Inc.
 Not to Scale

Property to be Acquired for Re-Aligned Hoomana Road
IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
FIGURE 4-1

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

convert real estate in private ownership to a public right-of-way, which will decrease the base of private property generating property tax revenues for the County, lowering tax revenue. The No Build Alternative would not change County property tax revenues.

The Build Alternative will enhance Kauai's visitor industry and economy to a much greater degree than the No Build Alternative, by improving mobility and economic efficiency.

The Build Alternative will infuse federal funds into the local economy, which will increase short-term employment and the purchase of local goods and services. The project's impact on long-term employment will be minimal because there will be little difference in future employment-producing development (e.g., commercial) between the No Build and Build Alternatives (see Section 4.1.1). Nevertheless, the Build Alternative will enhance access to the commercial districts in Lihue, Kukui Grove and Puhi through improved traffic flow. Under the No Build Alternative, congested traffic conditions would make these commercial districts less attractive.

4.3.3 Public Facilities and Services

Neither the Build nor No Build Alternatives will directly affect (through right-of-way impacts) the public facilities and services described in Section 3.3.5. In particular, these alternatives will not require right-of-way from, or affect access to, any park or recreational resource. By providing additional roadway capacity on Kaunualii Highway, the Build Alternative will improve response time for police, fire and ambulance services. In addition, road closures that now occur because of traffic incidents will be much rarer. The No Build Alternative would not offer such benefits.

4.3.4 Environmental Justice (Executive Order 12898)

Executive Order (EO) 12898 regarding Environmental Justice requires federal agencies to take appropriate and necessary steps to identify and avoid disproportionately high and adverse effects of federal projects on minority and low-income populations' health or environment. Because of expected federal participation in the construction funding of this project, the project must comply with EO 12898.

Based on the information presented in Section 3.3, there are minority populations in the study area in accordance with the minority definition contained in "FHWA Actions to Address

Environmental Justice in Minority and Low-Income Populations (December 2, 1998)". There may also be pockets of low-income populations. However, in general, the study area does not contain a higher percentage of households below the U.S. Department of Health and Human Services' poverty level in comparison to the County and the State, and the median household income of the study area is greater than the median household incomes of the County and State. Since no alternative will cut through or cause proximity impacts (such as high noise levels or degraded air quality) to neighborhoods along the highway (see Section 4.3.1), there will be no minority or low-income populations that will experience high or disproportionate impacts from the project, despite the presence of minority populations and the possible presence of pockets of low-income populations in the study area. The German Hill residence that will be displaced due to the re-alignment of Hoomana Road is not owned or occupied by minority or low-income persons.

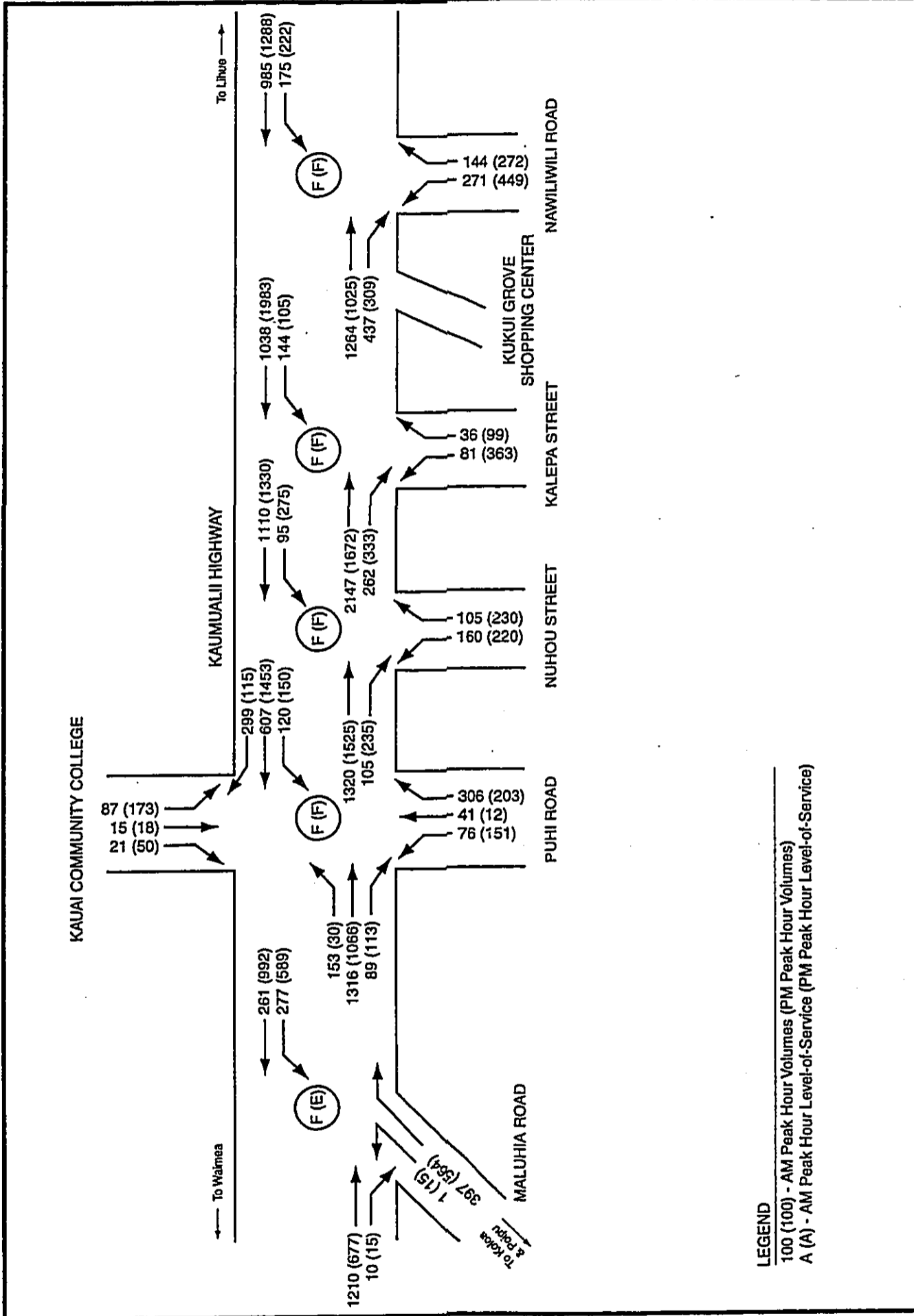
4.4 IMPACTS ON INFRASTRUCTURE

4.4.1 Transportation

4.4.1.1 Future Traffic Operations

Based on population and employment projections used in the Kauai Long-Range Land Transportation Plan (May 1997), projected traffic volumes on Kaumualii Highway for 2020 were developed. Average daily traffic (ADT) volume on Kaumualii Highway is forecast to be 37,600 vehicles in 2020. Given this level of projected travel demand, an analysis of traffic conditions at major intersections along the highway was conducted for the No Build and Build Alternatives.

Figure 4-2 shows projected volumes and levels-of-service (LOS) at five major intersections (Maluhia Road, Nuhou Street, Puhi Road, Kalepa Street and Nawiliwili Road) under the No Build Alternative. Since Kaumualii Highway is presently operating near and over capacity during peak periods (see Section 1.2.1), under the No Build Alternative, traffic operations at these intersections would worsen to LOS F (the worst condition possible) during both morning and afternoon peak hours by 2020.



LEGEND
 100 (100) - AM Peak Hour Volumes (PM Peak Hour Volumes)
 A (A) - AM Peak Hour Level-of-Service (PM Peak Hour Level-of-Service)

Source: Austin, Tsutsumi & Associates, Inc.



Year 2020 Traffic Conditions Under the No Build Alternative
IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
FIGURE 4-2

Figure 4-3 shows projected volumes and LOS at the same five major intersections under the Build Alternative. Kaumualii Highway will operate substantially better with the additional lanes that will be provided under the Build Alternative. In 2020, the highway will operate at LOS B/A and B during the morning and afternoon peak hours, respectively. The worst predicted traffic condition at the major intersections will be LOS C at the intersections of Kaumualii Highway and Kalepa Street in both the morning and afternoon peak hours, and Kaumualii Highway and Nuhou Street in the afternoon peak hour.

4.4.1.2 Bike and Pedestrian Movements

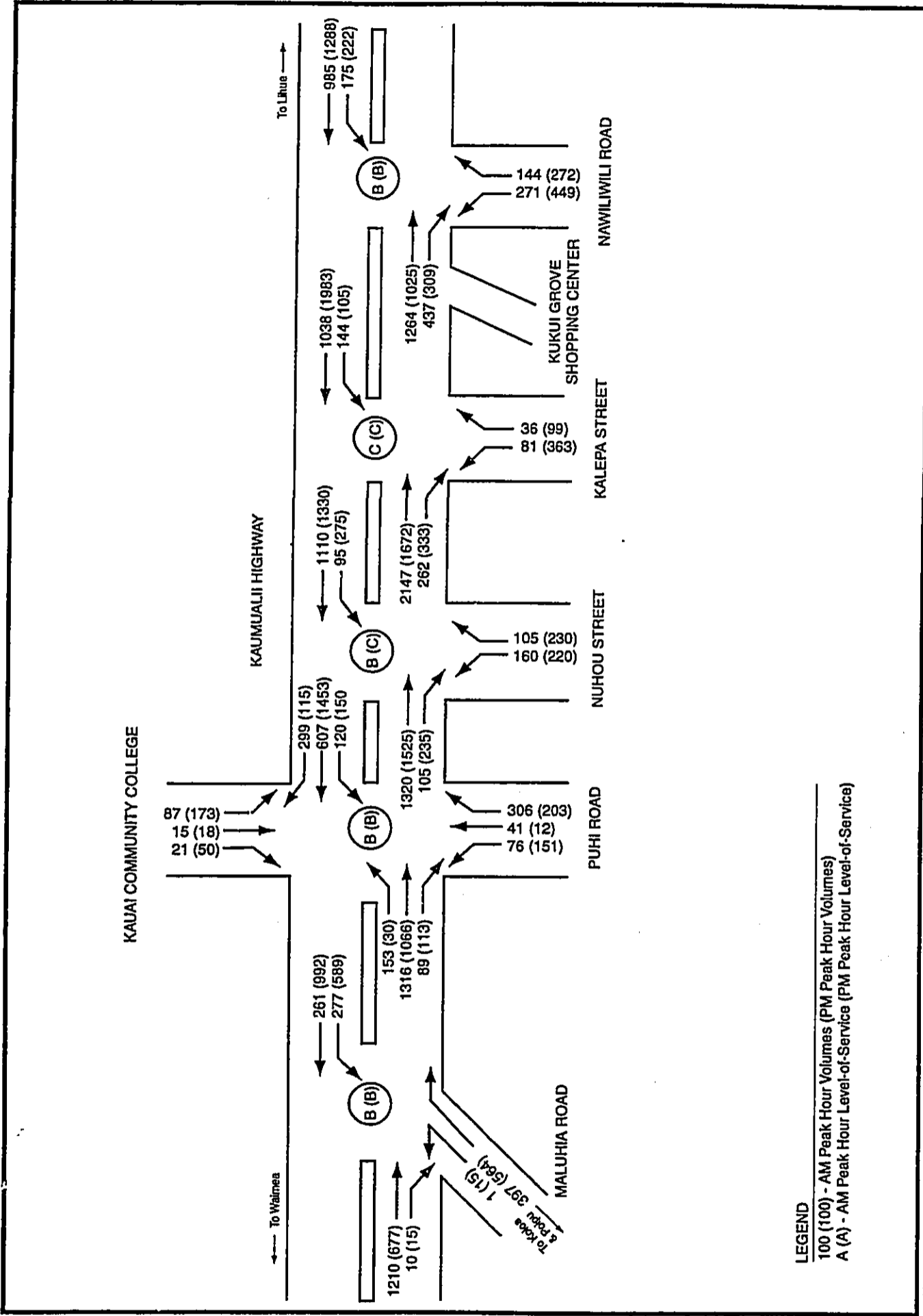
The No Build Alternative would not affect existing bike and pedestrian facilities in the project area. Therefore, the existing level of bike and pedestrian service would not change under the No Build Alternative.

The Build Alternative will widen the current 1.2 m (4 feet) shoulder width to 3 m (10 feet) on both sides of the highway. Widened shoulders will substantially increase space for cyclists using Kaumualii Highway, and improve their safety. Kaumualii Highway's existing designation as a bike route from Lihue to Knudsen Gap will be maintained, and the length of the bike route designation will be extended to at least the west end of the project. In urban areas, bike lanes will be striped at intersections because the 3 m (10 feet) shoulders could not be maintained in these areas.

The typical urban roadway cross-section (see Section 2.1.2), which will be used from Lihue to Puhi, includes sidewalks that will make this section of Kaumualii Highway much more accessible to pedestrians and wheelchair-dependent persons. The sidewalks will be compliant with the Americans with Disabilities Act. Sidewalks are not included in the typical rural cross-section (see Section 2.1.2) because no or little development is planned between Puhi and the west end of the project.

4.4.1.3 Transit Services

The County's bus system uses Kaumualii Highway to service South Kauai. Under the No Build Alternative, transit service will deteriorate because of increasing traffic congestion.



LEGEND

- 100 (100) - AM Peak Hour Volumes (PM Peak Hour Volumes)
- A (A) - AM Peak Hour Level-of-Service (PM Peak Hour Level-of-Service)

Source: Austin, Tsutsumi & Associates, Inc.



**Year 2020 Traffic Conditions Under the Build Alternative
KIMPROVEMENTS TO KAUMUALII HIGHWAY**
Final Environmental Assessment
FIGURE 4-3

Traffic operations on Kaumualii Highway will improve under the Build Alternative (Section 4.4.1.1). Therefore, transit service will improve under the Build Alternative, as transit vehicles will be less impeded by congestion.

4.4.1.4 Highway Safety

The Build Alternative will convert Kaumualii Highway from an undivided to a divided configuration with a median at least 10 m (32 feet) wide. This will improve motor vehicle safety by reducing the chance of head-on collisions, one of the most deadly types of incidences. The Build Alternative will also correct sight distance deficiencies that were made when the highway was constructed, which was before the adoption of current roadway design standards. Increased sight distances provide drivers with more time to react to potentially hazardous situations, increasing the safety of motorists using the highway. However, providing additional lanes will enable some motorists to exceed the highway's speed limit, potentially increasing the risk of incidents.

Under the No Build Alternative, the existing level of highway safety would remain the same, which based on incident statistics (see Appendix C), is relatively good.

4.4.2 Drainage

Under the No Build Alternative, existing drainage structures (inlets, energy dissipaters, culverts and piping) would remain.

Since the Build Alternative will widen the highway, drainage structures will be extended, and their capacities increased. During the design phase, the drainage systems will be engineered to maintain existing surface water movements. Therefore long-term hydraulic patterns will not be affected by the project.

4.5 IMPACTS ON AIR QUALITY

The analytical methods used to predict the impacts described in this section are accepted by the U.S. Environmental Protection Agency (USEPA) and the State of Hawaii Department of Health (SDOH).

4.5.1 Pollutants for Analysis

The pollutants relevant to evaluating the air quality impacts of a roadway project are those contained in motor vehicle emissions. Vehicles emit carbon monoxide (CO), hydrocarbons (HC), nitrogen oxide (NO_x), and lead (lead levels have decreased substantially and will continue to do so due to the mandated elimination of lead in gasoline). Of these four pollutants, only CO was selected for a quantitative microscale analysis because it is the most stable, and it is emitted at the highest concentrations. CO air pollution is generally considered to be a microscale problem that can be addressed locally to some extent. The other pollutants degrade air quality at a regional scale, with the regional level of impact not affected by a single roadway improvement project.

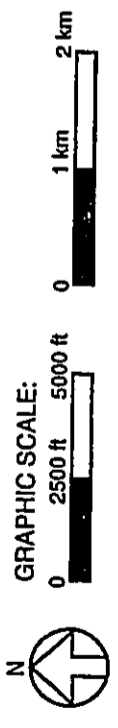
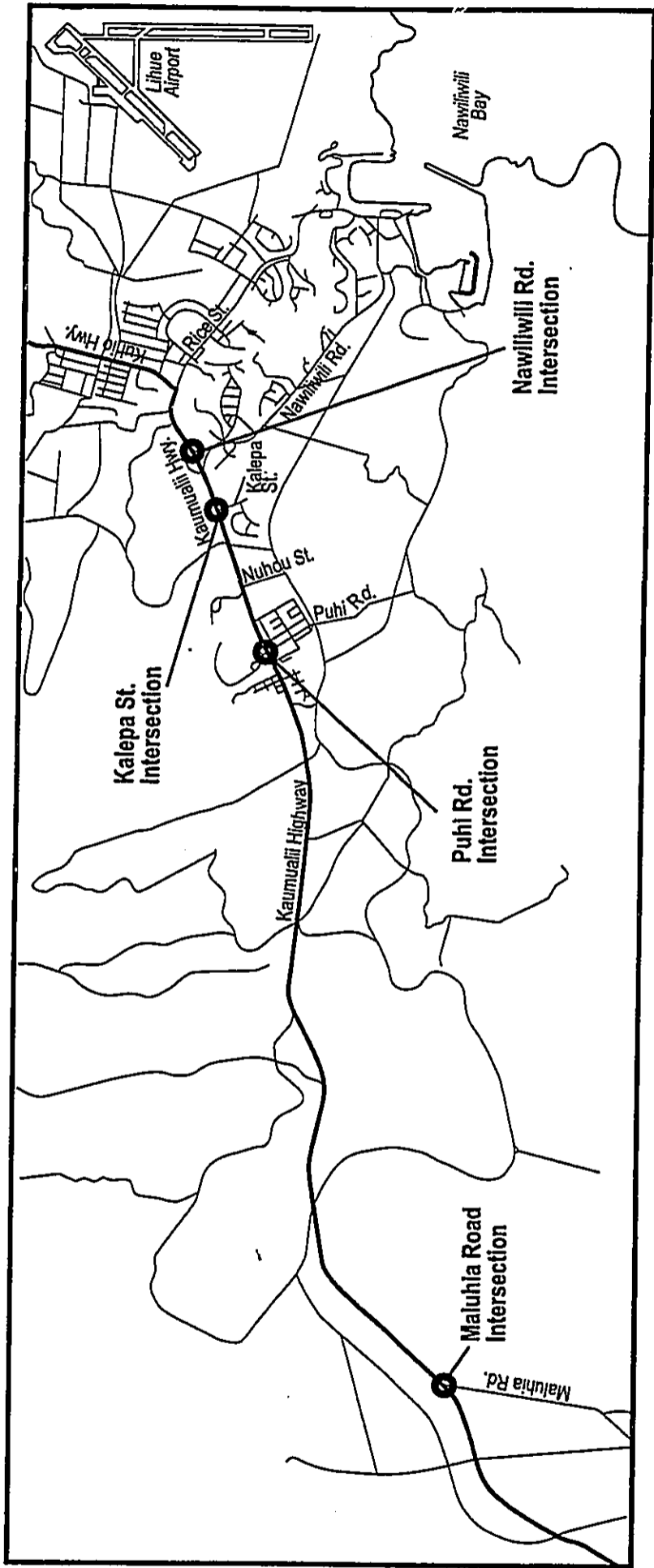
4.5.2 Methodology

A microscale impact assessment was conducted at specific locations to determine whether they will experience air quality impacts from motor vehicle emissions. Three scenarios were selected for analysis: 1998 (existing conditions); the No Build Alternative in 2020; and the Build Alternative in 2020. The following four intersections along Kaunualii Highway were identified for air quality analysis because of their existing and future traffic conditions (see Figure 4-4):

- Nawiliwili Road
- Kalepa Street
- Puhi Road
- Maluhia Road

Roadway intersections are the primary areas of concern in microscale air quality analysis because these are the areas where traffic congestion and queuing occurs, increasing the concentration of vehicular pollutants.

To estimate the maximum 1-hour average CO concentration for each scenario at the selected intersections, the computer models MOBILE5A and CAL3QHC were used. MOBILE5A is used to calculate vehicular CO emissions based on such factors as vehicle mix, cold/hot start fractions (emissions are greater under the cold-start mode), and ambient temperature. After computing vehicular CO emissions, CAL3QHC, an atmospheric dispersion model, was used.



Air Quality Analysis Locations
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FIGURE 4-4

12 11 10 9 8 7 6 5 4 3 2 1

CAL3QHC was developed for the USEPA to simulate vehicular movement, vehicle queuing and atmospheric dispersion of vehicular emissions near roadway intersections. It predicts 1-hour average pollutant concentrations near roadway intersections (signalized or unsignalized) based on traffic and emission data, roadway/receptor geometry and meteorological conditions.

Traffic data were obtained from the traffic study prepared for this project (Austin, Tsutsumi & Associates, Inc, July 1998). This data included vehicle approach volumes, saturation capacity estimates, intersection laneage and signal timings.

Meteorological conditions were defined to be "worst-case" in terms of atmospheric stability, mixing height (height above the surface at which relatively vigorous vertical mixing occurs), and wind speed. Existing background concentrations of CO of 0.5 parts per million (ppm) was assumed, which is considered to be conservative.

Worst-case 8-hour carbon monoxide concentrations were estimated by multiplying the worst-case 1-hour values by a persistence factor of 0.5, which is based on traffic volumes averaged over eight hours, and meteorological conditions that are more variable (and hence more favorable for dispersion) over an 8-hour period than they are for a single hour.

More detailed information on the methodology used to predict CO concentrations may be found in Appendix D.

4.5.3 Potential Impacts

As described in Section 4.4.1.1, the Build Alternative will result in a more efficient flow of motor vehicle traffic on Kaunualii Highway. Regionally, the Build Alternative will not change vehicle miles traveled (VMT) from the No Build Alternative, but will most likely reduce vehicle hours traveled (VHT) because of the improved traffic efficiency on Kaunualii Highway (i.e., motorists will spend less time traveling on Kaunualii Highway within the project limits). Therefore, small improvements in regional air quality will occur under the Build Alternative, but will hardly be noticeable.

Table 4-1 summarizes predicted worst-case 1-hour morning and afternoon ambient CO concentrations at the selected intersections.

Table 4-1
Estimated Worst-Case 1-Hour CO Concentrations
at Selected Intersections
(milligrams per cubic meter)

Kaumualii Highway Intersection	Year 1998 Existing Condition		Year 2020 No Build		Year 2020 Build	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
Nawiliwili Road	<u>10.0</u>	7.0	<u>12.3</u>	8.3	<u>12.0</u>	8.4
Kalepa Street	<u>11.0</u>	6.9	<u>11.6</u>	6.7	<u>10.7</u>	8.0
Puhi Road	<u>11.7</u>	6.9	<u>13.5</u>	7.0	<u>12.6</u>	7.2
Maluhia Road	5.0	3.0	<u>11.7</u>	7.7	6.8	4.7

Notes: Hawaii AAQS: 10.
National AAQS: 40.
Underline indicates predicted worst-case CO concentration will exceed Hawaii AAQS.

Source: B.D. Neal & Associates, Air Quality Study, Improvements to Kaumualii Highway, Lihue to West of Maluhia Road, January 2000

Under existing (1998) conditions, predicted worst-case 1-hour CO concentrations at all four intersections are well within the National AAQS of 40 mg/m³, but concentrations at three of the intersections either equaled or slightly exceeded the State AAQS, which is 10 mg/m³. The State 1-hour CO AAQS is so stringent that it is exceeded at many locations in the State that have even moderate traffic volumes.

Under the No Build Alternative, worst-case 1-hour CO concentrations would exceed the State AAQS at all four intersections, but none would exceed the National AAQS. At all four intersections, CO concentrations would increase when compared to existing conditions, particularly at the intersection of Kaumualii Highway and Maluhia Road, due to over capacity roadway conditions.

Under the Build Alternative, worst-case 1-hour CO concentrations will exceed the State AAQS at three of the four intersections, but none were predicted to exceed the National AAQS. When compared to the No Build Alternative, predicted worst-case concentrations for 2020 will either be lower or about the same, except at the intersection of Kaumualii Highway and Kalepa Street during the afternoon peak hour.

Table 4-2 summarizes worst-case 8-hour CO concentrations at the selected intersections. Under existing (1998) conditions, estimated worst-case concentrations either equaled or slightly exceeded the State AAQS of 5 mg/m³ at three of the four intersections, but remained well within the National AAQS of 10 mg/m³. Under the No Build Alternative, all the intersections would experience increased 8-hour CO concentrations compared to the existing condition due to congested traffic conditions. All four are also predicted to exceed the stringent State AAQS under worst-case meteorological conditions. Under the Build Alternative, worst-case 8-hour CO concentrations will improve compared to the No Build Alternative because of more efficient traffic operations.

**Table 4-2
Estimated Worst-Case 8-Hour CO Concentrations
at Selected Intersections
(milligrams per cubic meter)**

Kaunualii Highway Intersection	Year 1998 Existing Condition	Year 2020 No Build	Year 2020 Build
Nawiliwili Road	<u>5.0</u>	<u>6.2</u>	<u>6.0</u>
Kalepa Street	<u>5.5</u>	<u>5.8</u>	<u>5.4</u>
Puhi Road	<u>5.8</u>	<u>6.8</u>	<u>6.3</u>
Maluhia Road	2.5	5.8	3.4

Notes: Hawaii AAQS: 5
National AAQS: 10
Underline indicates predicted worst-case CO concentration will exceed Hawaii AAQS.

Source: B.D. Neal & Associates, Air Quality Study, Improvements to Kaunualii Highway, Lihue to West of Maluhia Road, January 2000

The results of the microscale analysis reflect the assumption of worst-case meteorological conditions. For example, a wind speed of 1 meter per second with a steady direction for 1 hour was assumed. This condition is extremely unlikely and may only occur less than once a year. With wind speeds of 2 meters per second, for example, computed CO concentrations will be only about half the values given above.

4.5.4 Mitigation Measures

Implementing air quality mitigation measures for long-term traffic-related impacts are unnecessary and unwarranted because worst-case CO concentrations are well within the National AAQS. Although the more stringent State AAQS are exceeded, these standards are exceeded near many roadway intersections in the State where traffic volumes are moderate to high. Finally, the Build Alternative will result in a slight to moderate improvement in CO levels when compared to the No Build Alternative.

4.6 IMPACTS ON NOISE LEVELS

The noise impact analysis for the proposed project was based on guidance contained in SDOT's FHWA-approved Noise Analysis and Abatement Policy (October 1996) (hereinafter referred to as Noise Policy). According to the Noise Policy, noise abatement must be considered when there is a noise impact, as defined by:

- predicted traffic noise levels (one-hour $L_{eq}(h)$ parameter) approach or exceed the FHWA Noise Abatement Criteria (NAC); or
- predicted traffic noise levels (one-hour $L_{eq}(h)$ parameter) substantially exceed the existing noise levels.

"Approach" means attain a noise level 1 dBA less than the NAC and "substantially exceed the existing noise levels" means an increase of at least 15 dBA.

Using input from the traffic study conducted for this project (Austin, Tsutsumi & Associates, Inc, July 1998) as well as noise monitoring data as reported in Section 3.6.2, FHWA's Traffic Noise Prediction Model (TNM Version 1.0b) was used to calculate existing and future peak noise levels at the two sensitive receptors for the year 2020: Welau Street residences and West Puhi residences. The future noise levels were calculated for both the No Build and Build conditions. Table 4-3 provides the results of the traffic noise modeling analysis.

As indicated on Table 4-3, the Build Alternative will slightly reduce traffic noise levels at the residential areas studied in comparison to the No Build Alternative. The Build Alternative will

not cause the NAC to be approached or exceeded at the sensitive receptors, nor will it cause a substantial increase in noise per the Noise Policy.

Table 4-3
Existing and Projected Peak Traffic Noise Levels ($L_{eq}(h)$)

Sensitive Receptor ¹	Peak Period	Existing Level	Predicted Noise Levels	
			No Build	Build
Welau Street residences	AM	61	63	62
	PM	58	61	60
West Puhi residences	AM	67	69	65
	PM	64	68	65

Notes: ¹ Modeling site for Welau Street residences was set at 69 m (225 feet) from Kaumualii Highway. Modeling site for West Puhi residences was set at 25 m (82 feet) from Kaumualii Highway.

Source: D.L. Adams Associates, Ltd., February 2000.

Noise abatement measures must be considered if a traffic "noise impact" is identified. Since the Build Alternative will not cause traffic noise impacts, noise abatement measures do not have to be considered.

4.7 IMPACTS ON WATER RESOURCES

4.7.1 Surface Water

Despite creating additional impervious roadway surface by the addition of two lanes, shoulders and sidewalks, the Build Alternative will maintain existing surface water drainage patterns. The flow in the natural streams and irrigation and drainage ditches that cross Kaumualii Highway will continue at present rates, and therefore possible flooding impacts or drainage of wetland areas will not occur. Existing culverts and piping that convey drainage under the road will be extended or reconstructed to accommodate the additional roadway lanes, widened median and shoulders. The flow capacities of the streams and ditches will be maintained. Lihue Mill Bridge and Huleia Bridge will remain in place, and new bridges will be constructed for the additional roadway lanes.

The Build Alternative will fill a small 500 m² (5400 square feet) pond near Maluhia Road on the north (mauka) side of Kaumualii Highway. The USACE does not consider this pond and the

nearby irrigation system that feeds this pond to be "Waters of the U.S". Therefore, according to the USACE, the pond is not regulated under Section 404 of the Clean Water Act.

The level of roadway-related pollutants (petroleum products, rubber, etc.) entering surface waters due to roadway run-off will likely be the same under the Build and No Build Alternatives because total vehicle-miles traveled (VMT), an indicator of roadway-related pollution, will be the same under both alternatives. VMT will increase under both alternatives as population and tourism increase. However, roadway pollution under the Build Alternative will be slightly less than roadway pollution under the No Build Alternative because it will result in lower total vehicle hours traveled. Due to the reduction in traffic congestion under the Build Alternative (see Section 4.4.1.1), motorists on average will spend less time traveling on Kaunualii Highway.

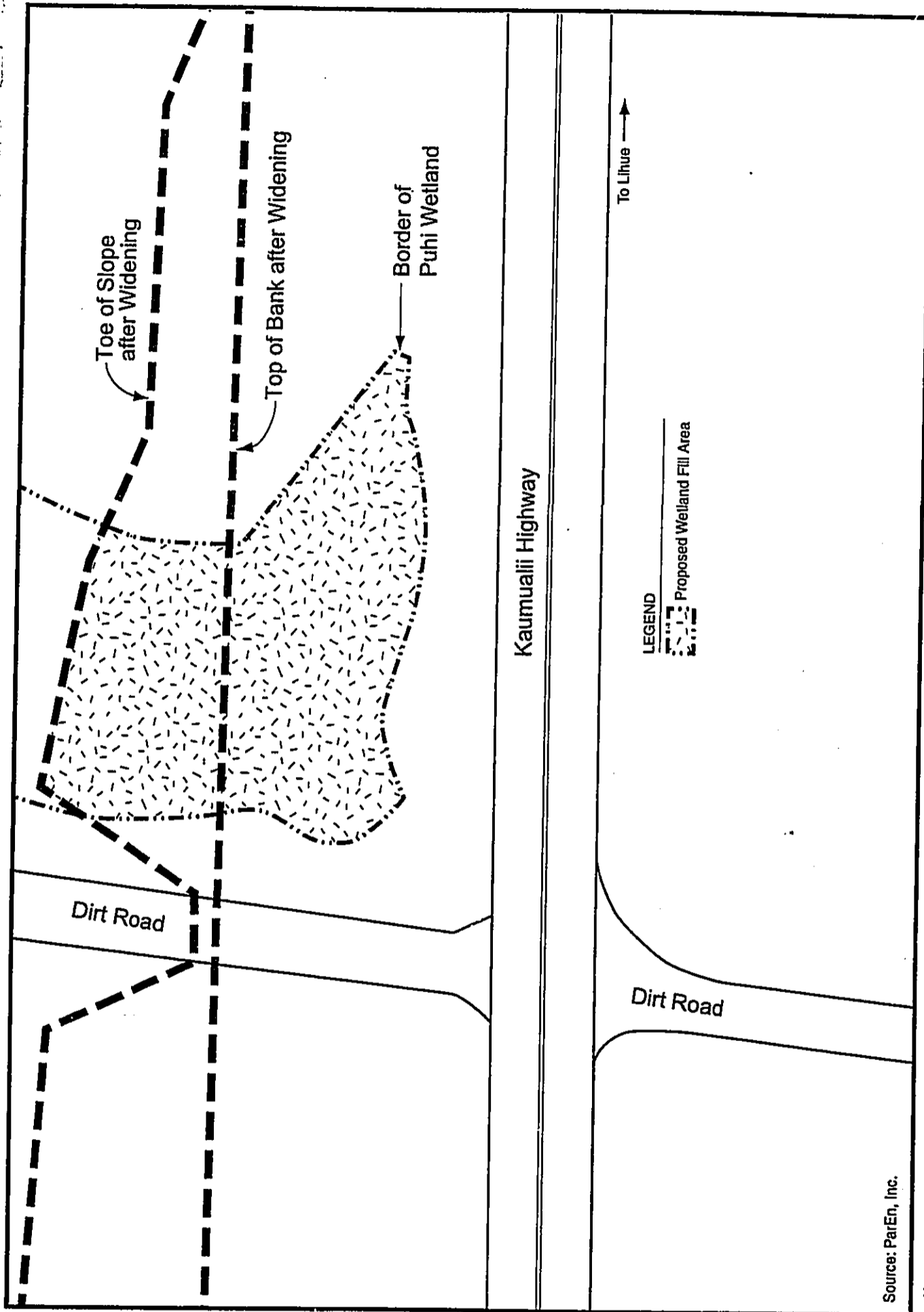
4.7.2 Groundwater

As described in Section 3.7.2, there is no USEPA-designated principal or sole-source aquifer in the project area. Therefore, the requirements pertaining to potential impacts to such a resource under Section 1424(e) of the Safe Drinking Water Act do not apply to the proposed project.

The Department of Land and Natural Resources Commission on Water Resource Management (CWRM) stated in a letter dated September 30, 1998 that construction activities at Haupū Range (Knudsen Gap) could affect dike structures, but acknowledged it is uncertain whether groundwater would be encountered. If groundwater is encountered, mitigation will be implemented (see Section 4.7.5).

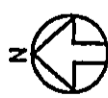
4.7.3 Wetlands

One wetland identified by the U.S. Army Corps of Engineers (USACE) will be affected by the project. The Build Alternative will partially fill approximately 0.1 ha (0.25 acres) of Puhi Wetland (previously identified as wetland #4) (see Figure 4-5). The Build Alternative will avoid filling any parts of Weoweopilau Wetland (previously identified as wetland #2) and the Maluhia Road Wetlands, two wetland areas located on both sides of Maluhia Road, south (makai) of Kaunualii Highway. Although Maluhia Road Wetland 1 is located close to the Kaunualii



Proposed Fill Area at Puhi Wetland
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FIGURE 4-5

Source: ParEn, Inc.



GRAPHIC SCALE:
 0 20 ft 40 ft

0 6 m 12 m

Highway and the Maluhia Road intersection, widening to the north (mauka) side of Kaumualii Highway will not affect this wetland area.

The proposed fill at Puhī Wetland will require a Department of the Army (DA) Permit under Section 404 of the Clean Water Act. However, because of the relatively small size of this fill (0.1 ha (0.25 acre)), the proposed fill will be covered under a Nationwide Permit. A Section 401 Water Quality Certification will be required from the State Department of Health (SDOH), pursuant to Section 401(a)(1) of the federal Water Pollution Control Act.

4.7.4 Floodplains

The amount of additional paved surface under the Build Alternative, which includes lanes, shoulders and sidewalks, but not the median and adjacent grading, will total approximately 16 hectares (40 acres). Spread over a distance of 12 kilometers (7.5 miles), this amount is very small in comparison to the size of the total regional watershed. Therefore, the Build Alternative will not create a regionally significant increase in runoff volume.

Hydraulic analyses (ParEn, Inc., April 2000) were conducted to determine floodplain impacts of the additional bridge structures proposed over Nawiliwili and Huleia Streams. The results indicate that the base flood elevations at these streams will not change, and therefore, flooding risks will not change in comparison to the No Build Alternative.

The Build Alternative will not induce floodplain development because no access to the floodplain will be provided from Kaumualii Highway. The Build Alternative will not require a revision of the regulatory floodway.

4.7.5 Mitigation Measures

The highway drainage system will be designed to maintain existing surface water movements, and not cause draining of wetlands or changes in ponding.

SDOT will coordinate with CWRM to mitigate any impacts to dike structures should they be encountered during construction at Knudsen Gap. If groundwater is encountered during construction, the contractor will be required to reseal exposed compartments as soon as possible. CWRM recommended bulkheading (see Appendix A).

To mitigate the 0.1 ha (0.25 acre) fill at Puhi Wetland, the drainage system for the east fork of Puhi Stream, the water source of Puhi Wetland, will be designed so that the flow of Puhi Stream will not drain the remaining wetland nor inundate it. In addition, the wetland losses will be replaced at a location probably upstream from the existing wetland, at a ratio of at least one to one. Coordination with USACE, USEPA, and the U.S. Fish and Wildlife Service (USFWS) is continuing to establish the mitigation site and ratio. These details will be resolved in the design phase of the project in the context of the permit process.

4.8 IMPACTS ON ECOSYSTEMS

4.8.1 Flora

The No Build Alternative would not have an impact on the terrestrial flora of the region.

The Build Alternative will clear approximately 35 ha (86 acres) of vegetational communities composed of urban landscape, agriculture, and unused fallow lands. Cropland impacts are discussed in Section 4.2. Despite the area that will be converted to roadway infrastructure, the Build Alternative is not expected to cause an adverse impact on the region's botanical resources because the vegetational communities that will be directly affected are regionally abundant (see Section 3.8.1). The most notable impact on floral resources will be the displacement of several swamp mahogany (*Eucalyptus robusta*) trees located on the north (mauka) side of the highway near the Maluhia Road intersection. These trees are not part of the Maluhia Road tree tunnel, which is composed of swamp mahogany trees. These trees are also not listed as threatened or endangered by the USFWS.

4.8.2 Fauna

The No Build Alternative would not affect existing faunal conditions.

The Build Alternative could displace existing faunal habitats along Kaumualii Highway because of the area extent of the roadway widening. However, the faunal habitats that will be displaced are abundant in the region.

4.8.3 Threatened and Endangered Species

The USFWS and the State of Hawaii Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) were consulted (see Appendix B) regarding possible impact to threatened and endangered species (see Section 3.8.3). The USFWS may impose requirements upon federal agencies regarding endangered or threatened species and critical habitat under Section 7 of the Endangered Species Act of 1973. The USFWS noted the possible presence of endangered Hawaiian waterbirds (Hawaiian duck (*Anas wyvilliana*), Hawaiian stilt (*Himantopus mexicanus*), Hawaiian coot (*Fulica alai*), and Hawaiian moorhen (*Gallinula chloropus*)) and the endangered Hawaiian Hoary Bat (*Lasiurus cinereus semotus*) in the project area. USFWS and DOFAW also noted the problem of migrating seabirds (the endangered Hawaiian dark-rumped petrel (*Pterodroma phaeopygia sandwichensis*) and the threatened Newell's shearwater (*Puffinus newelli*)) being attracted to highway lighting.

A discussion of the likelihood that the project will jeopardize the continuing existence of these species is provided below. Based on this information, the FHWA determined that the Build Alternative will not likely adversely affect the species identified by the USFWS in their January 31, 2000 letter. In accordance with Section 7, FHWA requested concurrence from the USFWS with this determination in a letter dated March 10, 2000 (see Appendix B). In a letter dated April 11, 2000, the USFWS concurred with the FHWA determination (see Appendix B). Unless circumstances change (e.g., proposed project is substantially modified, or a new Federal Trust species is identified in the project area), the requirements of Section 7 of the Endangered Species Act have been satisfied.

Hawaiian Waterbirds

According to the Recovery Plan for the Hawaiian Waterbirds (1977), the primary habitats for endangered waterbirds are Waita Reservoir, the settling basins in the Koloa area, and the Huleia National Wildlife Refuge (NWR). Primary habitat provides all the requirements for completion of a species' annual life cycle. The Draft Revised Recovery Plan for Hawaiian Waterbirds (May 1999) was less site specific, but did identify core wetland habitat at Huleia NWR and the Koloa wetlands. These wetland areas are over 3 km (2 miles) south of and downstream from the project area.

The Draft Waterbird Plan noted several factors contributing to the decline or prevention of recovery of Hawaiian waterbirds:

- loss of wetland habitat;
- indiscriminate hunting;
- introduction of predators;
- altering the hydrology of wetland areas;
- invasion of habitat by alien plants;
- interbreeding between similar species;
- avian disease; and
- introduction of environmental contaminants.

The Build Alternative will not contribute to any of the above factors because most of them are not applicable to the proposed project. The Build Alternative will not fill any of the wetlands identified as primary or core habitat. The only wetland fill proposed by the Build Alternative will be approximately 0.1 ha (0.25 acres) (see Section 4.7.3). According to the wetland delineation survey conducted by the USACE (see Appendix F), this wetland does not function as waterbird habitat. In addition, despite primary habitat areas being downstream from the project area, they will not be indirectly affected by the Build Alternative because drainage patterns of the streams and ditches that cross Kaunualii Highway will not be altered, and the level of roadway-related pollution will not be different than under the No Build Alternative (see Section 4.7.1).

Hawaiian Hoary Bat

According to the USFWS website, relatively little research has been conducted on the habitat and population status of the Hawaiian hoary bat. The Recovery Plan for the Hawaiian Hoary Bat (April 1998) stated that the bat is found primarily in open areas near forests and occasionally in drier areas. They are rarely found in towns or over open fields. A survey conducted in the late 1980s (USFWS, April 1998) indicated that the bat appears to be limited to the northern forested zones of the island, which was supported by recent anecdotal evidence (USFWS, April 1998). The USFWS has not designated protected habitat for the bat.

The Build Alternative will not likely affect Hawaiian hoary bat roosting sites. The Hawaiian Hoary Bat Plan stated that the availability of roosting sites rather than food availability, predation or other factors is believed to be the primary limitation to the distribution and abundance of many bat species. The areas that will be used by the Build Alternative are open space, either near urban areas or open fields that were recently used for large-scale agriculture. Therefore, based on the description of preferred habitat types in the Hawaiian Hoary Bat Plan, the terrain that will be affected by the roadway widening does not appear to be the type of habitat favored by the Hawaiian hoary bat.

Migrating Seabirds

According to DOFAW (see letter dated September 14, 1998 in Appendix B), young fledgling Newell's shearwaters are attracted to bright lights and headlights of cars when flying at sea (The DOFAW letter did not mention the Hawaiian dark-rumped petrel but the same light attraction occurs with this species as well.). They become momentarily blinded by the lights and are unable to see utility wires, or sometimes become confused, landing on the highway or brightly lit areas. DOFAW stated that many injured Newell's shearwater birds have been recovered along Kaunualii Highway, particularly in Kukui Grove, Puhi and the Maluhia Road intersection.

For traffic safety reasons, both the Build and No Build Alternatives will include highway lamps at certain locations, such as at intersections and populated areas. Some of these locations already have highway lamps. Therefore, the attraction of migrating seabirds to highway lighting will continue under both alternatives. However, lighting to be provided by the Build Alternative will be designed to reduce glare and shield light from migrating seabirds, as recommended by DOFAW (see September 14, 1998 letter) (see Section 4.8.4).

4.8.4 Mitigation Measures

Losses of floral communities will be partially mitigated by landscaping, which will enhance the appearance of the highway. Native trees and shrubs will be used where landscaping is to be provided. These plants are already adapted to local growing conditions and will require less water and soil amendments. Irrigation will not be provided along much of the highway. Interested organizations, such as the Kauai Outdoor Circle, will be contacted for suggestions

about plantings. A landscaping plan will be developed and completed during the project's design phase.

The swamp mahogany trees displaced by the Build Alternative will be relocated to bare spots along the Maluhia Road tree tunnel under the supervision of a certified arborist. In addition, other trees to be displaced that warrant preservation or relocation will be identified with the assistance of interested organizations, even though these trees are not federal Trust Species and may not be native. Any relocation of trees will be conducted under the supervision of a certified arborist.

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.

4.9 GEOLOGY, PHYSIOGRAPHY, SITE CONTAMINATION AND NATURAL HAZARDS

4.9.1 Geologic And Physiographic Setting

The Build and No Build Alternatives will not affect the geologic conditions of the study area, nor will they substantially change the study area's topographic features.

4.9.2 Natural Hazards

Since Kaumualii Highway serves the population in southern Kauai, it is a crucial component of the evacuation plan in the event of a coastal hazard, such as a hurricane or tsunami. The Build Alternative will boost coastal evacuation capacity by providing two additional lanes on Kaumualii Highway. The No Build Alternative would not change the level of evacuation capacity on Kaumualii Highway.

4.10 IMPACTS ON HISTORIC RESOURCES

4.10.1 Section 106

Section 106 of the National Historic Preservation Act of 1966 requires that federal agencies consider the effect of their projects on any resource listed on or eligible for the National Register of Historic Places, in coordination with the State Historic Preservation Officer (SHPO). The Advisory Council on Historic Preservation (ACHP) is given an opportunity to review project impacts if appropriate. There are two basic steps in the Section 106 process: (1) identify historic properties in the project's area of potential effects (APE); and (2) assess effects, and if necessary, mitigate adverse impacts.

Section 3.10 documents the activities performed to comply with Step 1.

In assessing the effects of a project on a historic property (Step 2), there can only be one of the following three findings under Section 106:

- no historic properties affected;
- no adverse effect; and
- adverse effect.

"No historic properties affected" means that either there are no historic properties present or there are historic properties present but the undertaking will have no effect upon them of any kind (that is, neither harmful nor beneficial). An "effect" means alteration of those characteristics of a historic property that qualify it for inclusion in or eligibility for the National Register.

"No adverse effect" means that there could be an effect, but the effect would not be harmful to those characteristics that qualify the property for inclusion in the National Register. In other words, it would not diminish or adversely affect the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

An "adverse effect" means an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting,

materials, workmanship, feeling, or association. If an "adverse effect" is determined for an historic property, a Memorandum of Agreement (MOA) between the federal agency and the SHPO is executed. The MOA specifies the mitigation measures to be followed.

4.10.2 Potential Impacts

In accordance with Section 106 regulations, the FHWA conducted effect determinations on the historic properties in the APE. The results are summarized on Table 4-4.

As described in Section 2.2.1, an exclusive south (Alignment A) or north (Alignment B) widening was eliminated from consideration because it was found that a combination of the two could achieve the purposes and needs of the project while avoiding impacts on historic properties in the APE. In the area of Lihue Mill and Lihue Public Cemetery, the highway will be widened on the north (mauka) side, which is the opposite side from these historic properties. In the area of Kilohana, the highway will be widened on the south (makai) side, opposite from this historic building and the small residence in this property. In the area of the Grove Farm office building, the highway will be widened on the north (mauka) side, opposite the historic property.

**Table 4-4
Section 106 Effect Determinations**

Historic Property	Effect Determination
Lihue Mill	No Adverse Effect
Lihue Mill Bridge	Adverse Effect
German Hill Historic District	No Adverse Effect
Hoomana Overpass Bridge	No Adverse Effect
Lihue Public Cemetery	No Adverse Effect
Kilohana	No Adverse Effect
Residence adjacent to Kilohana	No Adverse Effect
Grove Farm administrative office building	No Adverse Effect

Source: Federal Highway Administration, March 2000.

Although Kaumualii Highway will be widened toward Hoomana Overpass Bridge, the bridge itself will not be displaced or altered. Therefore, FHWA rendered a "no adverse effect" determination. Since Hoomana Road will be re-aligned (see Section 2.1.2), the use of the

bridge for vehicular access to German Hill will no longer be needed. However, the bridge will be used for pedestrian and cycling access between the neighborhood and Kaunualii Highway.

The FHWA rendered a "no adverse effect" determination regarding the German Hill historic district despite the need to displace one of the residences in the district. The historic integrity of the district will not be affected because the residence is located at the extreme southern edge of the district, and the remaining houses and church will remain a cohesive unit. Based on information obtained from SHPD, the residence is not individually historic.

The FHWA rendered an "adverse effect" determination on Lihue Mill Bridge because the Build Alternative will widen the bridge deck and replace its steel railings with new railings. Although the new railings will be selected in part for their aesthetic features, while still meeting highway safety standards, the unique characteristics that make the bridge historic will be altered.

The effect determinations summarized on Table 4-4 were submitted to the SHPO for concurrence in a March 20, 2000 letter (see Appendix B). The SHPO concurred with the effect determinations in a letter dated March 28, 2000 (see Appendix B).

4.10.3 Mitigation Measures

As described in Section 4.1.4, the owner-occupant of the residence that will be displaced will be provided with relocation assistance. However, if the house is moveable, the house could be relocated in the district if suitable property can be found and the owner is agreeable. If the house is razed, photo documentation of the house will be obtained, in addition to what is currently in the State Historic Preservation Division files.

In accordance with Section 106 regulations, a MOA was prepared because of the "adverse effect" determination regarding Lihue Mill Bridge (see Appendix B). The MOA specifies that photographic and written documentation of Lihue Mill Bridge will be conducted, in accordance with the Historic American Building Survey (HABS) standards.

In the event an unknown historic or archaeological site is discovered during construction, all work will stop and the SHPD will be informed and consulted on the appropriate treatment measures.

4.11 SECTION 4(F) IMPACTS

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 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.

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."

The Build Alternative will not use lands from publicly-owned public parks or recreational facilities, or wildlife and waterfowl refuges, because there are no such resources immediately adjacent to the highway within the project limits. The Build Alternative will not use the future park to be located south (makai) of Kaumualii Highway, west of Nuhou Street.

An historic site falls within the protection afforded by Section 4(f) only if it is on or eligible for the National Register of Historic Places. The Build Alternative will use property from two historic sites (properties): Lihue Mill Bridge and the German Hill historic district. Section 4(f) applies to the use of Lihue Mill Bridge because the Build Alternative will adversely affect the historic integrity of this bridge (the criteria for which the bridge was designated historic) by replacing the bridge's existing railings (see Section 4.10.2).

Under the No Build Alternative, Lihue Mill Bridge would temporarily remain as is, but SDOT would eventually have to replace the railings with FHWA-approved railings for safety reasons because of their deterioration. This work may not involve federal funds, and if federal funds are not involved, Section 4(f) would not apply.

Section 4(f) does not apply to the use of the German Hill historic district because displacement of the affected residence will not alter the historic integrity of the district. The residence is not individually historic, nor is it an integral part of the district.

The "use" of an historic bridge can be covered under one of FHWA's programmatic Section 4(f) evaluations. Under a programmatic Section 4(f) evaluation, if a project meets specified conditions, it satisfies the requirements of Section 4(f). To use the programmatic Section 4(f) evaluation for historic bridges, the proposed project must meet the following criteria:

1. the bridge will be replaced or rehabilitated with federal funds;
2. the bridge proposed to be "used" is on, or eligible for, the National Register of Historic Places;
3. the bridge to be "used" is not a National Historic Landmark; and
4. the project does not require the preparation of an environmental impact statement.

Since the proposed project meets all four of the above criteria, the Programmatic Section 4(f) Determination and Approval form for the use of historic bridges was used (see Appendix B). Therefore, it has been determined by the FHWA that there are no feasible and prudent alternatives to the use of the historic Lihue Mill Bridge.

4.12 IMPACTS ON VISUAL AND AESTHETIC RESOURCES

None of the alternatives will affect the viewsheds of the Haupu Range and Maluhia Road "tree tunnel" described in Section 3.11. The visual quality of these resources will not be adversely affected because none of the alternatives will visually encroach upon views of these resources.

4.13 CONSTRUCTION IMPACTS AND MITIGATION

4.13.1 Maintenance of Traffic

Construction will cause motorists traveling on Kaunualii Highway to experience some delay and inconvenience for the duration of construction. However, since most of the work will occur alternately on either the north (mauka) or south (makai) side of the highway, lane closures will not be necessary during most of the construction, and the existing two lanes of traffic will remain open. Even when construction work is being done along the existing Kaunualii Highway (e.g. repavement, construction of sidewalks, etc.), activities will be phased so that the new section of the highway will already be completed, and will be used to detour the two lanes of traffic around the construction site, minimizing traffic delays. If closure of a lane(s) is absolutely necessary, it will be restricted to off-peak hours.

Access to residences and businesses along Kaunualii Highway will be maintained. For example, Hoomana Road will be re-aligned to maintain access to German Hill before highway widening is conducted in this area. Also, if any intersection is closed temporarily during construction, provisions will be made to detour traffic around these closures. During final design, detailed Work Zone Traffic Control Plans that include detour plans will be formulated.

Even with an effective maintenance of traffic plan, construction-related detours and traffic disruptions could cause inconveniences to local residents, and may cause certain businesses, such as in Puhi and Kukui Grove, to lose revenue temporarily.

4.13.2 Air Quality

Air quality impacts during roadway construction generally consist of fugitive dust and mobile source emissions from construction equipment. Air quality degradation can occur due to disruption of normal traffic flow. However, this is not anticipated to occur because two lanes of traffic will be maintained for the most part during construction (see Section 4.13.1)

Fugitive dust is airborne particulate matter, of usually large particle size, generated by construction vehicles operating around construction sites and material blown from uncovered haul trucks, stockpiles, and exposed areas. The emission rate for fugitive dust emissions from construction activities is difficult to estimate accurately because its generation varies greatly

depending upon the type of soil, the amount and type of dirt-disturbing activity, the moisture content of exposed soil, and wind speed. A rough estimate from the USEPA is 1.2 tons per acre per month under conditions of "medium" activity, moderate soil silt content (30%), and precipitation/evaporation (P/E) index of 50. Nevertheless, State Air Pollution Control Regulations prohibit visible emissions of fugitive dust.

Frequent watering will control fugitive dust at construction sites. In addition, wind screens will be used in areas near residences and commercial districts, as well as limiting the areas of disturbance at any given time. Landscaping will be established as early as possible. To prevent haul trucks from tracking dirt onto paved streets, tire washing or road cleaning may be appropriate. State regulations further stipulate that open-bodied trucks be covered at all times when in motion if they are transporting wind-erodible materials.

Construction vehicles will emit engine exhaust. The largest of this equipment is usually diesel-powered, which emit relatively highway levels of NO_x in comparison to gasoline-powered equipment. However, standards for such pollutants are set on an annual basis and will therefore not likely be violated by short-term construction equipment emissions.

4.13.3 Noise

Construction will involve the use of heavy machinery that may cause temporary noise impacts to adjacent noise sensitive land uses. Table 4-5 presents maximum noise levels (L_{max}) of heavy mobile construction equipment and compressors measured at a distance of 15 m (50 feet). Construction will normally occur during daylight hours when occasional loud noises are more tolerable. In addition, most of the construction site will not be near noise sensitive land uses. Therefore, extended noise disruptions to normal activities are not anticipated.

Since the State Department of Health (SDOH) maintains community noise control standards (HAR Section 11-46) that apply to construction noise, these specifications will be followed.

4.13.4 Water Resources

The primary potential for construction-phase water resource impacts will be associated with erosion and sedimentation associated with the project's clearing and earthmoving activities, and alteration of existing drainage patterns.

**Table 4-5
Construction Equipment Noise Levels**

Source	L _{max} (dBA) at 15 m (50 ft)	Model Tested
Backhoe	85	John Deere 609A
Front Loader	84	Caterpillar 980
Dozer	84	Caterpillar D7e
Grader	91	Caterpillar 16
Scraper	92	Caterpillar 660
Compressor	80-89	Various Tested
Pile Driver	95-100	Various Tested

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

Stormwater 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;
- immediate planting of vegetation and/or mulching on highly erodible or critical 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 SDOH when they issue the National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge Permit for this project, and the County will also require specific measures when they issue the Grading, Grubbing, Stockpiling and Excavation Permit.

The USFWS requested in a letter dated September 23, 1998, and repeated during a meeting held on December 21, 1999, that the following measures be implemented during construction to minimize adverse impacts on aquatic species downstream of the project site, including those in Huleia National Wildlife Refuge:

- no materials be stockpiled in any aquatic environment;
- any equipment placed in any surface water be free of pollutants;
- no disposal of trash and debris in any aquatic environment;
- contingency plan to prevent contamination of aquatic environments in the event of an accidental petroleum product spill; and
- silt containment measures be implemented.

The project will implement all of the measures above.

4.13.5 Solid Waste Management and Hazardous Waste

Project construction will require excavation, filling and grading activity. Excavated materials will be used elsewhere on the project for fill.

Good housekeeping practices will be required of the contractor, such as ensuring that:

- all waste materials be collected and stored in securely lidded metal dumpsters and not buried on site;
- materials stored on-site be stored in a neat, orderly manner in appropriate containers (i.e., per manufacturers recommendations);
- all on-site vehicles be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage; and
- a spill prevention and clean-up plan is prepared and implemented if needed.

All sanitary waste generated during the construction phase will be collected from portable units as required.

The information provided in Section 3.9.2 indicates the potential for site contamination in the construction site. However, identification of a site as a potential source of contamination does not necessarily mean that contamination has been positively identified. If contamination is identified during construction, the contractor will report it immediately to SDOT and SDOH. Handling of hazardous materials and possible remediation of the contaminated site will be required in accordance with applicable State and federal laws, which specify the handling, treatment, and disposal of contaminated materials.

4.13.6 Historic and Archaeological Resources

Construction activity could encounter undocumented archaeological sites, although such discoveries are unlikely given the extent of prior land disturbance in the corridor. If a potential archaeological site, such as a burial, is uncovered during construction, work will stop and the SHPD will immediately be notified. Construction will resume upon approval of the appropriate authorities.

4.13.7 Utilities

The overhead electrical lines owned by Citizen's Utilities Company, Kauai Electric Division, and telephone lines owned by GTE Hawaiian Telephone will be relocated under the Build Alternative. In addition, water transmission lines, which are located within the Kaunualii Highway right-of-way from Lihue to Puhi, and an existing 20 cm (8-inch) sewer line that crosses Kaunualii Highway from Kauai Community College, may also be relocated.

Substantial planning, including coordination with utility providers, will occur to minimize interruptions in utility service to customers. Disruptions to utility service, if necessary, will be restricted to short-term localized events. Careful scheduling of these disruptions and prior notification of properties that will be affected will mitigate some of the utility relocation impacts.

4.14 PERMITS AND APPROVALS

The following permits or approvals will be required prior to the construction of the project.

Federal

- USACE - Section 404 permit (Nationwide)

State

- SDOH - National Pollutant Discharge Elimination System (NPDES) permit
- SDOH - Water Quality Certification
- State of Hawaii Department of Land and Natural Resources – Stream Channel Alteration Permit
- DBEDT, Office of Planning - Coastal Zone Management consistency concurrence

County

- Department of Public Works (DPW)- Grading, Grubbing, Stockpiling and Excavation permit

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CHAPTER FIVE
Comments and Coordination

CHAPTER 5 COMMENTS AND COORDINATION

This chapter summarizes public and agency consultation and coordination activities associated with this project that have been conducted to date. Project scoping and coordination activities included public information meetings; correspondence with government agencies, landowners, and environmental organizations; and meetings with government agencies and other interested parties. A summary of these activities is provided in this chapter. This chapter also provides a record of all the written and oral comments received during the Draft EA comment period, and at the project's formal public hearing. Responses from the State of Hawaii Department of Transportation (SDOT) to each comment received during the Draft EA comment period are included in this chapter. Other chapters of this document were revised as appropriate in response to the comments received on the Draft EA.

5.1 SCOPING AND AGENCY CONSULTATION

Coordination with the following agencies, organizations and landowners was conducted throughout the scoping process (see Appendix A). These agencies and organizations were either asked to provide information to help prepare the EA or provide comments on potential impacts to certain properties or resources.

State Agencies

- Department of Land and Natural Resources, Commission on Water Resource Management
- Department of Business, Economic Development and Tourism, Office of Planning

County of Kauai Agencies

- Planning Department
- Department of Public Works
- Department of Water
- Transportation Agency

Other Organizations

- AMFAC Land Company, Limited (Lihue Plantation)

- Grove Farm Properties, Inc.
- Island School
- Kauai Community College
- Kauai Electric Company
- Kauai Humane Society
- Kauai Outdoor Circle
- Kaumualii Investment Company & Koamalu Associates
- Kilohana/Wilcox Trust
- Knudsen Trust
- Lihue Public Cemetery Association

Since the project will require compliance with certain environmental laws and regulations, coordination and consultation with the following agencies and organizations were conducted as described below.

Section 7 of the Endangered Species Act

This law requires that actions that are federally funded, authorized or carried out be done in a manner so as to not jeopardize the continued existence of any plant or animal species listed as threatened or endangered, or destroy or adversely modify any designated critical habitat. The Section 7 process involves consultation with either the U.S. Fish and Wildlife Service or the National Marine Fisheries Service depending on the potentially affected species. The following consultation and coordination activities were conducted on behalf of the project (see Appendix B).

- U.S. Department of the Interior, Fish and Wildlife Service (USFWS)
 - August 6, 1998 letter from ParEn, Inc. to USFWS requesting review of avifaunal and feral mammal survey conducted for the project
 - September 23, 1998 letter from USFWS to ParEn, Inc. providing information on possible threatened and endangered species in the project area
 - February 10, 1999 letter from ParEn, Inc. requesting review of the project's Preliminary Draft EA
 - March 11, 1999 letter from USFWS to ParEn, Inc. providing comments on the Preliminary Draft EA

- December 5, 1999 letter from the Federal Highway Administration (FHWA) requesting review of the species list provided in the September 23, 1998 letter
- January 31, 2000 letter from the USFWS to FHWA confirming species list
- March 10, 2000 letter from FHWA to USFWS requesting concurrence on the finding that the proposed project is not likely to cause an adverse effect on federal trust species identified by the USFWS
- April 11, 2000 letter from the USFWS to FHWA concurring with the finding that the proposed project is not likely to cause an adverse effect on federal trust species
- State of Hawaii Department of Land and Natural Resources (DLNR), Division of Forestry and Wildlife (DOFAW)
 - September 11, 1998 letter from ParEn, Inc. to DOFAW requesting review of avifaunal and feral mammal survey conducted for the project
 - September 14, 1998 letter from DOFAW to ParEn, Inc. providing information on potential impacts on Newell's Shearwater (*Puffinus auricularis*)

Section 106 of the National Historic Preservation Act

This law requires that actions that are federally funded, authorized or carried out take into account the effect of such actions on any district, site, building, structure or object that is included in or eligible for inclusion in the National Register of Historic Places (such resources are called historic properties). The Section 106 process involves coordination and consultation the State Historic Preservation Officer, and other agencies and organizations that have an interest in or is mandated to protect historic properties. In addition, the Advisory Council on Historic Preservation is afforded the opportunity to comment on actions that may potentially affect historic properties. The following consultation and coordination activities were conducted on behalf of the project (see Appendix B).

- DLNR State Historic Preservation Division (SHPD)
 - August 6, 1998 letter from ParEn, Inc. to the DLNR State Historic Preservation Division (SHPD) requesting review of the archaeological assessment report prepared for the project
 - August 24, 1998 letter from SHPD to ParEn, Inc. concurring with the findings of the archaeological assessment

- September 9, 1998 and September 24, 1998 letters from ParEn, Inc. to SHPD providing information on project plans to modify Lihue Mill Bridge and Hoomana Overpass Bridge
- October 9, 1998 letter from SHPD to ParEn, Inc. concurring on plans for Hoomana Overpass Bridge, and disagreeing on certain modifications planned for Lihue Mill Bridge
- November 16, 1999 coordination meeting involving FHWA, ParEn, Inc. and Parsons Brinckerhoff (PB) to discuss modifications to Lihue Mill Bridge and consultation requirements per Section 106 regulations
- December 28, 1999 letter from SHPD to PB concurring on list of project Section 106 consulting parties
- March 9, 2000 coordination meeting involving FHWA and PB to discuss upcoming effect determinations on historic properties in the project's Area of Potential Effect (APE)
- State Historic Preservation Officer (SHPO)
 - March 20, 2000 letter from FHWA to the SHPO requesting concurrence on effect determinations on historic properties in the APE
 - March 28, 2000 letter from the SHPO to FHWA concurring with effect determinations
- December 23, 1999 letters from the State of Hawaii Department of Transportation, Highways Division, Kauai District (SDOT) to the following agencies and organizations requesting review of the archaeological assessment prepared for the project and information on historic properties not previously identified:
 - Office of Hawaiian Affairs (OHA)
 - State of Hawaii Department of Hawaiian Homelands
 - Historic Hawaii Foundation
 - Kauai Historic Preservation Review Commission
 - Kauai Hawaiian Civic Club (available address not valid; letter and report returned)
 - Kauai Historical Society.
- January 13, 2000 public information meeting held at Wilcox Elementary School to discuss potential project impacts on historic properties (see Appendix A for meeting summary)
- Office of Hawaiian Affairs (OHA)

- January 14, 2000 letter from OHA to SDOT providing comments on the archaeological assessment
- February 1, 2000 letter from SDOT to OHA responding to comments provided in the January 14, 2000 letter
- Kauai Historic Preservation Review Commission (KHPRC)
 - February 2, 2000 presentation to the KHPRC, requesting information on historic properties in project area
 - February 4, 2000 Memorandum from KHPRC to SDOT providing list of additional historic properties in project area
 - June 14, 2000 Memorandum from KHPRC to PB commenting on the project's Draft Memorandum of Agreement regarding the replacement of the steel railings of Lihue Mill Bridge
- Advisory Council on Historic Preservation (ACHP)
 - June 14, 2000 letter from FHWA to ACHP requesting comments on the project's Draft Memorandum of Agreement regarding the replacement of the steel railings of Lihue Mill Bridge
 - June 22, 2000 letter from ACHP to FHWA declining participation in the consultation to resolve the adverse effect on Lihue Mill Bridge

Section 404 of the Clean Water Act

This law prohibits the discharge of dredged materials into the waters of the U.S., which include non-navigable streams, wetlands and mudflats, unless the U.S. Army Corps of Engineers (USACE) provides a permit. The Section 404 process for this project involved coordination and consultation the USACE, the U.S. Environmental Protection Agency (USEPA) and the USFWS. The following consultation and coordination activities were conducted on behalf of the project (see Appendix B).

- U.S. Department of the Army, Corps of Engineers (USACE)
 - February 10, 1999 letter from ParEn, Inc. to USACE requesting review of the Preliminary Draft EA
 - February 23, 1999 letter from USACE to ParEn, Inc. stating that the project requires a Department of Army permit

- April 7, 1999 meeting involving USACE-Civil Works, FHWA, SDOT, ParEn, Inc. and PB to discuss the delineation of wetlands in the study area
- December 8, 1999 meeting involving USACE-Civil Works, FHWA, SDOT, ParEn, Inc. and PB to discuss Section 404 permitting and consultation requirements in compliance with the National Environmental Policy Act/Section 404 Memorandum of Understanding (MOU)
- December 16, 1999 letter from FHWA to USACE inviting USACE to be a cooperating agency on the NEPA EA
- December 10, 1999 meeting with the U.S. Environmental Protection Agency (USEPA) in accordance with the MOU, involving FHWA, SDOT, ParEn, Inc., and PB, to discuss potential impacts to wetlands in study area
- December 21, 1999 meeting with the USFWS in accordance with the MOU, involving FHWA, SDOT, ParEn, Inc., and PB, to discuss potential impacts to wetlands in study area
- March 2, 2000 agency coordination meeting involving FHWA, SDOT, USACE, USFWS, USEPA, ParEn, Inc. and PB

Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) requires that federal agencies identify and consider the adverse effects of their actions on the preservation of farmland. The FPPA process involves coordination and consultation the Natural Resources Conservation Service. The following consultation and coordination activities were conducted on behalf of the project (see Appendix B).

- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS)
 - January 31, 2000 letter from PB to NRCS requesting land evaluation scores on Form AD-1006
 - February 17, 2000 letter from NRCS to PB providing land evaluation scores on Form AD-1006

5.2 PUBLIC INFORMATION MEETINGS

Two public information meetings were conducted as part of the project's public involvement efforts. The first meeting was held on the evening of March 2, 1999 at the Wilcox Elementary School Cafetorium. Sixteen people attended this meeting. The meeting presentation included a project description, identification of environmental resources along the project and discussion of various widening scenarios. Discussion focused on clarifying project elements. However, suggestions for a new route, instead of widening, were provided (see Appendix A).

The second public information meeting was held on the evening of January 13, 2000 at the Wilcox Elementary School Cafetorium. Fifty-three people attended this meeting. This meeting was held at the recommendation of the SHPD to meet consultation requirements of Section 106. In addition to a project description, the presentation included potential impacts to historic properties, specifically the Lihue Mill Bridge, Hoomana Overpass Bridge and German Hill. Discussion focused mainly on alternatives to maintain access to German Hill (see Appendix A).

5.3 DRAFT ENVIRONMENTAL ASSESSMENT

5.3.1 Availability of Draft Environmental Assessment

The project's Draft EA was announced in the May 8, 2000 edition of the Environmental Notice, which initiated the 30-day public comment period that ended on June 7, 2000. Copies of the Draft EA were mailed to federal, State and County agencies and elected officials who may have an interest in the project (see Table 5-1). In addition, copies of the Draft EA were mailed to affected landowners and Lihue Public Library. All parties who were sent copies of the Draft EA were asked to provide comments.

5.3.2 Public Hearing

A formal public hearing was held on May 25, 2000 between the hours of 6:00 P.M. to 9:00 P.M. at the Wilcox Elementary School Cafetorium. Notice of the public hearing appeared in the MidWeek and The Garden Island Newspaper the week before the hearing. Also, more than 100 governmental agencies, individuals, community and civic organizations, and businesses

**Table 5-1
Summary of Draft Environmental Assessment Coordination and Comments**

Agency or Organization	Received Copy of Draft EA	Provided Comments During Draft EA Comment Period
Federal Agencies		
Army Corps of Engineers	<input type="checkbox"/>	June 6, 2000
Department of the Interior	<input type="checkbox"/>	June 12, 2000
Environmental Protection Agency	<input type="checkbox"/>	
State of Hawaii Agencies		
Department of Business, Economic Development & Tourism, Office of Planning	<input type="checkbox"/>	
Department of Hawaiian Home Lands	<input type="checkbox"/>	May 25, 2000
Department of Health	<input type="checkbox"/>	June 28, 2000
Department of Land and Natural Resources (DLNR)	<input type="checkbox"/>	
DLNR, State Historic Preservation Division	<input type="checkbox"/>	
Office of Environmental Quality Control	<input type="checkbox"/>	June 7, 2000
Office of Hawaiian Affairs	<input type="checkbox"/>	
University of Hawaii, Environmental Center	<input type="checkbox"/>	June 9, 2000
University of Hawaii, Kauai Community College	<input type="checkbox"/>	
County of Kauai Agencies		
Department of Public Works	<input type="checkbox"/>	
Department of Water	<input type="checkbox"/>	May 18, 2000
Planning Department	<input type="checkbox"/>	
Kauai Historic Preservation Review Commission	<input type="checkbox"/>	
Kauai Civil Defense Agency	<input type="checkbox"/>	
Fire Department	<input type="checkbox"/>	
Police Department	<input type="checkbox"/>	

**Table 5-1
Summary of Draft Environmental Assessment Coordination and Comments
(Continued)**

Agency or Organization	Received Copy of Draft EA	Provided Comments During Draft EA Comment Period
Transportation Agency	<input type="checkbox"/>	
Elected Officials		
The Honorable Ezra R. Kanohe, State Representative	<input type="checkbox"/>	
The Honorable Bertha C. Kawakami, State Representative	<input type="checkbox"/>	
The Honorable Hermina Morita, State Representative	<input type="checkbox"/>	
The Honorable Jonathan Chun, State Senator	<input type="checkbox"/>	
The Honorable Avery Chumbley, State Senator	<input type="checkbox"/>	
The Honorable Maryanne W. Kusaka, Mayor of County of Kauai	<input type="checkbox"/>	
The Honorable Ronald Kouchi, County Council Chair	<input type="checkbox"/>	
The Honorable Bryan J. Baptiste, County Council Vice-Chair	<input type="checkbox"/>	
The Honorable Gary Hooser, County Council Member	<input type="checkbox"/>	
The Honorable Daryl Kaneshiro, County Council Member	<input type="checkbox"/>	
The Honorable Billy Swain, County Council Member	<input type="checkbox"/>	
The Honorable James Kunane Takioka, County Council Member	<input type="checkbox"/>	
The Honorable Randal Valenciano, County Council Member	<input type="checkbox"/>	
Landowners		
Grove Farm Company	<input type="checkbox"/>	June 6, 2000
Amfac Sugar Kauai	<input type="checkbox"/>	
Kaunualii Investment Co. and Koamalu Associates	<input type="checkbox"/>	
A.F. Knudsen & Eric A. Knudsen Trust	<input type="checkbox"/>	
Kilohana	<input type="checkbox"/>	

Table 5-1
Summary of Draft Environmental Assessment Coordination and Comments
(Continued)

Agency or Organization	Received Copy of Draft EA	Provided Comments During Draft EA Comment Period
Others		
Kainoa Aki		(3)
Moku Blackstad		(3)
Contractors Association of Kauai		May 25, 2000
David Crawshaw		(2)
Laura Cushnie		(2)
Ralph Cushnie		(2)
Bill Dahle		(3)
Alex Domendea		(3)
Christine Erorita		(3)
William & Aileen Farias		(1)(2)
Marge Freeman		(1)(2)
Lisa Freitas		(3)
Michael H. Furukawa		June 7, 2000
Gregg Gardiner		(2)
The Gas Company		(3)
Tom Godbey		(1)
Sanford G. Higginbotham		June 4, 2000
Monte Hull		(2)
Island School		May 19, 2000
Bill Kane		June 6, 2000
Suzette Kane		June 6, 2000

**Table 5-1
Summary of Draft Environmental Assessment Coordination and Comments
(Continued)**

Agency or Organization	Received Copy of Draft EA	Provided Comments During Draft EA Comment Period
Charlie King		(2)
Paul Kirchner		(2)
Ernie Lau		(1)
Ann Leighton		(1)
Martin Steel Constructors, Inc.		June 7, 2000
Annie McEveety		(3)
Richard McSheehy		May 31, 2000
Abel Medeiros		June 6, 2000
Owen Moe		(1)
Linda Nichols		(1)
Mac Nichols		(1)
Jerry Nishek		(2)
Leland Nishek		(2)
Tracy & Ric Ochoco		(3)
Annie E. O'Malley		June 2, 2000
Fred Reyes		(2)
Roy Takatsuki Construction Services		(3)
Joe Rosa		(2)
Tom Shigemoto		(2)
June B. Stark		June 4, 2000
Karen Taketa		(2)
Treehouse Enterprises		June 1, 2000

**Table 5-1
Summary of Draft Environmental Assessment Coordination and Comments
(Continued)**

Agency or Organization	Received Copy of Draft EA	Provided Comments During Draft EA Comment Period
United Construction Services Incorporated		May 18, 2000
Carol Wilcox		June 7, 2000
Doug Yonegi		(2)

Notes: Received a copy of the project's draft environmental assessment.

Date: Provided a comment letter.

(1) Provided written comments during the May 25, 2000 public hearing using the project's public comment form.

(2) Provided oral comments during the May 25, 2000 public hearing by speaking to the court reporter.

(3) Provided written comments after the May 25, 2000 public hearing using the project's public comment form

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received notice of the public hearing by mail. A record of all attendees was maintained and a handout that included with project information was distributed (see Appendix A).

The format of the public hearing was "open house", as opposed to a "traditional" format where a formal presentation(s) is made, and those wishing to comment on the project "testify" in front of an audience. In an open house format, no formal presentation is made, but information about the project is provided by "science fair" types of displays, and experts are available to answer questions. For this public hearing, poster boards were displayed that provided information on the project's design characteristics, and traffic and environmental impacts. The poster boards provided the following information:

- direction of proposed widening on Kaumualii Highway;
- proposed roadway cross-sections
- cross-section of modified Lihue Mill Bridge
- visual simulation of proposed Lihue Mill Bridge
- proposed Hoomana Road re-alignment
- options considered for the re-alignment of Hoomana Road
- visual simulation of Hoomana Road re-alignment
- year 1998 traffic conditions
- year 2020 traffic conditions without the project
- year 2020 traffic conditions with the project
- summary of environmental impacts
- map of important environmental resources
- map of proposed fill area at Puhi wetlands
- visual simulation of project as the Maluhia Road Tree Tunnel

In addition, staff from SDOT's Right-of-Way Branch was available to answer questions about right-of-way acquisition procedures and relocation assistance for the one residence affected by the project. Since no formal presentation is provided, participants could attend the hearing at any time within the hours stated above.

The hearing was divided into two areas. The first area was the display area where the poster boards were displayed with experts available for discussion. After signing in, participants

were asked to visit the display area, and ask questions of the project staff. The second area was for providing comments. Comment forms were made available, and participants could write their own comments and leave them in the comment drop-off box, or they could take forms home for themselves or others for mailing in later. In addition, a court reporter was stationed in the comment area to transcribe oral comments. After visiting the display area, participants were encouraged to visit the comment area, write their own comments or talk to the court reporter.

5.3.3 Comments

This section provides a record of all comments received during the Draft EA comment period and at the project's public hearing. Forty written statements were received during the Draft EA public comment period, including the written statements received at the project's public hearing. Table 5-1 lists the agencies, organizations and individuals who mailed or provided written comments. Twenty-nine people attended the project's public hearing on the evening of May 25, 2000, and 22 people provided comments in written or oral form (see Table 5-1). Eight people provided written comments using the project's comment form, and 16 people provided oral comments to the court reporter. Two people provided both written and oral comments, which results in the 22 total number of commentators at the hearing, and the 54 total number of commentators overall.

The comments and their associated responses are arranged in the following order, which is the same order in which the commentators are listed on Table 5-1:

- federal agencies
- State agencies
- County agencies
- Land owners affected by the project
- individuals and organizations

Most of the written comments requiring responses were numbered in the left margin. The oral comments that require responses are paraphrased in the response letter from the SDOT. The paraphrasing of oral statements was done for the purpose of brevity, with no intention of

modifying the content of any comment received. Appendix A contains the entire transcript of the oral comments made at the public hearing.

Some of the comments received led to changes in the EA. SDOT and FHWA considered all comments received in determining whether the project will have a "significant impact" (see Chapter 6). The letters responding to the comments were sent in June and July 2000 (see Appendix A).



DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF

June 6, 2000

Regulatory Branch

Mr. Steve M. Kyono, P.E.
District Engineer
Department of Transportation
Highway Division, Kauai District
3060 Eiwa Street, Room 205
Lihue, Hawaii 96766.

Dear Mr. Kyono:

Thank you for the opportunity to review the Draft Environmental Assessment (DEA) for the proposed highway widening of approximately 7.5 miles of Kaunualii Highway located on Kauai, Hawaii. Based on the build alternative identified in the DEA, the following comments are offered:

1 a) A Department of the Army permit under Section 404 of the Clean Water Act will be required for the discharge of dredged or fill material into waters of the U.S. This includes the impacts to the 0.25 acre wetland identified along the highway widening.

b) In addition, a compensatory mitigation plan for the discharge of fill material into the wetland will be required. Please consult with our office for details required in the plan.

2 c) If there should there be any engineering refinement during the final design phase which impacts more than the wetland acreage identified in the DEA, you should consult with our office for further permit requirements.

Should you have any questions or need additional information, you may contact Ms. Lolly Silva of my staff at (808) 438-7023 or by FAX at (808)438-4060.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch

RECEIVED
ENGINEER DISTRICT - KAUAI
2000 JUN -8 A M 18

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000689

July 5, 2000

Mr. George P. Young, P.E.
Chief, Regulatory Branch
Department of the Army
U.S. Army Engineer District, Honolulu
Ft. Shafter, Hawaii 96858-5440

Dear Mr. Young:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii
Project Number 50DE-02-95
Environmental Assessment (EA)

Thank you for your comments on the Draft EA for our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments, which have been numbered. We would like to provide the following responses to these comments.

1. Section 4.7.3 of the EA states that the proposed 0.1 ha (0.25 acres) wetland fill will be covered under a Nationwide permit. Section 4.7.5 of the EA states that this wetland loss will be replaced at a location probably upstream from the existing wetland, at a ratio of at least one to one.
2. You or your staff will be notified if during final design we determine that the project will fill more wetlands than what is reported in the EA.

We will be rendering a Finding of No Significant Impact (FONSI) for this project, and will be completing the project's Final EA. Please let me know if you would like a copy of the Final EA/FONSI.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. YOUNG, P.E.
District Engineer

SM:es
Encl.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Ecoregion
300 Ala Moana Boulevard, Room 3-122
Box 50088
Honolulu, Hawaii 96850

RECEIVED
...Y... KAUAI

2000 JUN 15 A 11:57

JUN 12 2000

In Reply Refer To: GCS

Mr. Steven M. Kyono, P.E.
District Engineer
Hawaii Dept of Transportation, Highways Division
3060 Eiwa St, Rm. 205
Lihue, HI 96766

Re: Improvements to Kaunualii Highway, Lihue to Maluhia Rd., Project No. 50DE-02-95

Dear Mr. Kyono:

The U.S. Fish and Wildlife Service (Service) has reviewed the April 2000 Draft Environmental Assessment (DEA) for Improvements to Kaunualii Highway, Lihue to Maluhia Road, Kauai. The project sponsor is the State of Hawaii's Department of Transportation. The Service offers the following comments for your consideration.

GENERAL COMMENTS

The Service provided comments for previous drafts of this document (see Appendix B). Initial Service concern focused primarily on aquatic habitats that potentially could be used by endangered waterbirds, especially wetlands. This revised DEA adequately addresses those concerns by including the information derived from the Army Corps of Engineers (ACOE) Civil Works Branch field surveys to delineate wetlands and determine the extent of jurisdictional waters in the project area. As a result of the wetland delineations and discussions with the Service, ACOE, and the U.S. Environmental Protection Agency (USEPA), potential impacts caused by fill in wetlands and endangered waterbird habitat have been minimized. Puhi Wetland may be impacted by filling 0.25 acre of jurisdictional wetland. The proposed fill will be permitted through an ACOE Nationwide Permit. This permanent loss of wetland habitat may be offset through the expansion of the existing wetland upstream of the proposed fill and through preservation of the hydraulic conditions of the downstream end of the wetland (currently a two-foot-high by four-foot-wide box culvert under the existing highway). The Service notes that only the area of potential impact in Puhi wetland was delineated by the ACOE, and the total areal extent of the wetland was not surveyed. The Service recommends that the total acreage of Puhi Wetland be delineated and mapped prior to finalization of the mitigation plan.

SPECIFIC COMMENTS

Figure 3-1, page 3-2.

2 | The Hawaiian Humane Society is shown on the mauka (south) side of the highway. It should be shown on the makai (north) side of the road.

Section 3.7.1. Surface Waters, page 3-26.

The fundamental distinction between natural watercourses (streams, gulches) and man-made water conveyance structures (irrigation ditches, excavated roadway drainage) is blurred in the description of surface waters, for example:

3 | The statement: "Also, some of these streams are currently or have been used for irrigation" should read: "Also, some of the water in these streams is currently or has been diverted into ditches for irrigation."

In reference to a "tributary" of Puuli Stream, the statement: "This tributary is an agricultural ditch that appears to be part of a natural stream system" is contradictory and should be changed to more accurately describe this surface water feature.

Section 3.7.3. Wetlands, page 3-32.

4 | "Swordtails" is one word.

Section 3.8.1. Flora, page 3-32.

5 | The vegetation grouping: "unused native lands" is misleading because it inadvertently implies the existence of intact, undisturbed communities of native vegetation, which is not the case based on the botanical survey included in previous drafts of the DEA. This terminology should be replaced with a more accurate descriptive category such as "undeveloped non-agricultural lands".

Section 3.8.2. Fauna, page 3-35.

6 | The word "o'opu" should not be capitalized
The species name "*Awaous guamensislll*" should be corrected to "*Awaous guamensis*".
The word "O'opu-napili" should be changed to "o'opu nopili".

Mr. Mr. Steven M. Kyono, P.E.

Page 3

*Section 3.8.3. Threatened and Endangered Species, page 3-36, and
Section 5.1 Scoping Activities, page 5-3*

7 | Please reference the April 11, 2000, letter from the Service to the U.S. Department of Transportation indicating concurrence with a "not likely to adversely affect" determination under an informal ESA section 7 consultation for threatened and endangered species in the project area.

Section 4.7.1 Surface Water, page 4-21

8 | The impact of roadway-related pollutants is described to be the same under the Build and No Build Alternatives. This is based upon the interpretation that total vehicle-miles traveled (VMT) would be the same under either alternative even though the project will double the number of lanes. However, there is no supporting documentation regarding the estimates of VMT under either alternative in the DEA or in any of the appendices. Because traffic congestion has shown continuous increase in the Hawaiian Islands over the recent past despite improvements to road capacities, the basis for the above conclusion regarding the impact of roadway-related pollutants is not supported. The Service recommends that supporting documentation be included or that this impact be reassessed.

9 | Under the Build Alternative, land surface will be paved to provide additional highway lanes. This will increase the total acreage of impermeable surface in the watersheds that the highway transects. An increase in the amount of impermeable area in a watershed will change the nature of surface water movement. Usually, high flow events become more frequent and more severe as impermeable surface area increases in a watershed. This can lead to excessive erosion, and can accelerate the transport of sediment and other materials to receiving waters. In the DEA, there is no discussion of the impact of the increase in impermeable surfaces to waterbodies in the project area.

CONCLUSION

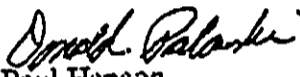
10 | The ACOE wetland delineation survey was a unique multiagency effort that resulted in an in-depth description of the extent and nature of jurisdictional wetlands and "waters of the U.S." in the project area. The Service appreciates the incorporation of the survey results into the analysis of habitat impacts in the DEA. Through consideration of the information collected during the survey and minor realignment of the proposed transportation corridor, unnecessary impacts to wetlands (Weoweopilau Wetland in particular) have been avoided. However, we believe that the potential for roadway-related contamination from increased vehicle traffic and stormwater runoff

Mr. Mr. Steven M. Kyono, P.E.
Page 4

11 have not been adequately addressed. Thus, the service cannot support a Finding Of No Significant Impact (FONSI) for the proposed project at this time. We recommend that the impact analysis section in the DEA be improved by expanding the discussion and assessment of surface runoff in the Final Environmental Assessment. Provided that the final document adequately supports the conclusion that these impacts have been minimized to the greatest practicable extent, the Service would concur with a FONSI determination for the proposed project.

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

Sincerely,


for Paul Henson
Field Supervisor
Ecological Services

CC: DAR, Kauai
DAR, Honolulu
DOFAW, Kauai
DOFAW, Honolulu
DOH - CWB
DBEDT - CZM
USEPA, Honolulu
ACOE, Honolulu

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000678

July 5, 2000

Mr. Paul Henson, Field Supervisor
U.S. Department of the Interior
Fish and Wildlife Service
Pacific Islands Ecoregion
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawaii 96850

Dear Mr. Henson:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii
Project Number 50DE-02-95
Environmental Assessment (EA)

Thank you for your comments on the Draft EA for our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments, which have been numbered. We would like to provide the following responses to these comments.

1. If information on the total area of Puhi Wetland is required to obtain the Section 404 permit, then we will delineate the entire wetland.
2. The location of Hawaiian Humane Society was incorrectly placed on Figure 3-1 of the Draft EA. This will be corrected in the Final EA.
3. Section 3.7.1 will be revised in the Final EA to improve the description of the differences between natural watercourses and man-made water conveyance structures. With regards to the examples given, these statements will be revised in the Final EA.
4. This mistake will be corrected in the Final EA.

5. Section 3.8.1 will be revised in the Final EA to change the phrase "unused native lands" to "undeveloped non-agricultural lands" as recommended.
6. The names of these species will be corrected in the Final EA.
7. Reference to the April 11, 2000 letter will be included in Sections 4.8.3 and 5.1 of the Final EA. We do not intend to reference this letter in Section 3.8.3 because this section references earlier consultation with the Service to identify potentially affected Federal Trust species.
8. The statement in Section 4.7.1 of the EA that VMT will be the same under Build and No Build Alternatives is supported by the traffic impact assessment report prepared for this project (please see Appendix C of the EA). As described in Section 4.4.1.1 and Figures 4-2 and 4-3 of the EA, traffic volumes on Kaumualii Highway are predicted to be the same regardless of whether the project proceeds. Therefore, VMT is forecast to be the same or similar under the Build and No Build Alternatives. (Since the completion of the Draft EA, the traffic report has been revised, and the volumes and turning movements have been changed slightly. However, the traffic volumes under the Build and No Build Alternatives are still forecast to be the same. The Final EA will report the results of the revised traffic impact assessment report.)
9. Section 4.7.1 will be revised in the Final EA to discuss the potential impacts of creating additional impervious roadway surface in the regional watershed. Section 4.7.5 will be revised to include mitigation to prevent or minimize excessive erosion along the highway, and maintain existing drainage patterns. The amount of additional highway surface, which includes lanes, shoulders, and sidewalks, but not the median and adjacent grading, will total approximately 16 hectares (40 acres). Spread over a distance of 12 kilometers (7.5 miles), this amount is a very small in comparison to the size of the total regional watershed. The highway drainage system will be designed to prevent or minimize excessive erosion, and every effort will be made to maintain existing surface water movements. For example, as reported in Section 4.7.4 of the EA, hydraulic analysis indicate that the project is not expected to change the base flood elevations at Nawiliwili and Huleia Streams.

Mr. Paul Henson, Field Supervisor
Page 3
July 5, 2000

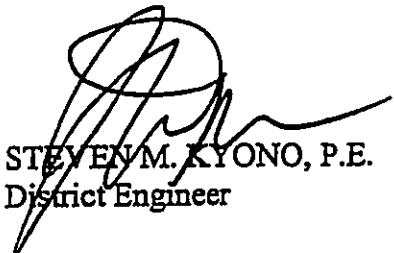
HW-KE 4.000691

10. In the case of this specific project, we do not believe that the impacts of roadway-related pollutants entering surface waters, or the creation of additional stormwater runoff from increased highway surface area, are impacts that rise to the level of "significant" as defined under federal regulation. As described in our response to comment #8, VMT will be the same under the Build and No Build Alternatives. Therefore, the level of potential roadway-related water pollutants, which scales to VMT, will be similar under either Alternative. As described in our response to comment #9, the amount of additional highway surface provided by the proposed project will be very small in comparison to the area of the watershed over the 12 kilometers (7.5 miles) length of the project. In addition, mitigation will be implemented to maintain existing surface water movements and prevent excessive erosion.
11. The Final EA will be revised to clarify the potential impacts and corresponding mitigation measures with regards to these two issues.

We will be rendering a Finding of No Significant Impact (FONSI) for this project, and will be completing the project's Final EA. Please let me know if you would like a copy of the Final EA/FONSI.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,



STEVEN M. KYONO, P.E.
District Engineer

SM:es
Encl.

BENJAMIN J. CAYKIANI
GOVERNOR
STATE OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOMELANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

RAYNARD C. SOON
CHAIRMAN
HAWAIIAN HOMES COMMISSION

JUDIS M. K. M. YAMAGUCHI
DEPUTY CHAIRMAN

May 25, 2000

To: The Honorable Kazu Hayashida, Director
Department of Transportation

Attn: Steven Kyono, Kauai District Engineer
Highways Division

From: Raynard C. Soon, Chairman
Hawaiian Homes Commission

Daniel Ornellas

Subject: Improvements to Kaunualii Highway, Lihue to Maluhia
Road, Project No. 50DE-02-95, Lihue, Kauai, Dated
April, 2000

Thank you for the opportunity to review the subject application.
The Department of Hawaiian Home Lands has no comment to offer.

If you have any questions, please call Daniel Ornellas of our
Planning Office at 586-3836.

2000 MAY 26 A 11:30

RECEIVED
HOMES - KAUAI

BENJAMIN J. CAYETANO
GOVERNOR



KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

IN REPLY REFER TO:
HWY-KE 4.000672

July 5, 2000

Mr. Raynard Soon, Chairperson
Department of Hawaiian Home Lands
P.O. Box 1879
Honolulu, Hawaii 96805

Dear Mr. Soon:

**Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii
Project Number 50DE-02-95
Environmental Assessment (EA)**

Thank you for your review of the Draft EA for our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway.

We will be rendering a Finding of No Significant Impact (FONSI) for this project, and will be completing a Final EA. Please let me know if you would like a copy of the Final EA/FONSI.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,

A handwritten signature in black ink, appearing to be "S. M. Kyono".

STEVEN M. KYONO, P.E.
District Engineer

SM:es

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



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

RECEIVED
ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH
KAUAI

2000 JUL -5 P 1:03
In Reply, please refer to:
File:

June 28, 2000

00-083/epo

Mr. Steven M. Kyono, P.E.
District Engineer
Highways Division
State Department of Transportation
Kauai District
3060 Eiwa Street, Room 205
Lihue, Kauai 96766

Dear Mr. Kyono:

Subject: Draft Environmental Assessment (DEA)
Improvements to Kaunualii Highway
Lihue to Maluhia Road (Project No. 50DE-02-95)
Kauai

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

Control of Fugitive Dust

There is a significant potential for fugitive dust emissions during the construction activities. Implementation of adequate dust control measures during all phases of construction is warranted.

Construction activities must comply with provisions of Hawaii Administrative Rules, Chapter 11-60.1, "Air Pollution Control," Section 11-60.1-33, Fugitive Dust.

The contractor should provide adequate measures to control dust from the road areas and during the various phases of construction. These measures include, but are not limited to:

- a. Planning the different phases of construction, focusing on minimizing the amount of dust generating materials and activities, centralizing on-site vehicular traffic routes, and locating potentially dusty equipment in areas of the least impact;
- b. Providing an adequate water source at the site prior to start up of construction activities;

- c. Landscaping and rapid covering of bare areas, including slopes, starting from the initial grading phase;
- d. Controlling of dust from shoulders and access roads;
- 1 e. Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and
- f. Controlling of dust from debris being hauled away from project site.

If you have any questions regarding these issues on fugitive dust, please contact the Clean Air Branch at 586-4200.

Noise Concerns

1. Activities associated with the construction phase of the project must comply with the Department of Health's Administrative Rules, Chapter 11-46, "Community Noise Control."
 - a. The contractor must obtain a noise permit if the noise levels from the construction activities are expected to exceed the allowable levels of the rules as stated in Section 11-46-6(a).
 - 2 b. Construction equipment and on-site vehicles requiring an exhaust of gas or air must be equipped with mufflers as stated in Section 11-46-6(b)(1)(A).
 - c. The contractor must comply with the requirements pertaining to construction activities as specified in the rules and the conditions issued with the permit as stated in Section 11-46-7(d)(4).
2. Heavy vehicles traveling to and from the project site must comply with the provisions of the Administrative Rules, Chapter 11-42, "Vehicular Noise Control for Oahu."

Should there be any questions on this matter, please call Mr. Russell Takata, Environmental Health Program Manager of the Noise, Radiation and Indoor Air Quality Branch at 586-4701.

Water Pollution

- 3 1. A National Pollutant Discharge Elimination System (NPDES) general permit is required for the following discharges to waters of the State:

Mr. Steven Kyono
June 28, 2000
Page 3

00-083/epo

- 3
- a. Storm water discharges relating to construction activities, such as clearing, grading, and excavation, for projects equal to or greater than five acres;
 - b. Storm water discharges from industrial activities;
 - c. Construction dewatering activities;
 - d. Noncontact cooling water discharges less than one million gallons per day;
 - e. Treated groundwater from underground storage tank remedial activities;
 - f. Hydrotesting water;
 - g. Treated effluent from petroleum bulk stations and terminals; and
 - h. Treated effluent from well drilling activities.

Any person requesting to be covered by a NPDES general permit for any of the above activities should file a Notice of Intent with the Department's Clean Water Branch at least 30 days prior to commencement of any discharge to waters of the State.

Any questions regarding these comments should be directed to Mr. Denis Lau, Branch Chief, Clean Water Branch at 586-4309.

Sincerely,



Gary Gill
Deputy Director
for Environmental Health

c: CWB
NRFAQ
CAB

HWY-KE 4.000720

July 12, 2000

Mr. Gary Gill
Deputy Director
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Mr. Gill:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii
Project Number 50DE-02-95
Environmental Assessment (EA)

Thank you for your comments on the Draft EA for our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments; which have been numbered. We would like to provide the following responses to these comments.

1. We agree that substantial fugitive dust emissions can occur at construction sites. Therefore, we are committed to implementing dust control measures, which are described in Section 4.13.2 of the EA. We will consider other measures mentioned in your letter that were not included in Section 4.13.2, such as providing adequate dust control measures during weekends, and before and after daily construction activities.
2. As is described in Section 4.13.3 of the EA, construction activities will comply with Section 11-46 of the Hawaii Administrative Rules (HAR), "Community Noise Control". At this time, we do not anticipate that construction activities will require a noise permit. HAR Section 11-42 appears to apply only on Oahu. Nevertheless, heavy vehicles involved in construction activities will all be required to be equipped with mufflers, in accordance with the Community Noise Control regulations. Therefore, they would most likely comply with the provisions specified in Section 11-42.

Mr. Gary Gill
Page 2
July 12, 2000

HWY-KE 4.000720

3. As described in Section 4.14 of the EA, the project will require an NPDES permit because clearing, grading and excavation areas will be greater than five acres, and dewatering may be required. We will comply with your Department's Notice of Intent requirement.

We will be rendering a Finding of No Significant Impact (FONSI) for this project, and will be completing the project's Final EA. Please let me know if you would like a copy of the Final EA/FONSI.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,

GLENN YAMAMOTO, P.E.
Acting District Engineer

SM:es
Encl.

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BENJAMIN J. CAYETANO
GOVERNOR



GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4188

June 7, 2000

Mr. Kazu Hayashida, Director
Department of Transportation, State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813


Dear Mr. Hayashida:

We have reviewed a draft environmental assessment (DEA) for the Kaunualii Highway Improvements, Lihou West of Maluhia Road and offer the following comments for your consideration and response.

1. *Need for an EIS:* Please find attached our letter of April 17, 2000, outlining our view that the project requires an environmental impact statement.
2. *Cultural Impacts:* Please consider the cultural impacts of the proposed action. Will polluted runoff from increased vehicular traffic on the improved road affect persons or operations hydrogeologically downgradient and involved in taro cultivation, nearshore gathering of limu/opihi/'opae or salt harvesting? Will an increase in road traffic place soot from auto exhaust on ferns and other plants gathered nearby the roads for medicinal purposes? Are there nearby cultural or religious sites which may be affected by the proposed improvements? Please find enclosed for your use a copy of the Environmental Council's cultural impact assessment guidelines.

Should you have any questions, please call Leslie Segundo of my staff at 586-4185.

Sincerely,


GENEVIEVE SALMONSON
Director

Enclosures

c: Mr. Abraham Wong, FHWA
Mr. Steve Kyono, DOT

RECEIVED
2000 JUN -9 A 11:10

BENJAMIN J. CAYETANO
GOVERNOR



GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

236 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4186
FACSIMILE (808) 586-4186

April 17, 2000

Honorable Kazu Hayashida, Director
Department of Transportation, State of Hawai'i
860 Punchbowl Street
Honolulu, Hawai'i 96813

Dear Mr. Hayashida:

We have received a joint Federal-State draft environmental assessment (DEA) for the Kaumuali'i Highway Improvements, transmitted by your Kaua'i Highways Division's memorandum of March 24, 2000, HWY-KE 4.000254).

We understand that your agency is proposing two alternatives.

The first, a "no-build" alternative, consists of improvements listed in a 1997 draft environmental assessment for the "Kaua'i Long-Range Land Transportation Plan" (which we have not yet received for publication in the Environmental Notice). These improvements include: (1) the Poipu Nawiliwili Connector Road (a new two-lane roadway makai of the existing Kaumuali'i Highway); (2) the Lihu'e Hanamaulu Bypass Road (a new four-lane divided roadway); (3) Nuhou Road (a new four-lane undivided roadway between Puhi Road and Nawiliwili Road; (4) East Koloa-Poipu Bypass Road (widen to a four-lane undivided roadway between the proposed Poipu-Nawiliwili Connector Road and Poipu Road; and, (5) Poipu Road (widen a four-lane divided roadway between Lawa'i Road and the East Koloa-Poipu Bypass Road.

The second, a "build" alternative, consists of: (1) the conversion of a 7.5 mile section of Kaumuali'i Highway between Kuhi'o Highway in Lihu'e to a point 4,400 feet west of Maluhia Road from a two-lane undivided roadway to a four-lane divided roadway.

Having reviewed this draft environmental assessment we do not believe that an anticipated Finding of No-Significant Impact is warranted. For reasons set forth below, we respectfully urge that you revise this environmental assessment and resubmit it to us at your earliest convenience as an Environmental Impact Statement Preparation Notice.

1. THE PROJECT HAS POTENTIAL IMPACTS ON HISTORIC RESOURCES, ENDANGERED AND NATIVE SPECIES, WETLAND RESOURCES, AND SURFACE WATERS

While we recognize that widening will be done on either the north or south sides of the highway to avoid direct impacts to: wetlands; the Maluhia tree tunnel; the head shaft of a sugarcane conveyor that crosses Kaumuali'i Highway; Lihu'e Mill storage building; Lihu'e Public Cemetery; County Department of Water baseyard facility; businesses in Puhi (including the historic Grove Farm office building, Kaua'i Nursery and a Brewer Environmental Industries establishment), the magnitude of the project is such that there may be potential significant indirect and cumulative effects on historic resources (such as the Lihu'e Mill and Huleia Bridges), on wetland resources, on surface waters (such as the Nawiliwili Stream, and the Huleia Stream), on federally endangered species (such as

Honorable Kazu Hayashida, Director
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Newell's shearwater (*Puffinus auricularis*), the Hawaiian duck (*Anas wyvilliana*), the Hawaiian stilt (*Himantopus mexicanus knudseni*), the , Hawaiian coot (*Fulica alai*), and the Hawaiian moorhen (*Gallinula chloropus sandvicensis*), and native species (such as the 'o'opu nakea (*Awaous guamensisii*), and the 'o'opu nopili (*Sicyopterus stimpsoni*)). Section 3.8.2 of the draft environmental assessments notes that "[n]ative macrofaunal species were only found in stream segments several miles downstream from Kaunualii Highway, which suggests that some limited, low-level recruitment is occurring despite severely degraded conditions."

2. THE PROJECT PROPOSES TO MODIFY AN EXISTING HISTORIC BRIDGE

Section 6.1 of the DEA notes that "the proposed project would not cause the loss or destruction of any natural or cultural resource" [underscoring added] because "natural processes" and not the project itself is "causing" the loss or destruction of the bridge. We respectfully disagree. The proposed modifications of the existing bridges to meet current design and safety standards is contributing to the "loss" of the historic bridge through modification of its historic character. Table 4-4 shows that the Federal Highway Administration determined under Section 106 of the National Historic Preservation Act of 1966 that the proposed project would have an "adverse effect" on the Lihu'e Mill Bridge.

3. THE PROJECT HAS EIGHT CROSSINGS OF STREAMS AND MAJOR IRRIGATION DITCHES

In a September 30, 1998, letter, the Commission on Water Resource Management noted that the project may need to procure a stream channel alteration permit and petition to amend the interim instream flow standard for affected streams. The Commission also noted that road cutting at the end of Ha'upu Ridge may cut through dike structures, but impacts are unknown. If ground water is encountered, the Commission recommended that expeditious bulkheading take place to reseal the exposed compartments with subsequent notice given to the Commission of such an occurrence.

The U.S. Fish and Wildlife Service (FWS) noted that the water collected in the watershed traversed by the proposed improvements may have potential impacts on water quality in Huleia Stream and the region downstream near Huleia National Wildlife (which was established to provide endangered waterbird habitat). The FWS also noted that the DEA should address potential indirect impacts such as changes in hydrology or potential increases in road-related contaminants (i.e., oil, grease runoff) that may wash into Huleia Stream and tributaries that feed into the Papakolea Stream. Section 4.7.1 notes that the level of roadway pollutants entering surface waters due to roadway runoff would likely be the same under the Build and No Build Alternatives because total vehicle-miles travelled, an indicator of roadway related pollution, would be the same under both alternatives. While we are in no position to evaluate the technical merits of this inference, we do note that the DEA acknowledges that the number of vehicle-miles travelled would increase as population and tourism increase. It is thus reasonable to expect that the roadway pollutants entering surface waters will increase, and hence, have a potential impact on downstream areas such as the Huleia National Wildlife Refuge.

4. THE PROJECT MAY IMPACT WETLAND AREAS

The draft environmental assessment identifies four potential wetland areas. The discussion in Chapter 3, Affected Environmental does not provide sufficient detail as to the physico-chemical and biological nature of these wetland areas. The Chapter contains extensive discussion on what constitutes "jurisdictional" or federally-regulated wetlands. Chapter 4, Environmental Consequences notes that one jurisdictional wetland is expected to be impacted by having approximately 0.25 acres filled, thus requiring a Department of the Army nationwide permit and a Section 401 Water Quality Certification from the Department of Health.

Honorable Kazu Hayashida, Director
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5. CULTURAL IMPACT ASSESSMENT UNDER CHAPTER 343, HRS GUIDELINES

We remain gravely concerned about your February 1, 2000, agency response to the Office of Hawaiian Affairs (HWY-KE-4.000088) wherein your agency states: *"We have carefully considered your suggestion that the report be revised to include research on the Hawaiian occupation and use of lands from Koloa to Lihu'e and beyond what is presented in the report. Although such information, if obtainable, would be interesting, we feel that such research would be beyond the scope of this exercise, which is to make a good faith effort to identify and assess the impact on historic properties in the project's area of potential effect. Unless specific evidence is provided to us that would indicate that research conducted to date has missed a potential historic property, we plan to rely on the results of the report as well as public and agency consultation to identify historic properties."*

Chapter 343, Hawai'i Revised Statutes, requires the assessment of an actions social impacts, among other things. Because social impacts are intimately interwoven into the fabric of history and culture, past practice in preparing environmental assessment focused almost exclusively on the historic-archaeological aspects of social impact assessment, with almost no attention given to the cultural aspects of social impact assessment.

In response to the 1996 Supreme Court decision entitled *Public Access Shoreline Hawai'i v. County of Hawai'i et alia*, and citizen concern about neglect in assessing impacts of a proposed action on cultural resources (such as burials, gathering rites, significant cultural sites, cultivation practices) by agencies having an erroneous interpretation that archaeological and historical documentation was sufficient for the purposes of Chapter 343, HRS environmental review, the Environmental Council of the State of Hawai'i in 1997, set forth a policy entitled *"Guidelines for Assessing Cultural Impacts."* A copy of these guidelines is enclosed for your use. We would urge you to examine the potential cultural impacts of your proposed action. Some questions to consider include the following. Will polluted runoff from increased vehicular traffic on the improved road affect persons or operations hydrogeologically downgradient and involved in taro cultivation, nearshore gathering of limu/opihi/'opae or salt harvesting? Will the increase in road traffic place soot from auto exhaust on ferns and other plants gathered nearby the roads for medicinal purposes? Are there nearby religious or cultural sites which may be affected by the proposed improvements? These questions cannot be answered in a vacuum. The enclosed guidelines provide a systematic approach to an assessment of cultural impacts. The first step to obtain information on cultural impacts is to meet with the community. The Office of Hawaiian Affairs, the Island Burial Council and the Hawaiian Civic Clubs are excellent sources of information as to who to contact in the community concerning gathering sites, religious and cultural sites, and burial sites. We urge you to follow the enclosed guidelines in assessing cultural impacts.

6. THE PROJECT'S BUILD ALTERNATIVE IS ESTIMATED TO COST \$75-\$110 MILLION

Section 2.3 notes that the estimated cost of the build alternative in year 2000 dollars is between \$75 and \$110 million which is a significant expenditure of public funds. The project schedule indicates that implementation will occur in a minimum of three phases, with the road open for service in 2005.

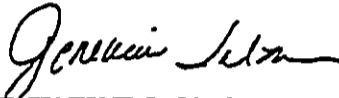
Considering the cumulative effects of all of the above, it is our belief that the proposed project clearly requires an environmental impact statement. We urge you to consult again with the State Historic Preservation Division, the U.S. Fish and Wildlife Service, the Department of Land and Natural Resources' Division of Forestry and Wildlife and its Commission on Water Resource Management, as well as the Office of Hawaiian Affairs and the Kaua'i Island Burial Council, and native Hawaiian organizations, and revise the environmental assessment and resubmit it as a final environmental assessment/environmental impact statement preparation notice. This will initiate a thirty-day public consultation period on specifying the scope of the draft environmental impact statement. A public

Honorable Kazu Hayashida, Director
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hearing to receive comments during this period may be held to promote a dialogue between the community, the above identified agencies and organizations, the Federal Highway Administration and your agency. Up-front consultation and dialogue will promote more information exchange and consensual decision-making.

We would be very open to the possibility of meeting with you, the Federal Highway Administration and your consultant on our concerns regarding this project. Please call me or my Environmental Health Specialist, Les Segundo, at (808) 586-4185 if you would like to pursue this possibility or if you have any questions.

Sincerely,



GENEVIEVE SALMONSON
Director

- c: Mr. Steven Kyono, Kaua'i Office, Highways Division, DOT
Mr. Abraham Wong, Federal Highways Administration
Dr. David Atkin, Parsons Brincherhoff Quade and Douglas
Dr. Donald Hibbard, State Historic Preservation Division, DLNR
U.S. Fish and Wildlife Service, Honolulu
Mr. Michael Buck, Division of Forestry and Wildlife, DLNR
Commission on Water Resource Management, DLNR
Office of Hawaiian Affairs
Kaua'i Island Burial Council

HWY-KE 4.000587

June 21, 2000

TO: MS. GENEVIEVE SALMONSON, DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
DEPARTMENT OF HEALTH

FROM: KAZU HAYASHIDA *K. H.*
DIRECTOR OF TRANSPORTATION

SUBJECT: IMPROVEMENTS TO KAUMUALII HIGHWAY, LIHUE TO WEST OF
MALUHIA ROAD, ISLAND OF KAUAI, HAWAII
PROJECT NO. 50DE-02-95
ENVIRONMENTAL ASSESSMENT (EA)

Thank you for your comments on the Draft EA for our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Your June 7, 2000 letter contained two comments: (A) the project should prepare an environmental impact statement (EIS); and (B) the cultural impacts of the project should be considered. We would like to provide the following responses to these two comments:

- A. The first comment references your April 17, 2000 letter that communicated disagreement with our anticipated Finding of No Significant Impact (FONSI) determination. In this letter you asked that we prepare an EIS Preparation Notice. Shortly after meeting with you and your staff on April 26, 2000, which included representatives from the Office of Hawaiian Affairs (OHA) and the University of Hawaii Environmental Center, we responded in a letter dated April 27, 2000 that we still believe the anticipated FONSI to be appropriate. We have received no new information during the Draft EA comment period that would influence us to change this position. Therefore, we intend to declare a FONSI.

Responses to your specific comments in the April 17, 2000 letter are provided below. These responses are numbered in accordance to the numbering provided in that letter.

1. Other than the direct impacts to the historic Lihue Mill Bridge and a wetland just west of Puhi (see discussions below), we do not anticipate that the project will cause direct or indirect impacts, much less significant impacts, to other historic properties and wetlands, federal trust and native species, and water resources.

Please see the EA section regarding these environmental resources. Therefore, the cumulative impacts of the project to these environmental resources will be limited only to the direct impacts to Lihue Mill Bridge and the Puhi wetland, and in our opinion, these impacts are not cumulatively significant.

2. In accordance with Section 106 of the National Historic Preservation Act, the Federal Highway Administration rendered an "adverse effect" determination on Lihue Mill Bridge, with which the State Historic Preservation Officer concurred. However, an "adverse effect" on an historic property does not necessarily constitute a "significant" impact. Such assessments must be made on a case-by-case basis. In this case, we believe the impact to Lihue Mill Bridge is not significant. The railings are already in a severe state of disrepair, and they would have to be replaced regardless of whether the Build Alternative proceeds. Because of the "adverse effect" determination, a Memorandum of Agreement will be signed, which will stipulate historical documentation requirements. After the implementation of mitigation measures, we do not believe the adverse effect will be significant.
3. The project will maintain the drainage characteristics of all the stream and irrigation ditches crossing the highway. Therefore, wetlands downstream of the project, such as those in Koloa and Huleia National Wildlife Refuge, will not be affected. The need for stream alteration permits does not necessarily mean that the project will have a significant impact.

Regarding the Haupū Ridge comment from the Commission on Water Resource Management, we believe this potential impact is not significant because we will work with the Commission to mitigate any impacts to dike structures.

Regarding the increase in non-point source pollution, the OEQC is correct to note that residents and tourism are major causes of such pollution. The projected increase in VMT will not be caused by the Build Alternative. It would be caused by regional growth with or without the project. Therefore, no pollution impact will occur because of the project.

4. After extensive efforts to minimize the wetland impacts of the project, including thorough coordination with the U.S. Army Corps of Engineers (USACE), the U.S. Environmental Protection Agency (USEPA) and the U.S. Fish and Wildlife Service (USFWS), which is documented in the EA, we made the decision to proceed with the proposed filling of approximately a quarter-acre of wetlands just west of Puhi to avoid displacing businesses in Puhi. This decision was also influenced by the

fact that this wetland does not function as a habitat for endangered waterbirds or other important species, which the USFWS agreed. The USACE stated that this wetland functions as a sediment trap, groundwater recharge and flood storage area, and appears to have been created by an inadequate culvert serving the east fork of Puhi Stream, the water source of this wetland. The wetland impacts will be covered under an existing Nationwide Section 404 permit from the USACE. Consultation with the USACE, the USEPA, and the USFWS indicated that the project would only be required to replace the filled wetlands on a one-to-one ratio because of the wetland's limited functions. We are committed to replacing the area of wetlands that will be filled at a one-to-one ratio. For the reasons described here, it is our opinion that the quarter-acre filling of the Puhi wetland is not a significant impact.

5. "Historic Property" is a general term that includes traditional cultural properties (TCP) (see National Register Bulletin 38, Guidelines for Evaluating and Documenting Traditional Cultural Properties, 1994). Therefore, when we requested information from agencies and organizations regarding historic properties, we were also asking for information on potential TCPs in the project area, such as the types of cultural resources listed in your letter. Information about our coordination activities appears in the EA. Since we did not receive any information regarding cultural practices or resources, we did not pursue further study on this matter during the preparation of the Draft EA. Nevertheless, since OHA expressed concerns regarding potential impacts to TCPs during the April 26, 2000 meeting, we decided to conduct a cultural impact assessment despite the results of our scoping activities. We are expecting the report to be completed by the end of June. Any notable results will be reported in the Final EA.

We do not understand the nature of your concern regarding our response to the request of OHA for additional research on the Hawaiian occupation of the project area before western contact. We felt that such information would not help in identifying TCPs in the project area because of what has occurred in the area since western contact.

6. The Significance Criteria specified in HRS Section 11-200-12(b) do not include a cost criterion. Just because a project is perceived to be costly does not in itself trigger a significant impact. We prefer that the question of significance be limited to environmental and social issues.

GENEVIEVE SALMONSON, DIRECTOR
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- B. In response to your second comment (of your June 7, 2000 letter): Please refer to comment #5 above.**

To reiterate our position and intention, we will be rendering a Finding of No Significant Impact (FONSI) for this project. As such, we will proceed towards completing the Final Environmental Assessment for the project.

If you have any questions, please contact Steve Kyono, Kauai District Engineer, at (808) 274-3111.

**Bc: HWY-K
ParEn (GI)
PBQD (JY)**



University of Hawai'i at Mānoa

Environmental Center
A Unit of Water Resources Research Center
2580 Campus Road • Crawford 317 • Honolulu, Hawai'i 96822
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June 9, 2000
EA: 00199

Department of Transportation
Highways Division
3060 Eiwa Street, Room 205
Lihue, Hawaii 96766
Attn: Steven Kyono

U.S. Department of Transportation
Federal Highway Administration
300 Ala Moana Boulevard
P.O. Box 50206
Honolulu, Hawaii 96850
Attn: Abraham Wong

Dear Mr. Kyono and Mr. Wong:

**Kaunualii Highway Improvements
Draft Environmental Assessment
Lihue and Koloa, Kauai**

The State Department of Transportation, Highways Division, in conjunction with the U.S. Department of Transportation, Federal Highways Division, proposes improvements to Kaunualii Highway on Kauai. The improvements include providing sight distances that conform to current standards and conversion from a two-lane undivided highway into a four-lane divided highway. The purpose of the project is to increase vehicle capacity of the roadway to reduce congestion, to improve sight distances which are currently less than standard, and to reduce the risk of head-on collisions.

This review was completed with the assistance of William Chapman, American Studies; Charles Chong, Hawaii Institute of Marine Biology (HIIMB); Don Hancock, Kauai District Aquatic Biologist; Karl Kim, Urban and Regional Planning; and Sherri Hiraoka, Environmental Center.

General Comments

- 1 | This project should have required an Environmental Impact State rather than an Environmental Assessment. This document fails to adequately address secondary impacts such
- 2 | as increased residential and commercial development, which are associated with improved infrastructure. Specifically, we draw attention to the need for further detail on various aspects of

- 3 | project justification, pedestrian and bicycle facilities, and water resource and ecosystem mitigation and management. We also feel that the time to review such a large project was inadequate. Several Kauai reviewers were not able to get their comments in to us by the deadline. If an EIS were prepared, the review period would have been 45 days instead of 30.
- 4 | Our request for additional time to incorporate late comments was denied. Under EIS rules, the applicant could have granted an additional amount of time for review.

Purpose and Need for the Project

- 5 | While the EA provides congestion levels, level-of-service (LOS), and some analysis of intersections, it does not adequately relate this project to the regional travel demand. There does not appear to be a comprehensive analysis of trip generation, distribution, and network assignment. For a project of this magnitude, one would expect that, there would be more detailed analysis of the relationship between land use, housing, employment, and trip making behavior in addition to vehicle counts and intersection capacity analyses. An EIS would have had sufficient breadth to more adequately describe the long-range demand for this highway project.

Existing Capacity Deficiencies

- 6 | Discussion on the current capacity deficiencies of the highway (page 1-5) includes a "substantial amount of residential construction in the Eleele/Hanapepe and Lawai areas" and an employment shift to Lihue after Hurricane Iniki. If this is true, then why does the current project end in Koloa, well before Hanapepe? Also, it has been 8 years since Hurricane Iniki. Is there an employment shift back to the west?

Highway Safety Improvements

- 7 | Another justification for this project is safety (page 1-7), yet there are no accident statistics, no accident rates, and no detailed analysis of the safety benefits that would result from implementation of this project. A more detailed analysis of both the accident history along the particular stretch of roadway to be improved is needed along with estimation of the accident frequencies and their associated costs. Increased speeds, increased travel volumes, and other factors associated with the improved roadway will also generate crashes as well as various public and private costs. The EA does not adequately describe the improvements in traffic safety that will result from the project.

Alternatives

- 8 | **No Build Alternative.** What are the projected effects of this alternative? Would congestion on Kaunualii Highway decrease? By how much?
- 9 | **Other Alternatives.** The Draft EA states on page 3-16 that "the highway is the primary, or in some areas, the only access route for the communities between Lihue and Barking Sands." Is a second access road a possible alternative? There is currently public demand for secondary

- 9 | access roads to areas on Oahu. An alternate roadway would also provide escape routes during emergency situations such as tsunamis and hurricanes.

County of Kauai Plans and Controls

- 10 | A project of such magnitude as this one should describe this project in relation to the General Plan Update (page 3-7), as well as other local plans on Kauai in more detail.

Bike and Pedestrian Movements

- 11 | Another area of the EA that would benefit from further information pertains to the roadway as an environment for pedestrians, bicyclists and other non-motorized users. The EA should more carefully describe the impacts on these users under assumptions of both build and no build.

- 12 | **Bicycle Paths** Figure 2-2 and page 2-3 indicates that there will not be any bicycle lane. Is there no demand for bicycle lanes? If there are bicyclists that use the highway, it may be dangerous to omit these lanes, especially considering that the speed limit west of Puhi will be 50 miles per hour (page 2-8). The design of the modified and new Lihue Mill Bridge (page 2-9) also includes bike lanes, although the rest of the highway does not.

- 13 | The State of Hawaii Master Plan for bicycling, as mentioned in the Draft EA on page 3-18, recommends "that Kaunualii Highway be made into a bike route." However, only "a portion of the Highway has been designated into a bike route." Why isn't a bike route planned for the entire length of the project, if that is the recommendation of the Master Plan? It may be more cost efficient to include bike paths with this project instead of attempting to implement them separately at a later date.

- 14 | Widened shoulders are proposed for bicycle use along Kaunualii Highway. Additionally, "bike lanes can be provided within these shoulders if needed" (page 4-12). How will this need be assessed? What are the benefits of putting in bike lanes as opposed to not putting them in?

- 15 | **Sidewalks** No sidewalks are planned for rural areas. The justification for this is that "no or little development is planned between Puhi and the west end of the project" (page 4-12). Even with little or no development, pedestrians and joggers may utilize the road. With improved access, there may be more people moving into the area. Sidewalks may be needed in the future.

Modified and New Huleia Bridges

- 16 | The cross-section of this bridge (page 2-10) shows that no sidewalk is planned for this bridge. The speed limit for this area is 50 miles per hour. Is there a need to include sidewalks, especially considering the high speed limit?

Options to Maintain Access to German Hill

- 17 | The realignment of Honmana Road will displace one residence at the extreme southern end of the neighborhood (page 4-7). Yet, at the January 13 Public Meeting (appendix A), it was stated that "no alternative would displace houses." Has the homeowner since been made aware of this correction? Where will the displaced residence be moved? How does the owner of this residence feel about this possible displacement?

Alternatives for Modifying Lihue Mill Bridge

- 18 | One possible alternative for the Lihue Mill Bridge (page 2-15) is the construction of a new 2-way bridge while maintaining the original bridge as a pedestrian/bicyclist path. Has this option been considered?

Estimated Cost, Phasing, and Schedule

- 19 | The EA should provide estimates of the benefits and costs for the various alternatives.
- 20 | The project will require some right-of-way acquisition (page 2-17). Have the landowners been notified of these acquisitions?

Affected Environment

- 21 | The document relies heavily on outdated socio-economic data at the Census Tract level. These types of data are available at the block group level and other widely available information sources such as school enrollment data, Tax Map Key data, and Geographic Information Systems databases. Therefore, the EA should make use of more current information. Most of the land use (page 3-1) and socio-economic information (page 3-8) is more than a decade old.

Roadway System

- 22 | The EA indicates that "the highway is the primary, or in some areas, the only access route for the communities between Lihue and Barking Sands..." (page 3-16). There is currently public demand for secondary access roads to various areas on Oahu. Is a secondary access road a feasible alternative in reducing congestion? This option may also provide alternate evacuation routes in emergency situations.

Water Resources

- 23 | The assessments that the planned improvements will not significantly impact the environment if the mitigation measures described in sections 4.13.4 and 4.13.5 of the draft are

23 taken during construction may be accurate, especially considering that the surveys of the aquatic habitats, wetlands and streams along the highway state that the biointegrity of the area is already degraded. However, the philosophy that it is justifiable to do further damage as long as damage was done by previous construction and human activity is flawed. The Hulcia watershed downstream of the project area has significant biological, economic, and cultural resources, according to the surveys in the draft. It may be beneficial for the improvements to be done within the scope of an overall environmental plan for the area. The draft states that specific recommendations for re-creation of the wetland area to be filled during construction will be made later (page 4-24). These recommendations already require some degree of environmental planning and the subsequent mitigative measures will no doubt carry a monetary cost. The environmental planning should include the entire watershed, because the project affects the whole area, and there does not seem to be a reason that such an approach would be more costly than the one already suggested in the draft.

24 The proposed highway improvements, including widening of roadway and culverting of streams along the entire length of Kaunualii highway from Lihue to Maluhia Road has the potential of negatively impacting the water quality and aquatic biota of the Nawiliwili Bay watershed, specifically that of Ifuleia River, and Nawiliwili, Puali, and Papkolea Streams, and the bay. Impacts to these aquatic ecosystems will be both short-term (construction related) and long-term (chronic impacts related to increased stormwater runoff and associated pollutants).

25 The significant increase in total area of impermeable surfaces (i.e., highway construction) will cause both an increase in the magnitude and frequency of flooding, and an increase in all NPS Pollutants associated with roadways (e.g., grease, oils, and other automotive fluids, rubber, and litter), particularly in the Puali and Nawiliwili watersheds which are undergoing rapid urbanization without implementation of Best Management Practices (e.g., stormwater detention basins and vegetated biofiltration channels). These increases in stormwater runoff will cause increased stream bank erosion and sedimentation of downstream portions of the watershed, including Nawiliwili Bay.

26 Increased sedimentation in the Nawiliwili Bay watershed, which is already recognized as "Water Quality Limited" by the Hawaii Dept. of Health, will reduce aquatic habitat, lower fisheries and wildlife productivity, and generally exacerbate the already polluted nature of streams and rivers in this watershed.

Ecosystems

27 From a biological perspective, wetlands, streams, and riparian areas are not ecologically distinct. They all overlap and affect each other. Habitats are neither independent nor static. Therefore, just because the affected habitats do not have many native or endangered species at this time, it does not mean that these species could not re-establish themselves in the area. It is probable that native stream and wetland species would return to the area within a few years if the habitat were improved. An overall proposal to improve the habitat of the entire watershed for native species should be a necessary component of project mitigation.

Historic Resources

Impacts to historic resources seem to have been well thought-out. The Grove Farm site and the Public Cemetery seem to be protected. The loss of the residence in the German Hill Historic District (page 4-30) is regrettable, and although some may agree that this action warrants a "no adverse effect" determination, the State Historic Preservation Division concurred with this conclusion.

Water Resources

28 Our reviewers felt that the draft EA inadequately addresses ways to design and implement DMP's (such as stormwater retention basins, grassed/vegetated biofiltration channels, etc., p. 4-35& 4-36) that would negate or minimize the known negative effects of urban related development that significantly increase stormwater runoff into streams. This is particularly true considering other cumulative impacts associated with on going, or planned in the near future, in or adjacent to the Nawiliwili Bay watershed (e.g. Puli Middle School, Airport expansion, Grove Farms proposed urbanization of Papakolea, Puall and Nawiliwili Stream watersheds). Papakolea Stream, which flows through the Huleia National Wildlife Refuge, is already severely degraded by turbidity, sedimentation, and dewatering for plantation uses. The proposed highway alterations, without the implementation of proper and effective BMP's, will further pollute this stream, and others within the Nawiliwili Bay watershed.

Conclusion

29 The EA is lacking in various areas. As was stated, some of the issues of particular concern include the project justification, pedestrian and bicycle facilities, and water resource and ecosystem impacts. The size and scope of the proposed project indicate that further detail is necessary to adequately address all of the potential impacts. The EA fails to adequately address secondary impacts of the project such as growth-inducing effects of highways and improved infrastructure. On Oahu, for example, development of the Ewa plain may have been slower or more difficult without the construction of H-1 and Kalaniana'ole Highway widening has stimulated interest in further development of Hawaii Kai.

30 Another secondary impact that is completely ignored is the increased rate of speed that vehicle will be travelling on the widen highway. Once the road is widened to four lanes and sight lines are improved, drivers will tend to travel at a greater rate of speed. This will mean more accidents and less pedestrian safety. Again, Kalaniana'ole Highway on Oahu should be instructive. Since that road was improved, communities along the road have complained about traffic in excess of the post speed limit of 35 miles per hours. This will certainly occur on Kauai, but it is not discussed at all in the EA.

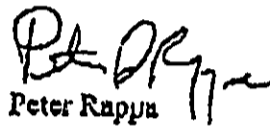
31 The EA fails to look at the cumulative effects of the many "minor" impacts. Any one impact is minor but viewed together, they may significantly impact the environment, which is the threshold for requiring and EIS. Under NEPA, impacts that might be considered significant, may be considered insignificant if they can be mitigated. There is no similar provision in state law. An impact is considered significant on its merits (or domerita as the case may be) and is sufficient to require an EIS. The EA points out many impacts that will occur, some arguably

Mr. Kyono and Mr. Wong
June 9, 2000
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- 31 | significant such as the disruption of traffic during construction. Yes, it can be mitigated but it is still significant.
- 32 | Because we feel that this document fails to adequately cover the potential impacts, we suggest that the Draft EA be used as an Environmental Impact Statement (EIS) Preparation Notice, and that an EIS be prepared.

Thank you for the opportunity to comment.

Sincerely,



Peter Rapua
Assistant Environmental Coordinator

cc: David Atkin, Parsons, Brinckerhoff Quade & Douglas
OEQC
James Moncur, Water Resources Research Center
William Chapman, American Studies
Charles Chong, Hawaii Institute of Marine Biology
Karl Kim, Urban and Regional Planning
Don Heacock, Division of Aquatic Resources
Sherri Hilaoka, Environmental Center

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000690

July 5, 2000

Mr. Peter Rappa
Assistant Environmental Coordinator
University of Hawaii at Manoa
Environmental Center
2550 Campus Road, Crawford Rm 317
Honolulu, Hawaii 96822

Dear Mr. Rappa:

**Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii
Project Number 50DE-02-95
Environmental Assessment (EA)**

Thank you for your comments on the Draft EA for our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments, which have been numbered. We would like to provide the following responses to these comments.

1. We have received no new information during the Draft EA comment period, including the comments provided in your letter, that would lead us to change our position that an Environmental Assessment is the appropriate form of environmental documentation for this project under Chapter 343 of the Hawaii Revised Statutes and the National Environmental Policy Act. We therefore disagree with your position that an environmental impact statement is the appropriate environmental review document.
2. The EA does address the potential secondary impacts of the proposed project. As described in Section 4.1.1 of the EA, development in the area between Lihue and Puhi would occur regardless of the whether the project proceeds because the County is encouraging growth in this area. The Environmental Center, during a meeting held on April 26, 2000, stated another secondary impact is that the project will cause some motorists to exceed the speed limit. We agree that this is an impact of the project, and we will disclose it in the Final EA. However, in our opinion this is not a significant impact.

3. Please see responses to comments #5-7, #11-15 and #23-28.
4. The Environmental Center was granted additional days to submit comments.
5. The Kauai Long-Range Land Transportation Plan (May 1997) is a comprehensive and detailed study that evaluated existing and future transportation needs of Kauai based on current and future land use and employment trends. Increasing the roadway capacity of Kaumualii Highway was identified in the Long-Range Plan as needed to address projected travel demand in south Kauai. The transportation demand purpose described in Section 1.2.2 of the EA references the Long-Range Plan. The EA does not need to repeat the analysis that was previously conducted for the Long-Range Plan.
6. The west end of the project is essentially the intersection of Kaumualii Highway with Maluhia Road. The project extension west of Maluhia Road (1340 meters (4400 feet)) will provide a transition between the existing two-lane configuration and the proposed four-lane configuration. Maluhia Road provides access to Koloa and Poipu, and Kaumualii Highway west of Maluhia Road services the communities from Lawai to Barking Sands. To the east of the Kaumualii Highway / Maluhia Road intersection there are presently two lanes, but to the west and south of the intersection there are a total of four lanes. Therefore, congestion is worse on the east side of the intersection than on the west side, especially the section of Kaumualii Highway between Puhi and Lihue. This is the reason why the Maluhia Road intersection was identified as the logical western terminus.

Since the immediate recovery from Hurricane Iniki, employment has increased in west and south Kauai, such as in the hotels and resorts of Poipu.
7. Historical vehicle accident data for Kaumualii Highway will be included in the Final EA. Section 4.4.1.1 of the EA states that motor vehicle safety will improve because of the proposed median and sight distance corrections. The median will substantially reduce the risk of head-on collisions, and increased sight distances provide drivers with more time to react to potentially hazardous situations. We acknowledge that providing additional lanes on Kaumualii Highway will enable some motorists to exceed the speed limit, potentially increasing the risk of incidents. This potential impact will be disclosed in the Final EA. However, the proposed project will improve overall highway safety.
8. The potential impacts of the No Build Alternative are described throughout Chapter 4 of the EA, including its traffic impacts, which are described in Section 4.4.1.1 of the EA.

9. We do not favor construction of a new east-west highway at this time when a capacity expansion of Kaunualii Highway addresses the project's purposes and needs with substantially fewer environmental and social impacts. Construction of a new highway would result in a greater level of environmental impact.
10. The current update of the County General Plan is not yet official. Until it has been adopted by the County, it is not appropriate for us to evaluate the project's consistency with this draft plan in the EA. However, a review of the current draft indicates that the project appears to be consistent with the current draft for reasons similar to the project's consistency with the adopted General Plan.
11. Section 4.4.1.2 of the EA describes the potential impacts of the No Build and Build Alternatives on cyclists and pedestrians using the highway. The impacts of the No Build Alternative will be clarified in the Final EA to state that the existing level of service for cyclists and pedestrians will not change.
12. The three-meter (10 feet) wide shoulders will be designated for use by cyclists. Therefore, it will not be necessary to stripe bike lanes within these shoulders because this may confuse cyclists and motorists. However, in urban areas, bike lanes will be striped at intersections because the three-meter (10 feet) wide shoulders could not be maintained in these areas. Although Figure 2-8 shows bike lanes within the shoulders of the modified Lihue Mill Bridge, a striped bicycle facility may not be included when the final design is completed. However, there will be more than adequate space for cyclists to ride within the shoulders of the bridge.
13. Section 4.4.1.2 of the Final EA will be clarified to address the comment. The entire length of the project will be designated a bike route after construction. Bike paths parallel to the highway are not included in the project. We, or the County of Kauai, have no plans to construct bike paths along Kaunualii Highway.
14. The statement in the draft EA is not accurate, and will be corrected in the Final EA. As stated in the response to comment #12, it will not be necessary to stripe bike lanes within the highway shoulders, except at intersections in urban areas.
15. Providing sidewalks in non-urban areas cannot be justified given the additional cost in relation to the demand for such facilities. Joggers or pedestrians wishing to use the highway west of Puhi may use the three-meter (10 feet) wide shoulders if there is no space along the sides of the highway.

16. Huleia Bridge is located approximately six kilometers (three and a half miles) west of Puhi, in an agricultural/rural area. Providing sidewalks along this section of Kaumualii Highway is not necessary (please see response to comment #15).
17. The quotation cited from the draft EA refers only to the widening of Kaumualii Highway, not the relocation of access to German Hill. As described in Section 2.1.2, the proposed widening will alternate on the north (mauka) and south (makai) sides to avoid residential and business displacements. The EA is very clear in stating that the one residential relocation associated with the project is due to the re-alignment of Hoomana Road. The owners of the house that would be affected are aware of the project's impact, and we are continuing to have discussions with the owners regarding compensation and relocation assistance.
18. The alternative suggested would require moving the highway further north (mauka) than planned, which would displace another historic bridge (Hoomana Overpass Bridge), and may encroach upon the German Hill neighborhood.
19. Cost estimates of other alternatives were not included in Section 2.3, Estimated Cost, Phasing and Schedule, because no other build alternative was evaluated in the EA. Other build alternatives that were considered but rejected are presented in Section 2.2 of the EA. No attempt has been made to quantify benefits. Project benefits are discussed qualitatively.
20. The affected landowners have been consulted throughout project planning. They were also sent copies of the Draft EA.
21. The purpose of including demographic and housing information in Section 3.3 of the EA is to determine whether there are minority and low-income populations per the Executive Order on Environmental Justice (#12898), and whether the project would cause a disproportionately high and adverse impact on these populations. Although the data is ten years old, it is the best available information given the purpose of this exercise. Obtaining very detailed, or block level data, is not necessary because the widening would not occur in any existing neighborhood.
22. Please see response to comment #9.
23. We have no objection to coordinating our environmental mitigation measures with an overall environmental planning effort conducted by others for the watershed. However, we will be required under a Section 404 permit to replace the wetlands in Puhi to be filled. We do not expect the Corps of Engineers to approve a substantial delay in providing the new wetland while waiting for a study of the watershed.

24. The short-term (construction) impacts of the proposed project on surface water resources, such as those listed in the comment, are described in Section 4.13.4 of the EA. The long-term (operational) impacts of the proposed project on surface water resources are described in Section 4.7.1 of the EA. Adverse impacts to surface waters are not anticipated because Best Management Practices (BMP) will be implemented during construction to prevent sedimentation. In addition, the project will not alter the drainage patterns of any of the streams that cross the highway; and the level of roadway-related pollutants entering surface waters will be similar under the Build and No Build Alternatives because regional vehicle-miles traveled will be same under both alternatives.
25. Section 4.7.1 will be revised in the Final EA to discuss the potential impacts of creating additional impervious roadway surface in the regional watershed. Section 4.7.5 will be revised to include mitigation to prevent or minimize excessive erosion along the highway, and maintain existing drainage patterns. The amount of additional highway surface, which includes lanes, shoulders, and sidewalks, but not the median and adjacent grading, will total approximately 16 hectares (40 acres). Spread over a distance of 12 kilometers (7.5 miles), this amount is a very small in comparison to the size of the total regional watershed. The highway drainage system will be designed to prevent or minimize excessive erosion, and every effort will be made to maintain existing surface water movements. For example, as reported in Section 4.7.4 of the EA, hydraulic analysis indicate that the project is not expected to change the base flood elevations at Nawiliwili and Huleia Streams. With regards to the impact of roadway-related pollutants, please see the response to comment #24.
26. We were not aware that projects in the study area have been constructed without BMPs. Projects that create a surface disturbance larger than 4 acres (1.6 hectares) are required to obtain a NPDES permit from the State Department of Health (SDOH). Part of this permit process includes specification of BMPs. If projects have been constructed without BMPs, they could be in violation of the Clean Water Act, and SDOH should be contacted. We commit to including BMPs in our project to prevent inappropriate discharges to surface waters, because of the potential impacts noted in the comments if no such measures are implemented. Provision of BMPs is a requirement under the law.
27. It is beyond our purpose as a transportation service agency to create habitat for native or threatened and endangered species. It is our responsibility to avoid sensitive habitat when planning a transportation project, and if this is not possible, to minimize or mitigate adverse effects. Nevertheless, we support any effort to create habitat, including coordinating environmental mitigation efforts in an overall environmental planning effort (please see response to comment #23).

Mr. Peter Rappa
Page 6
July 5, 2000

HWY-KE 4.000690

28. As described in responses to comment #24, the proposed project will implement BMPs to prevent sedimentation to surface waters in the project area. In addition, the project will not increase the risk of flooding (please see response to comment #25).
29. We disagree. We believe the detail provided in the Draft EA and in the upcoming Final EA is adequate for our planned Finding of No Significant Impact (FONSI).
30. Please see response to comment #2.
31. The impacts of the proposed project include an "adverse effect" on the historic Lihue Mill Bridge, the filling of a wetland just west of Puhi, the conversion of approximately 35 hectares (86 acres) of open space and fallow agricultural land to transportation use, and the displacement of one residence. In our opinion, these impacts, individually and cumulatively, are not significant. Construction impacts are short-term, and can be mitigated. Therefore, none of the construction impacts disclosed in the EA are significant in our opinion.
32. We disagree. Please see responses to comments #1, #29 and #31.

We will be rendering a FONSI for this project, and will be completing the project's Final EA. Please let me know if you would like a copy of the Final EA/FONSI.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,



STEVEN M. KYONO, P.E.
District Engineer

SM:es
Encl.

DEPARTMENT OF WATER

County of Kauai

"Water has no Substitute - Conserve It!"

May 16, 2000

Mr. Steve Kyono, District Engineer
State of Hawaii
Department of Transportation
Highways Division
3060 Eiwa Street, Room 205
Lihue, HI 96766

Dear Mr. Kyono:

Subject: Improvements to Kaunualii Highway
Lihue to Maluhia Road
Project No. 50DE-02-95

The Department does not have any additional comments on the subject project.

Sincerely,



Ernest Y.W. Lau
Manager and Chief Engineer

MM:emi

RECEIVED
SERVIS - KAUAI
2000 MAY 22 A 10:43

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000671

July 5, 2000

Mr. Ernest Y.W. Lau
Manager & Chief Engineer
County of Kauai
Department of Water
4398 Pua Loke Street
Lihue, Hawaii 96766-5706

Dear Mr. Lau:


Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii
Project Number 50DE-02-95
Environmental Assessment (EA)

Thank you for your review of the Draft EA for our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway.

We will be rendering a Finding of No Significant Impact (FONSI) for this project, and will be completing the project's Final EA. Please let me know if you would like a copy of the Final EA/FONSI.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es



June 6, 2000

Mr. Steven M. Kyono, P.E.
District Engineer
State of Hawaii
Department of Transportation
Highways Division
Kauai District
3080 Eiwa Street, Room 205
Lihue, HI 96766

RECEIVED
SYS - KAUAI
2000 JUN - 8 A 10: 21

Dear Mr. Kyono:


Subject: Improvements to Kaumualii Highway
Lihue to Maluhia Road
Project No. 50DE-02-95

We have reviewed the April 2000 Draft Environmental Assessment for the subject project and have no specific comments at this time. We believe the improvements to Kaumualii Highway are needed and strongly support the project. The reprieve in traffic brought about by Kauai's depressed economy has expired as our economy begins to rebound and we encourage the State Department of Transportation to take the necessary implementing steps as quickly as practicable.

As much of the widening will occur on Grove Farm lands we look forward to working with you on the issues that may arise. Please feel free to contact us in this regard.

Very truly yours,

GROVE FARM COMPANY, INCORPORATED


Allan A. Smith
Vice President and Chief Operating Officer

462069
P.O. Box ~~4066~~ Puhi Rural Branch Lihue, Hawaii 96766-7069
Phone: (808) 245-3678 FAX (808) 246-9470

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000641

July 5, 2000

Mr. Allan A. Smith
Vice President and Chief Operating Officer
Grove Farm Company
P. O. Box 2069
Lihue, Hawaii 96766

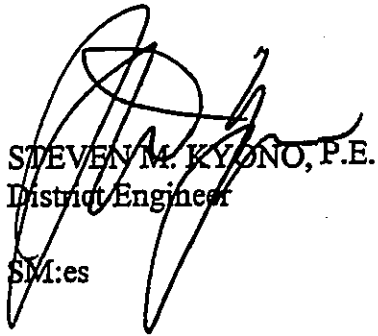
Dear Mr. Smith,

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road.
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

Public Comment Form

Improvements to Kaumualii Highway

Lihue to West of Maluhia Road, RECEIVED
COUNTY - KAUAI

County of Kauai, Hawaii

State of Hawaii Department of Transportation JUN 8 9:03
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: KAINOA AKI

Address: P.O. BOX 578
LAWAI HI 96765

Telephone (day): 332-9119

Telephone (eve): _____

RECEIVED
COUNTY - KAUAI
JUN - 8
A 9:03

Please make any comments below:
(return by June 7, 2000) 'ALO 'AI-

1 OBVIOUSLY THERE IS A NEED FOR WIDENING OF THE HIGHWAY, ESPECIALLY IN THESE LOCATIONS. THE TRAFFIC GETS REALLY BACKED UP, AND THE CONGESTION IS BAD. HOWEVER I THINK THE NEED TO KEEP KAUAI BEAUTIFUL IS JUST AS IMPORTANT. I THINK THE HIGHWAY WIDENING SHOULD BE DONE IN A WAY THAT WOULD NOT DETRACT FROM THE NATURAL BEAUTY OF THE ISLAND. WHETHER IT BE RESTORATION OR BEAUTIFICATION, PROVISIONS SHOULD BE MADE ON THIS PROJECT. MAHALO FOR YOUR TIME.

- ALOHA

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000680

July 5, 2000

Mr. Kainoa Aki
P.O. Box 378
Lawai, Hawaii 96765

Dear Mr. Aki:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii


Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments, which have been numbered. We would like to provide the following responses to these comments.

1. We understand and agree with the importance of maintaining the natural beauty of Kauai. Therefore, a substantial portion of the construction budget will be set aside for landscaping. Plants adaptable to the local growing conditions will be used because much of the highway will not have irrigation. When possible, native trees and shrubs will be used, and some of the trees displaced by the highway will be relocated to locations along the widened Kaumualii Highway. Interested organizations will be consulted for suggestions about plantings.

We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

Public Comment Form

Improvements to Kaumualii Highway
Lihue to West of Maluhia Road

County of Kauai, Hawaii

State of Hawaii Department of Transportation
Highways Division

RECEIVED
SYS - KAUAI

2000 JUN -8 A 9:03

The information you provide in this form will help the State Department of Transportation in planning the improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: MOKU BLACKSTAD

Address: PO BOX 963

KOLOA, HI 96756

Telephone (day): (808) 639-2477

Telephone (eve): (808) 742-1222

Please make any comments below: I THINK ITS A GREAT IDEA TO WIDEN
(return by June 7, 2000) KAUMUALII HWY, BECAUSE THERE IS ALOT OF TRAFFIC
EVERY DAY. I SHOULD KNOW BECAUSE I LIVE ON THE SOUTH SIDE. IT ALSO
CREATE JOBS FOR KAUAI PEOPLE AND THATS IMPORTANT BECAUSE TIMES ARE
HARD FOR EVERYONE.

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000642

July 5, 2000

Mr. Moku Blackstad
P. O. Box 963
Koloa, Hawaii 96756

Dear Mr. Blackstad,

Subject: Improvements to Kaumualii Highway
 Lihue to West of Maluhia Road
 Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYOJO, P.E.
District Engineer

SM:es

CONTRACTORS ASSOCIATION OF KAUAI

4231 Ahukini, Lihu'e, Kaua'i, Hawai'i 96766
Phone (808) 246-2662 Fax (808) 246-8642



May 25, 2000

RE: IMPROVEMENTS TO KAUMUALII HIGHWAY

My name is Andy Ragasa, president of the hundred member Contractors Association of Kaua'i, providing testimony on behalf of the association. The Contractors Association of Kaua'i is fully in support of the widening of Kaumualii Highway from Lihu'e Mill Bridge at Kuhio Highway to an area west of Maluhia Road.

The association would first like to compliment the Department of Transportation, Highways Division staff and the consultants for this format in providing testimony. It is a refreshing approach, testifier friendly and a process we hope other agencies will begin using. Thank you and we congratulate and compliment you.

The association's support of the widening of Kaumualii Highway goes beyond the obvious work it can create. Most of the members of our association have a lot of employees coming to work into Lihu'e from west Kaua'i bedroom communities. This highway has been congested for a long time and it is not getting any better. It is not unusual to take 20-30 minutes just to get through the Lihu'e-Puhi stop lights in the afternoon with traffic bumper-to-bumper from Kentucky Fried Chicken on Kuhio Highway and down to the Fire Station on Rice Street. With more traffic signalization being planned the problem can only get worse.

Another factor in the traffic pattern is the south shore resort area. With the growing number of available hotel rooms, bed and breakfasts, time shares and other kinds of accommodations, the amount of car rental traffic mixing with construction, agricultural and military vehicles and the local public makes for a highly congested road of mixed use. Relief is definitely needed and we believe with the amount of open space now available for this infrastructure the time is right to start designing and building this expansion.

Thank you very much for allowing us to provide this testimony and we again congratulate all involved in making this "open house" type of public hearing available!

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000644

July 5, 2000

Mr. Andy Ragasa
President
Contractors Association of Kauai
Lihue, Hawaii 96766

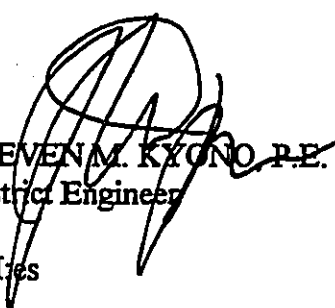
Dear Mr. Ragasa,

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

RECEIVED JUL 10 2000

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000677

July 5, 2000

Mr. David Crawshaw
P.O. Box 1081
Lawai, Hawaii 96765

Dear Mr. Crawshaw:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We have reviewed your oral comments made at the project's public hearing, and would like to provide the following responses. If we have misinterpreted any of your comments, please let us know.

Comment 1. Even with the project, there would still be congestion in Puhi.

Response. The traffic impact analysis conducted for this project indicated that with the project, intersection operations along Kaumualii Highway will improve dramatically, including those intersections in and around Puhi.

Comment 2. Concerned that the project would affect the flow of Huleia Stream.

Response. Hydraulic modeling conducted for this project indicated that the modified Huleia Bridge will not affect Huleia Stream flow.

Mr. David Crawshaw
Page 2
July 5, 2000

HWY-KE 4.000677

Comment 3. Concerned that the project would affect access to the commentor's leased farm located adjacent to the old Halfway Bridge.

Response. The existing quarry road located just east of Huleia Bridge will be maintained, including its intersection with Kaumualii Highway. Therefore, access to the old Halfway Bridge area will be available.

Comment 4. Instead of the proposed project, a road bypassing Lihue should be built from Maluhia Road.

Response. A Lihue-Hanamaulu bypass road is included in the Kauai Long-Range Land Transportation Plan (May 1997). Therefore, this bypass was included in the project's No Build Alternative, and is assumed to be constructed by the design year of 2020. The planned bypass road would start at or in the vicinity of Nuhou Street on Kaumualii Highway (near the future Kauai Intermediate School). This planned road is not exactly the same as the commentor's suggestion. Even with the Lihue-Hanamaulu bypass road, the proposed project is still needed because both projects have different purposes.

Constructing a new highway from Maluhia Road to the future Lihue-Hanamaulu bypass road cannot be justified when the expansion of Kaumualii Highway addresses the project's purposes and needs, without significant environmental and social impacts.

Comment 5. Any large tree removed by the project should be replaced by a similar type of tree, or landscaping should be better than it is today.

Response. Some of the trees displaced by the highway will be relocated to locations along the widened Kaumualii Highway or the Maluhia Road Tree Tunnel. A substantial portion of the construction budget will be set aside for landscaping. Plants adaptable to the local growing conditions will be used because much of the highway will not have irrigation. When possible, native trees and shrubs will be used. Interested organizations will be consulted for suggestions about plantings.

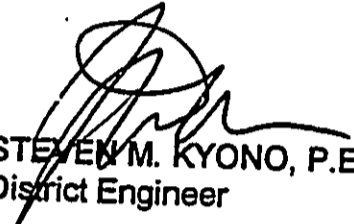
We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

Mr. David Crawshaw
Page 3
July 5, 2000

HWY-KE 4.000677

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,



STEVEN M. KYONO, P.E.
District Engineer

SM:es

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000645

July 5, 2000

Ms. Laura L. Cushnie
Goodfellow Brothers Inc.
P. O. Box 1090
Koloa, Hawaii 96756

Dear Ms. Cushnie,

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

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KAZU HAYASHIDA
DIRECTOR
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766
JUL 11 2000

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000646

July 5, 2000

Mr. Ralph Cushnie
P. O. Box 1882
Koloa, Hawaii 96756

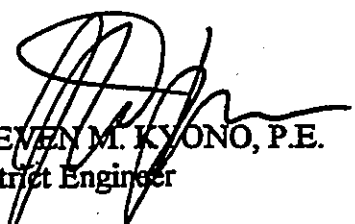
Dear Mr.  Cushnie,

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM/es

Public Comment Form
Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

RECEIVED
HIGHWAYS - KAUAI
2000 JUN -1 A 10:44

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: Bill Dable
Address: Box 720
Eleele, Hawaii 96705

Telephone (day): 335-3171
Telephone (eve): 332-9771

Please make any comments below:
(return by June 7, 2000)

I favor the complete build out of the Kaumualii Highway from Lihue to a point just beyond Maluhia Road.
I believe the plans are presented by the DOT are the most non-intrusive to the existing assets. A do nothing approach just complicates everything from serious traffic accidents to re-paving projects, etc.
I also have reservations about adding more that is required to make the highways safe. Two lanes in each direction is about all I can personally take. Some talk of adding trees on the median just presents the motorists something more to hit in addition to the utility poles.

While I have my personal feelings, overall for the improved safety of the community is far more important.

Let's get on with it.

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000647

July 5, 2000

Mr. Bill Dahle
P. O. Box 720
Eleele, Hawaii 96705

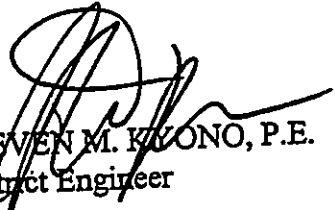
Dear Mr. Dahle,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KIZONO, P.E.
District Engineer

SM:es

Public Comment Form

Improvements to Kaunualii Highway

Lihue to West of Maluhia Road

County of Kauai, Hawaii

State of Hawaii Department of Transportation

Highways Division

RECEIVED
YS - KAUAI
2000 JUN -8 A 9:03

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaunualii Highway project. We appreciate any comment you may have.

Name: Alex Domenda

Address: P.O. Box 510220 Kealia, Hi 96751

Telephone (day): 635-1623

Telephone (eve): 821-1073

Please make any comments below:
(return by June 7, 2000)

Improvements Needed / Traffic is Very Bad

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000643

July 5, 2000

Mr. Alex Domendea
P. O. Box 510220
Kealia, Hawaii 96751

Dear Mr. Domendea,

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

Public Comment Form

Improvements to Kaunualii Highway
Lihue to West of Maluhia Road

RECEIVED
HYS - KAUAI

County of Kauai, Hawaii

2000 JUN -8 A 9:03

State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaunualii Highway project. We appreciate any comment you may have.

Name: CHRISTINE ELORITA

Address: P.O. BOX 346
LIHUE, HI 96766

Telephone (day): 632-2200

Telephone (eve): 822-5160

Please make any comments below:
(return by June 7, 2000)

ALOHA:

I SUPPORT THIS PROPOSED PROJECT BECAUSE KAUAI'S POPULATION HAS RISEN OVER THE YEARS — MORE PEOPLE, MORE CARS BEING DRIVEN. ALTHOUGH I LIVE ON THE EAST SIDE OF KAUAI, THERE WERE TIMES WHEN I'D BE CAUGHT IN TRAFFIC — GOING WEST IN THE AFTERNOON. I THINK IT'S A GREAT IDEA TO HAVE ADDITIONAL LANES BECAUSE WE CAN AT LEAST USE ONE, SHOULD THE OTHER LANES BE CLOSED OFF DUE TO A TRAFFIC ACCIDENTS. I HATE IT WHEN THERE'S ~~HERE~~ ON THE RADIO ABOUT TRAFFIC ACCIDENTS HAPPENING — IT'S AN ANNOUNCEMENT SAD. BUT IT'S DEFINITELY FRUSTRATING TO NOT BE ABLE TO DRIVE THRU TRAFFIC BECAUSE OF ROAD CLOSURE. SO, PLEASE CONSIDER MAKING THIS PROPOSED PROJECT A REALITY FOR KAUAI.

MAHALO!

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000648

July 5, 2000

Ms. Christine Erorita
P. O. Box 346
Lihue, Hawaii 96766

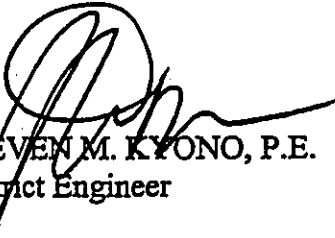
Dear Ms. Erorita,

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

Public Comment Form
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaunualii Highway project. We appreciate any comment you may have.

Name: William & Aileen Faria Sr

Address: 4696 Hoomana Rd.
LIHUE, HI 96766

Telephone (day): 337-1491

Telephone (eve): 245-9163

Please make any comments below:
(return by June 7, 2000)

We approve the Hoomana Rd. entrance & re-alignment. Thank-You for taking our comments into consideration.

Please inform us if you plan any more meetings or public hearings on this project.

William Faria Sr

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000649

July 5, 2000

Mr. & Mrs. William Farias
4696 Hoomana Road
Lihue, Hawaii 96766

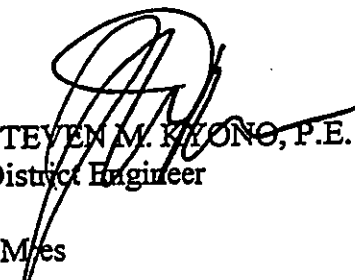
Dear Mr. & Mrs. Farias,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONG, P.E.
District Engineer

SM/es

Public Comment Form
Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: Marge Freeman

Address: 6448 Kaahala
Kapaa Hi 96746

Telephone (day): 822-4695

Telephone (eve):

Please make any comments below:
(return by June 7, 2000)

1 | No 4 lane roads ever on
this island. Use alternative 2 lanes.
2 | Underground the wires while
it is cut up.
3 | No bike paths on shoulder too dangerous
4 | Trees & bushes along all roads.
Use your imagination - not the
same old huge roads
cal. learned the new roads for more cars
5 | Light rail

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000679

July 5, 2000

Ms. Marge Freeman
6448 Kaahele Street
Kapaa, Hawaii 96746

Dear Ms. Freeman:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We have reviewed your oral comments made at the project's public hearing, and would like to provide the following responses. If we have misinterpreted any of your comments, please let us know.

Comment 1. Displaced overhead utility lines should be placed underground.

Response. At this time, we do not plan to underground any displaced overhead utility lines along Kaumualii Highway because of its high cost. However, we will revisit this issue during the design phase of the project when we have a clearer understanding of the overall cost of the project.

Comment 2. Trees should be placed along the highway.

Response. A substantial portion of the construction budget will be set aside for landscaping. Plants adaptable to the local growing conditions will be used because much of the highway will not have irrigation. When possible, native trees and shrubs will be used. Interested organizations will be consulted for suggestions about plantings. Some of the trees displaced by the highway will be relocated to locations along the widened Kaumualii Highway or the Maluhia Road Tree Tunnel.

Ms. Marge Freeman
Page 2
July 5, 2000

HWY-KE 4.000679

Comment 3. A light rail system should be considered.

Response. The population of the project area now and in the foreseeable future does not justify the construction and operation of a light rail transit system; which is expensive.

Comment 4. Instead of widening Kaumualii Highway by two lanes, these extra lanes should be constructed as a new two-lane highway elsewhere.

Response. To address the project's purposes and needs, the suggested new two-lane highway would have to be placed parallel to Kaumualii Highway between Koloa and Lihue. We do not favor construction of a new roadway at this time when the expansion of the existing Kaumualii Highway addresses the project's purposes and needs, without significant environmental and social impacts. Creation of a new highway alignment would probably result in greater adverse impacts than the proposed project.

Comment 5. Cyclists should not be encouraged to ride on the roadway shoulders as proposed in the project.

Response. With the exception of freeways or similar types of roadway, it is our position that all State highways be shared by all users, including cyclists and pedestrians. Therefore, the expanded Kaumualii Highway will include three-meter (10 feet) wide shoulders, which can be used for cycling, and pedestrian sidewalks in the urban sections of the highway. It is our responsibility to enhance mobility for all travelers, regardless of mode.

Enclosed is a copy of your written comments, which have been numbered. We would like to provide the following responses to these comments.

1. Please see response to oral comment #4.
2. Please see response to oral comment #1.
3. Please see response to oral comment #5.
4. Please see response to oral comment #2.
5. Please see response to oral comment #3.

Ms. Marge Freeman
Page 3
July 5, 2000

HWY-KE 4.000679

We will be rendering a Finding of No Significant Impact for this project, and will be completing a Final Environmental Assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,



STEVEN M. KYONO, P.E.
District Engineer

SM:es
Encl.

Public Comment Form

Improvements to Kaumualii Highway

Lihue to West of Maluhia Road

County of Kauai, Hawaii

State of Hawaii Department of Transportation
Highways Division

RECEIVED
HYS - KAUAI

2000 JUN -5 A 10: 54

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: Lisa Freitas

Address: 4952 Ea Road

Kupaa, HI 96746

Telephone (day): 632-2088

Telephone (eve): 821-2568

Please make any comments below:
(return by June 7, 2000)

I am looking forward to having better traffic flow. Kauai is such a beautiful island, it is unfortunate that we have such a negative, with our current traffic jams.

I think the sooner we get started on the project, the better. The traffic problems are not going to get any better with time.

Sincerely,

Lisa Freitas

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000650

July 5, 2000

Ms. Lisa Freitas
4952 Ea Road
Kapaa, Hawaii 96746

Dear Ms. Freitas,

Subject: **Improvements to Kaumualii Highway**
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KONO, P.E.
District Engineer

SM/es

RECEIVED
HIGHWAYS - KAUAI

2000 JUN -9 A 11: 10

June 7, 2000

Mr. Steven M. Kyono, P.E.
District Engineer
State of Hawaii
Department of Transportation
Highways Division
Kauai District
3060 Eiwa Street, Room 205
Lihue, HI 96766

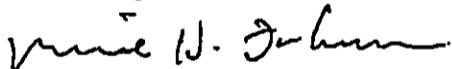
Dear Mr. Kyono:

Subject: Improvements to Kaumualii Highway
Lihue to Maluhia Road
Project No. 50DE-02-95

I would like to go on record in support of the Kaumualii Highway widening project that is now being planned from Lihue to Maluhia Road. It is clear that congestion is worsening on this section of Kaumualii. For the sake of the resident getting to work or school, business vehicles that shouldn't be wasting time in traffic, our visitors who are looking for a good experience on Kauai, and emergency vehicles that need to get from point to point quickly, the safe and efficient movement of traffic is vital to our community. We have seen recently how accidents or fires can tie up traffic, greatly inconveniencing if not jeopardizing the welfare of the public. The improvements being planned will greatly alleviate this situation.

Thank you for you considering my views.

Sincerely,



Michael H. Furukawa

001 002 003 004 005 006 007 008 009 010 011 012 013 014 015 016 017 018 019 020 021 022 023 024 025 026 027 028 029 030 031 032 033 034 035 036 037 038 039 040 041 042 043 044 045 046 047 048 049 050 051 052 053 054 055 056 057 058 059 060 061 062 063 064 065 066 067 068 069 070 071 072 073 074 075 076 077 078 079 080 081 082 083 084 085 086 087 088 089 090 091 092 093 094 095 096 097 098 099 100

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000651

July 5, 2000

Mr. Michael H. Furukawa
P. O. Box 2069
Lihue, Hawaii 96766

Dear Mr. Furukawa,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000652

July 5, 2000

Mr. Gregg Gardiner
Kauai Business Council & Lihue Lutheran
2970 Haleilo Road
Lihue, Hawaii 96766


Dear Mr. Gardiner,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KANO, P.E.
District Engineer

SM:es

Public Comment Form
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the improvements to Kaunualii Highway project. We appreciate any comment you may have.

Name: Glen H. Takenouchi - Branch Manager

Address: The Gas Company

3990 Rice Street

Lihue, HI 96766

Telephone (day): 245-7957

Telephone (eve): _____

Please make any comments below:
(return by June 7, 2000)

The Gas Company, Kauai Branch wholeheartedly supports this project to provide a four lane divided roadway between Lihue to just west of Maluhia Road. Our tanker trucks, service and construction vehicles travel to the westside of the island everyday, and are often held up in traffic to and from their destination. This very important project is required for The Gas Company to enhance our service to the developing areas of the west and south side of the island.

Thank you for allowing us to comment and support the Improvements to Kaunualii Highway.

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO

HWY-KE 4.000653

July 5, 2000

Mr. Glen H. Takenouchi
Branch Manager
The Gas Company
3990 Rice Street
Lihue, Hawaii 96766

Dear Mr. Takenouchi,

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM/es

Public Comment Form
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaunualii Highway project. We appreciate any comment you may have.

Name: Tom Godley
Address: 3559 Hanapepe Rd
P.O. Box 688
Hanapepe, HI 96716
Telephone (day): 335-5562
Telephone (eve): _____

Please make any comments below:
(return by June 7, 2000)

1. When you extend the four lane road westward, without trees or guardrail or some kind of barrier, you certainly will have people making U-turns, increasing the danger.
 2. Leading the justification of why this project is needed - these are:
 - a. existing capacity deficiencies
 - b. Future transportation demand
 - c. Highway safety improvements
- For the above reasons, a traffic light is needed immediately at the Kaunualii - Koloa Road intersection. It is extremely dangerous now, and will become much more so, especially if the proposed improvements to Kaunualii Highway are approved.

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000681

July 6, 2000

Mr. Tom Godbey
P.O. Box 688
Hanapepe, Hawaii 96716

Dear Mr. Godbey:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

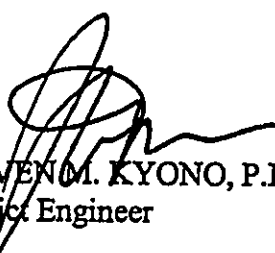
Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments, which have been numbered. We would like to provide the following responses to these comments.

1. For aesthetic reasons, the project will not include any type of guardrail or barrier in the median. Other than being illegal, if a motorist chooses to make a U-turn in the median, they would be driving over landscaping. Depending on the grading plan, driving over the median may cause damage to the vehicle. Opportunities for U-turns will be provided at certain signalized intersections.
2. We will installing a traffic signal system at the Kaumualii Highway/Koloa Road intersection in conjunction with the Lawai Stream Bridge widening project. Bids for the project were opened last week. Construction of that project will commence later this year.

We will be rendering a Finding of No Significant Impact for this project, and will be completing a Final Environmental Assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

4 June 2000

RECEIVED
- KAUAI

2000 JUN -5 A 11:48

Mr. Steven Kyono, District Engineer
Department of Transportation
3060 Eiwa Street
Room 205
Lihue
Hawaii
96766

Reference: highway expansions

Dear Mr. Kyono,

I can not express strongly enough our strong opposition to any and all future expansion of roads on Kauai even assuming the consequent vehicle inconveniences.

As a resident (and former tourist) the natural glory that is Kauai MUST be protected from all assaults of our pollution/waste orientated culture. Each and every new piece of land taken for the sacred automobile contributes to this spreading virus.

We destroy the very essence of what all of us value the most in the privilege of living here - the pure solitude of the island's beauty.

Thank you for the time.


Sanford G. Higginbotham

pmb 253
post office box 3500
princeville
kauai
hawaii
96722
(808)826-1582

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000654

July 5, 2000

Mr. Sanford G. Higginbotham
P. O. Box 3500
Lihue, Hawaii 96766

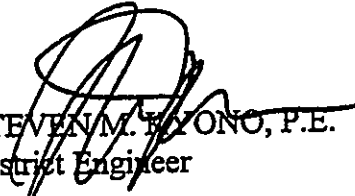
Dear Mr. Higginbotham,

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KOYONO, P.E.
District Engineer

SM/es

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BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000676

July 5, 2000

Mr. Monte Hull
Sierra Club
2149-B Puu Road
Kalaheo, Hawaii 96741

Dear Mr. Hull:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We have reviewed your oral comments made at the project's public hearing, and would like to provide the following responses. If we have misinterpreted any of your comments, please let us know.

Comment 1. A Lihue bypass road should be considered as an alternative.

Response. A Lihue-Hanamaulu bypass road is included in the Kauai Long-Range Land Transportation Plan (May 1997). Therefore, this bypass was included in the project's No Build alternative, and is assumed to be constructed by the design year of 2020. Even with the Lihue-Hanamaulu bypass road, the proposed project is still needed because both projects have different purposes.

Mr. Monte Hull
Page 2
July 5, 2000

HWY-KE 4.000676

Comment 2. Since traffic congestion on Kaumualii Highway is caused by the traffic signals, widening the highway would do nothing to alleviate this problem.

Response. The traffic impact analysis conducted for this project indicated that with the project, intersection operations along Kaumualii Highway will improve dramatically. By doubling the capacity of the highway, the same "green time" allotted to through traffic will allow up to twice the number of vehicles to pass through. Congestion is caused when "green time" is insufficient, and the intersection is unable to process all the vehicles that are queuing at the intersection.

Comment 3. The new Kaumualii Highway / Hoomana Road intersection will be dangerous because left-turning vehicles would have to cross two lanes.

Response. Adequate sight distances will be provided at the new Kaumualii Highway / Hoomana Road intersection to allow safe left-turn movements. In addition, an acceleration lane will be provided so vehicles turning left out of Hoomana Road can safely merge with eastbound traffic on Kaumualii Highway.

Comment 4. What is the source of the year 2020 traffic volume projections used to prepare traffic analysis?

Response. The project's traffic impact analysis used the year 2020 traffic volume projections that were developed for the Kauai Long-Range Land Transportation Plan (May 1997).

Comment 5. The "open house" format of the project's public hearing prevents community members from presenting a united position.

Response. Members of the public are still free to interact as they see fit at the public hearing as long as they do not disrupt information gathering and comments by other participants. They can also e-mail, write letters, or arrange meetings to communicate amongst themselves, and present their position to the State Department of Transportation.

Mr. Monte Hull
Page 3
July 5, 2000

HWY-KE 4.000676

Comment 6. The "open house" format is very effective if you don't want to hear public views.

Response. We find that the "open house" format is much more effective than the "traditional" format of public hearing in getting comments from people who do not like to speak in front of an audience, or who may have a different opinion than the majority of hearing attendees. At this project's public hearing, three out of four persons who attended the hearing provided comments. A "traditional" format would be unlikely to generate that high of a response rate.

Comment 7. The project should have conducted the kind of public hearing where there are both displays and a general meeting.

Response. The objectives of our public hearings are to provide: (1) provide the public and government agencies with the opportunity to get more information about the project; (2) to correct errors in fact or analysis, or point out omissions, in the project's environmental document; and (3) to provide the public with the opportunity to express their personal opinions for the consideration of decision makers. The "open house" format accomplishes all of these objectives.

Comment 8. The visual simulation of the modified Lihue Mill Bridge does not show the relocated overhead utility lines.

Response. The intent of developing the visual simulation of the modified Lihue Mill Bridge is to show how this historic bridge will appear after construction, and the extent to which the widening will change the appearance of Kaumualii Highway. In the section of Kaumualii Highway shown in this visual simulation, the overhead utility lines will need to be relocated. Since the details of this relocation have not been determined, the relocated utility lines were not shown in the simulation. There was no intent to mislead the public.

Comment 9. The visual simulation of the project at the Maluhia Road Tree Tunnel does not show other elements of the project, such as the median and the westbound lanes. Therefore, it is not possible to show how the character of the highway would change.

Response. The intent of developing the visual simulation of the project at the Maluhia Road intersection is to show that the project will not affect the tree tunnel, a valuable natural and scenic resource. It was not possible to position the photographer at a location that would capture the entire four-lanes and median. The visual simulation of the highway at Lihue Mill Bridge shows the extent of the proposed widening.

Mr. Monte Hull
Page 4
July 5, 2000

HWY-KE 4.000676

We will be rendering a Finding of No Significant Impact for this project, and will be completing a Final Environmental Assessment.

If you have any questions, please contact the Kauai District Office at-274-3111.

Sincerely yours,



STEVEN M. KYONG, P.E.
District Engineer

SM:es

island school

3-1875 Kaumualii Hwy., Lihue, HI 96766-9597 Phone: 808 246-0233 Fax: 245-6053 email: info@ischool.org

RECEIVED
SCHOOL - KAUAI

2000 MAY 22 A 10:50

May 19, 2000

Mr. Steve Kyono, District Engineer
Highway Division
State of Hawaii
3060 Eiwa, Room 205
Lihue, Hawaii 96766

RE: Widening of Kaumualii Highway to Four Lanes

Dear Mr. Kyono:

I write in support of widening Kaumualii Highway to four lanes, where it fronts the new middle school and Kilohana. A new stoplight will control traffic entering and leaving the roadway to the new school. Without the widening, cars traveling to and from Lihue will encounter long lines while awaiting light changes. The four lanes are needed.

In addition, as we have discussed, we still would like to pursue the idea of constructing an entryway on the mauka side of Kaumualii, opposite the road leading to the new middle school. This would provide access to Kilohana as well as an additional entry and egress to Kauai Community College and Island School.

Thank you for your consideration of these matters.

Yours very truly,

Robert Springer
Robert Springer
Head of School



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HEAD OF SCHOOL

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VTA PRESIDENT

Accredited by the Western Association of Schools and Colleges

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000686

July 5, 2000

Mr. Robert Springer
Head of School
Island School
3-1875 Kaumualii Highway
Lihue, Hawaii 96766-9597

Dear Mr. Springer:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments, which have been numbered. We would like to provide the following response to these comments.

1. Construction of a north (mauka) leg of Nuhou Street is not part of this project. However, this project does not preclude construction of this road in the future. It should be noted that the planned Lihue-Hanamaulu bypass road would terminate in this vicinity. It is uncertain how this future road would affect your request.

We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es
Encl.

BILL KANE
P.O. BOX 511
LAWAI, KAUAI, HAWAII 96765
(808) 332-8883

June 6, 2000

State of Hawaii
Department of Transportation
Mr. Steve Kyono
3060 Eiwa Street
Lihue, Kauai, Hawaii 96766

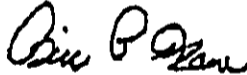
RE: Kaumualli Highway Widening

Dear Mr. Kyono:

It is about time a proposal was made to turn Kaumualli Highway into a four lane road. I am very excited to see this happen. I am in the construction industry and use this roadway quite often. The traffic in these areas at times are horrendous and the situation needs to be taken care of soon.

As our island grows with development, our roads also need to be expand to accommodate the growth. We cannot keep the present roads with all the changes we are expecting in the future. We cannot keep the present roads with all the tourism we are promoting. I support the proposed changes for Kaumualli Highway! Mahalo for allowing me to express my opinion.

Aloha,



Bill P. Kane

2000 JUN -7 P 1:15

RECEIVED
OFFICE - KAUAI

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000655

July 5, 2000

Mr. Bill Kane
P. O. Box 511
Lawai, Hawaii 96765

Dear Mr. Kane,

**Subject: Improvements to Kaunualii Highway
 Lihue to West of Maluhia Road
 Island of Kauai, Hawaii**

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. OYONO, P.E.
District Engineer

SM:es

SUZETTE KANE
P.O. BOX 511
LAWAI, KAUAI, HAWAII 96765
(808) 332-8883

June 6, 2000

State of Hawaii
Department of Transportation
Mr. Steve Kyono
3060 Eiwa Street
Lihue, Kauai, Hawaii 96766

RE: Kaumualii Highway Widening

Dear Mr. Kyono:

Please allow me this opportunity to make a few comments about the proposed widening of Kaumualii Highway from two lanes to four lanes extending from Lihue to Koloa's Maluhia junction. I feel it is about time and I am very anxious to see it happen!

I like how your planners are using the existing roadway and widening it with the least amount of disruption to the area. I also like the proposed "bike paths" that are planned. A lot of people are riding their bikes on Kaumualii Highway, and the bike paths makes this safer for them. Personally, as a person who enjoys biking and walking, I was very happy to see the path as part of the plan. It is important to have this path wide enough for the bikers so that they can ride safely, especially during the times of day when the sun in the east and west impairs the vision of drivers on the roadway.

Mr. Kyono, thank you very much for allowing me to express my opinions and I hope to see this plan put into effect.

Sincerely,

Suzette M. Kane

Suzette M. Kane

2000 JUN -1 P 1:42

RECEIVED
OFFICE - KAUAI

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000656

July 5, 2000

Ms. Suzette Kane
P. O. Box 511
Lawai, Hawaii 96765

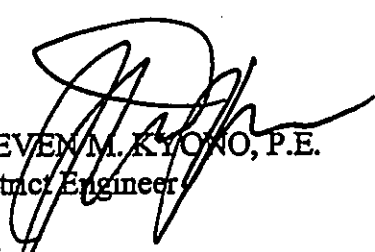
Dear Ms. Kane,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

BENJAMIN J. CAYETANO
GOVERNOR



KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

IN REPLY REFER TO:

HWY-KE 4.000657

July 5, 2000

Mr. Charlie King
4330 Kukui Grove Street
Lihue, Hawaii 96766

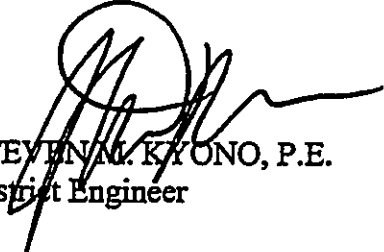
Dear Mr. King,

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000658

July 5, 2000

Reverend Paul Kirchner
Lihue Lutheran Church
Lihue, Hawaii 96766

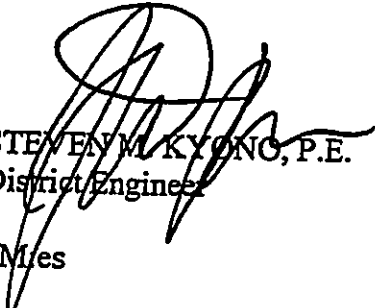
Dear Reverend Kirchner,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONG, P.E.
District Engineer

SM/ies

Public Comment Form
Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: Ernie Lau

Address: P.O. Box 1700

Lihue, HI 96766

Telephone (day): 245-5400

Telephone (eve): _____

Please make any comments below:
(return by June 7, 2000)

Can we provide a ^{better} separation between traffic & bike lanes in the 50mph highway section? (e.g. rail or berm)

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000682

July 5, 2000

Mr. Ernie Lau
P.O. Box 1706
Lihue, Hawaii 96766

Dear Mr. Lau:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments. We would like to provide the following response to these comments.

1. Guardrails will not be placed between the travel lane and the three-meter (10 feet) wide shoulders, which can be used by cyclists, because that would effectively eliminate the use of the wide shoulder. A bike path physically separated from the highway will not be provided because demand for such a facility does not justify its cost.

We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KONO, P.E.
District Engineer

SM:es
Encl.

Public Comment Form
Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: Ann Leighton

Address: 4555 Polulu Rd

Kapaa 96746-1562

Telephone (day): 639-3249

Telephone (eve): 822-7800

Please make any comments below:
(return by June 7, 2000)

Good project - good bicycle lanes. Please don't
forget, however, about Kapaa gridlocks - all day
every day.

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000659

July 5, 2000

Ms. Ann Leighton
4555 Pouli Road
Kapaa, Hawaii 96746

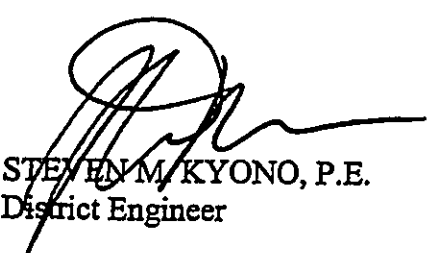
Dear Ms. Leighton,

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

MARTIN STEEL CONSTRUCTORS, INC.

P. O. Box 478, Eleele, Kauai, Hawaii 96705
Phone: (808) 335-5844 - Fax: (808) 335-3381

Contr's Lic. No.
BC - 07337

June 7, 2000

Mr. Steve Kyono, District Engineer
Dept. of Transportation
3060 'Eiwa Street
Lihu'e, HI 96766

Dear Steve:

Martin Steel Constructors employs between 15 and 30 people, depending on work available, who are nearly always on the road between our fabrication plant in Port Allen and points East. We use Kaunualii Highway a considerable amount and have done so for over 20 years. As the years go by we have noticed a steady increase in the amount of traffic. The increased traffic translates to a decrease of productivity for our company and a increase in cost to our customers.

A four lane Kaunualii Highway from Lihu'e to Maluhia Road is needed. By the time the studies are done, planning is complete, and funding secured we will have a crisis to rival that of the North bound traffic out of Lihu'e. Then the entire island will be in gridlock.

We encourage your department to complete the Environmental Assessment, discourage the nay-sayers who are calling for a full blown EIS if one is not needed and proceed with the planning and construction of the new highway as soon as possible.

Thank You.

Respectfully yours
Martin Steel Constructors, Inc.

Fel Martin
Fel Martin, President

RECEIVED
SYS - KAUAI
2000 JUN -7 P 1:34

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3080 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000660

July 5, 2000

Mr. Hal Martin, President
Martin Steel Constructors, Inc.
P. O. Box 478
Eleele, Hawaii 96705

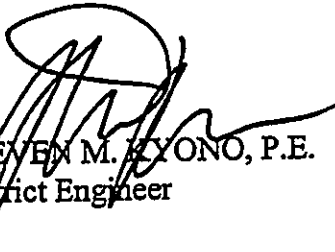
Dear Mr. Martin,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

Public Comment Form
Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

RECEIVED
HYS - KAUAI

2000 JUN -6 P 12: 10

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: Annie McEveety

Address: 4538 HOOMANA ROAD

Telephone (day): 808 246 9056

Telephone (eve): L

Please make any comments below:
(return by June 7, 2000)

Please see attachment:

BELOW ARE COMMENTS PERTAINING TO MY HOME @ 4538 HOOMANA AND THE CONSTRUCTION OF A ROAD REPLACING IT:

ATTN: STEVE

1. WE ALL KNOW THE HOME IS VERY WELL BUILT AND OF HISTORICAL VALUE. NOT TO MENTION MY PERSONAL ATTACHMENT TO IT.

2. THE ROOMS ARE BIG WITH HIGH CEILINGS, WINDOWS ARE ALL DOUBLE HUNG AND PROVIDE OPTIMUM BREEZE WAYS. THE HOUSE IS VERY COMFORTABLE AND SOLID.

3. THE TWO CAR GARAGE AND CARPORT IS A BIG PLUS ALONG WITH PROVIDING GREAT STORAGE IT ALSO PROVIDES PROTECTION FOR OUR CARS

4. THE PLACE IS VERY QUITE AND PEACEFUL.

5. THE LOCATION IS AMAZING. IT IS SO CLOSE TO LIHUE AND TOWN YET YOU FEEL AS IF YOUR IN A COUNTRY LIKE SETTING.

6.. THE PROPERTY THAT SURROUNDS THE HOME IS LUSH WITH FULL MATURE TREES, A NICE BIG LAWN IN THE FRONT AND BACK WITH LOTS OF PRIVACY.

7. HOOMANA ROAD ITSELF IS MAGICAL IN IT'S OWN WAY. IT HAS LOTS OF BEAUTY SEEN NO WHERE ELSE ON THE ISLAND. IT HAS SUCH HISTORICAL VALUE. I WOULD LIKE TO SEE THAT REMAIN THE SAME. I WOULD NOT WANT TO JEOPARDIZE OTHER HOMES IN THE PROCESS OF SAVING ONE.

THANK YOU FOR YOUR TIME AND CONSIDERATION:

Annie McEvety

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000678

July 5, 2000

Ms. Annie McEveety
4538 Hoomana Road
Lihue, Hawaii 96766

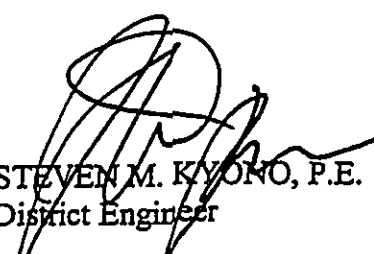
Dear Ms. McEveety:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments about your home. We are deeply sorry that the project will displace your residence. I want to assure you that we considered several alternatives for the re-alignment of Hoomana Road that would avoid any residential displacements, but these other alternatives would have serious disadvantages, as pointed out by the German Hill community. Hopefully, we can come to quick settlement to ease your burden.

Please feel free to contact me at 274-3111 if you have any questions. If you have any questions regarding your rights and benefits as a displaced person, please contact Mr. Cary Hanaoka or Mr. Michael Amuro of our Right-of-Way Branch at 692-7332. We will be in touch at the appropriate time as this project moves forward.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es
Encl.

Richard McSheehy
P.O. Box 458
Kalaheo, HI 96741

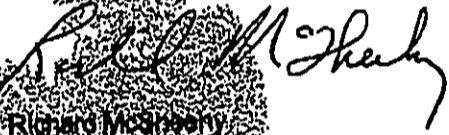
May 31, 2000

Mr. Steve Kyono
State Department of Transportation
3060 Elwa Street
Lihue, HI 96766

Dear Mr. Kyono:

Recently I read in the Garden Island about plans to construct the new four lane divided highway between Lihue and Maluhia Road. After some thought, I wrote a letter to the editor of the Garden Island expressing some alternative ideas. In case you did not happen to see the letter, which was published in today's paper, I am enclosing a copy for your perusal. I would be interested in hearing your comments. I am also sending a copy of the letter to Mayor Kusaka.

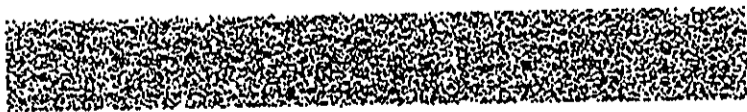
Sincerely yours,


Richard McSheehy

2000 JUN -2 A 10 42

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OFFICE - KAUAI

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Editor
The Garden Island

Dear Sir:

I recently read that plans are well underway for a four lane divided highway that would extend from Lihue to Maluhia Road. Although I have heard discussion of this from time to time, I had not realized that we were this close to approval of the plans. I would like to offer a few comments on the plans, as I understand them now. I have had the good fortune to travel throughout much of the United States and many foreign countries, yet I have never seen a more beautiful place than Kauai. It is from a desire to maintain and protect this special island that I offer these comments. I realize that these proposals I make may be too costly or for some reason not possible to implement; however, I believe I should at least voice them anyway.

1 Like many other Kauai residents, I am a transplant from the mainland and I grew up in the midst of major road construction projects and have traveled many miles on various superhighways throughout the United States. Very few highways have ever left me with a feeling of appreciation for the countryside as I drove along. However, there are several parkways on the mainland that do preserve the scenic beauty of the environment. Some parkways separate the traffic traveling in opposite directions by as much as several hundred yards, so you are not really aware there is traffic flowing in the opposite direction. This provides a much cleaner looking and scenic environment for the traveler. Also, without the oncoming traffic passing by, there is less sense of speed and commotion. I understand from your article that the current plan for Kauai's divided highway is to separate the opposing lanes by up to 32 feet. While this may seem like a large separation between traffic lanes, in reality it isn't. I believe it would be preferable to consider our road to be a parkway rather than a highway and separate the opposing lanes of traffic by as much as 100 yards or more if possible. This would amount to building an additional two-lane highway, similar to Kaunualii Highway at some distance to the north or south. Kaunualii Highway would then become a one-way road while the new road would be one way in the other direction. Together, these would become the Kaunualii Parkway. Admittedly this is probably not possible within the confines of Lihue town; however, I would hope that between Puhi and Maluhia Road a larger separation than 32 feet could be obtained.

2 The newspaper article also stated that bicycle paths would also be created as part of the highway construction project. Some years ago, I had the good fortune to spend some time in Denmark and I was very impressed with the bicycle paths that have been created there. These paths are completely separate from the highways, although they are more or less parallel to them. They seem to be built 20 to 30 yards from the road and pass through woods and fields, safely removed from the high-speed highway traffic. I would suggest that this sort of bicycle path be considered for Kauai instead of the prevailing concept, which locates bicycle paths immediately adjacent to vehicular traffic lanes. Both tourists and local people would enjoy separate bicycle paths, such as those built in Denmark.

It may seem extravagant to wish for a divided highway with a very wide median strip; and separate bicycle paths are surely more costly than those that are incorporated into a highway. If this project were to be done in another place it might not matter; however, I believe Kauai is a special place and deserves special treatment. The highway and bicycle paths we build tomorrow will likely be in use for a hundred years or more. If we can find a way to build these roads that allows us, and all who follow us, to enjoy the serenity and beauty of this island, then we will have truly been good stewards of the land.

Richard McSheehy,
Kalaheo

11-11-1971

HWY-K 4.000557

July 31, 2000

Mr. Richard McSheehy
P. O. Box 456
Kalaheo, Hawaii 96741

Dear Mr. McSheehy:

Subject: Improvements to Kaunualii Highway, Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on, and concern about the Highways Division's proposal to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway between Lihue and Maluhia Road. The following are responses to your comments:

Your first comment asks us to consider separating the east and west bound travel lanes by a distance of at least 100 yards, which is substantially greater than the proposed 30 feet of separation. This suggestion would require substantially more right-of-way than currently proposed because most of the area between the travel lanes would be unusable, even for agriculture. Therefore, we would have to purchase this land which would substantially increase the cost of the project. The larger project footprint would also potentially increase the environmental impacts of the project.

Your second comment suggests the placement of bike paths 20 to 30 yards off of the highway as part of the proposed project. Similar to our proposal to widen the median strip, placing bike paths away from the travel lanes would substantially increase the cost of the project because additional right-of-way would be required between the roadway and the bike path. The demand for bike paths as you suggest, would not justify the additional project expenditure.

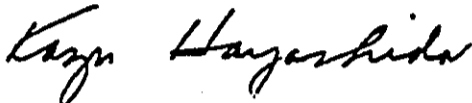
In addition, widening the highway median strip, and/or, placing bike paths substantially away from the travel lanes will lead to increases in highway facilities maintenance costs.

Mr. Richard McSheehy
Page 2
July 31, 2000

HWY-K 4.000557

Again, thank you for your thoughtful comments and appreciate your concern for the future of Kauai. If you have any questions about the Kaunualii Highway project, please contact Mr. Steve Kyono, Kauai District Engineer, at 274-3111.

Very truly yours,



KAZU HAYASHIDA
Director of Transportation

GY:wb

c: Honorable Benjamin Cayetano (00:0606437)
bc: HWY-K

10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

ABEL MEDEIROS
P.O. BOX 563
KOLOA, KAUAI, HAWAII 96756
(808) 742-6718

June 6, 2000

Mr. Steve Kyono
State of Hawaii
Department of Transportation
3060 Eiwa Street
Lihue, Kauai, Hawaii 96766

RE: Kaunualii Highway Widening

Dear Mr. Kyono:

As a long time Kauai resident of 80 years, I would like to tell you that I am FOR the expansion of the Kaunualii Highway, changing it from two lanes to four lanes. I feel this expansion should have happened a long time ago, and I am happy to see that a proposal has been made. As a former Legislator and County Councilman, you have my best wishes for a successful project.

Aloha,



Abel Medeiros

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OFFICE - KAUAI

2000 JUN -7 P 1:42

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000661

July 5, 2000

Mr. Abel Medeiros
P. O. Box 563
Koloa, Hawaii 96756

Dear Mr. Medeiros,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KIONO, P.E.
District Engineer

SM:es

Public Comment Form
Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: Owen Moe

Address: P.O. Box 656
Kekaha Hi 96752

Telephone (day): 8 246-4332

Telephone (eve): 337-1585

Please make any comments below:
(return by June 7, 2000)

There should be a Citizen Advisory Committee
formed ~~for~~ to work with the DOT in solving
the Traffic Problems on Kauai. Similar to
the General Plan Update CAC.

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000684

July 5, 2000

Mr. Owen Moe
P.O. Box 656
Kekaha, Hawaii 96752

Dear Mr. Moe:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

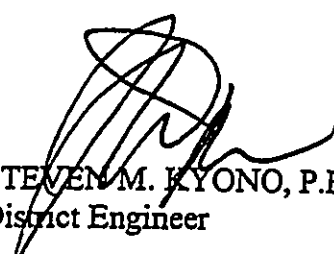
Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments. We would like to provide the following response to these comments.

1. Citizens' Advisory Committee was formed to help prepare the Kauai Long-Range Land Transportation Plan (May 1997). The proposed project was recommended in the Long-Range Plan. A Citizens' Advisory Committee will be re-formed when this transportation plan is updated.

We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es
Encl.

Public Comment Form
Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: LINDA NICHOLS

Address: PO Box 26

Koloa HI 96756

Telephone (day): —

Telephone (eve): —

Please make any comments below:
(return by June 7, 2000)

Cycle lanes are a FANTASTIC IDEA, it's so dangerous to bike anywhere at present, & it may help reduce no. cars on road.

The highway is necessary, any cons are far outweighed by the pros. The consequences of no action are too great to not go ahead with the project.

MY 100% SUPPORT!

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000662

July 5, 2000

Ms. Linda Nichols
Goodfellow Brothers, Inc.
P. O. Box 26
Koloa, Hawaii 96756

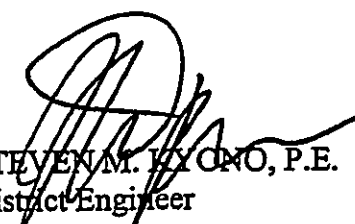
Dear Ms. Nichols,

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. LYONS, P.E.
District Engineer

SM:es

Public Comment Form
Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: MAC NICHOLS

Address: PO Box 26

KOLA HI 96756

Telephone (day): 245 9641

Telephone (eve): _____

Please make any comments below:
(return by June 7, 2000)

Awesome forethought. This is a
necessary increase in roadways for KAUAI.
Pedestrian & Bicycle access a must for such
a beautiful place.

Next will have to be Kapaa town
road closure and bypass construction.

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000663

July 5, 2000

Mr. Mac Nichols
Goodfellow Brothers, Inc.
P. O. Box 26
Koloa, Hawaii 96756

Dear Mr. Nichols,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

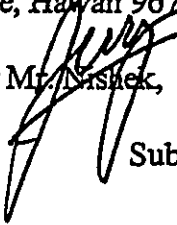
IN REPLY REFER TO:

HWY-KE 4.000664

July 5, 2000

Mr. Jerry Nishek
Kauai Nursery
3-1550 Kaumualii Highway
Lihue, Hawaii 96766


Dear Mr. Nishek,

 Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000675

July 5, 2000

Mr. Leland Nishek
Kauai Chamber
3-1550 Kaumualii Highway
Lihue, Hawaii 96766

Dear Mr. Nishek:

**Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii**

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We have reviewed your oral comments made at the project's public hearing, and would like to provide the following responses. If we have misinterpreted any of your comments, please let us know.

Comment 1. The overhead utility lines should be placed underground. Commentor believes that the project will underground utility lines.

Response. At this time, we do not plan to underground any displaced overhead utility lines along Kaumualii Highway because of its high cost. However, we will revisit this issue during the design phase of the project when we have a clearer understanding of the overall cost of the project. Since the details of utility relocations have not been determined, the relocated utility lines were not shown in the visual simulation of the modified Lihue Mill Bridge. There was no intent to mislead the public.

Mr. Leland Nishek
Page 2
July 5, 2000

HWY-KE 4.000675

Comment 2. The project should include landscaping. Landscaping does not have to be continuous. For example, groupings of trees could be placed at certain locations.

Response. We understand the importance of maintaining the natural beauty of Kauai. Therefore, a substantial portion of the construction budget will be set aside for landscaping. Plants adaptable to the local growing conditions will be used because much of the highway will not have irrigation. When possible, native trees and shrubs will be used. Interested organizations will be consulted for suggestions about plantings. Your suggestion will be considered.

We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,



STEVEN M. IYONO, P.E.
District Engineer

SM:es

Public Comment Form
Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

2000 JUN -1 A 10:39

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The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: Tracey and Ric Ochoa

Address: P.O. Box 726

Lauai, HI 96765

Telephone (day): _____

Telephone (eve): 332-7714 leave message

Please make any comments below:
(return by June 7, 2000)

It is about time that we expand Kaumualii Highway to four lanes. Having to fight traffic coming into Lihue from the West Side every morning is not fun and a waste of time, not to mention a waste of gas. In the afternoon, it is even worse. Traffic starts building up right after schools let their students out for the day and continues until after pau hana. What should be a pleasant drive turns into a stressful and dangerous one. Traffic will only get worse with the addition of much needed new communities and the re-opening of renovated hotels. We are already looking at worsening traffic conditions with the Rice Street Reconstruction, the Kaumualii Highway Acceleration Lane at Maluhia Road and the Kaumualii Highway Resurfacing projects. Will we have to wait until we have another Kapaa? By that time, it will be such a hassle coming into and going out of Lihue that people are going to find other options.

Another situation that happens that causes traffic jams is car accidents. How many times has traffic come to a standstill because of an accident. If we had more lanes, the possibility of keeping lanes open to allow for traffic flow is increased. I personally have been stuck in this traffic because I had no other choice. Residents were missing appointments and tourists were missing flights. Not having another route to Lihue is unacceptable and expanding Kaumualii Highway to four lanes could help solve the problem.

Lastly, think about times of disaster. It is not a question of if, it is a question of when another disaster will hit this island. Four lanes means better flowing traffic in times of evacuation or for relief efforts after the fact.

Please do not let traffic between Lihue and the West Side become worse. This is enough already. Let's be proactive, not reactive.

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:
HWY-KE 4.000665

July 5, 2000

Mr. & Mrs. Ric Ochoco
P. O. Box 726
Lawai, Hawaii 96765

Dear Mr. & Mrs. Ochoco,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

Anne E. O'Malley
P.O. Box 1806
Koloa, HI 96756

RECEIVED
MAILS - KAUAI

2000 JUN -6 A 11:51

June 2, 2000

Steven Kyono, District Engineer FAX 274-3116
DOT Room 205
3060 Eiwa St.
Lihue, HI 96766

Dear Steven Kyono:

Mahalo for choosing a career in life that has the power to make others' lives better through the things you design and build. In consideration of DOT plans to develop four-lane highways, I offer the following.

- 1 | Keep the small-town and rural flavor that visitors and residents alike enjoy about Kaua'i. Prohibit the development of four-lane highways now and in the future. Alternative routes with two lanes, such as the Kapa'a bypass make more sense for a community whose number one industry is tourism. Such routing has the added value that when repair is needed, all traffic could be shunted to only one of the roads, thereby minimizing traffic congestion or upset during construction.
- 2 | Another thoroughly underexplored and underutilized yet practical solution to traffic lies in creating reliable, reasonably-priced public transportation--perhaps even a light rail that travels the island. Where good public transportation exists, people use it. And speaking of public transportation, add to each conveyance tracks for backpacks and/or bikes.
- 3 | We have a forgiving climate that allows for all manner of self-propelled transportation. Install more bicycle lanes separate from road shoulders and a minimum of 30 yards from the highway for safety from traffic and exhaust fumes for bicyclists, small motor scooters, roller bladers, skateboarders and even walkers. These are alternative forms of transportation which we ought to encourage.
- 4 | Preserving the rural charm of Kaua'i is a must. Can we do less than our forefathers who planted the swamp mahogany on Maluhia Road, gateway to the South Shore? Trees--lots of them, chosen for their growth and minimal maintenance--should line new Kaua'i roads. Several years ago, Kaua'i was fortunate to have Jeff Lacey in the planning department who introduced us to forward-looking models derived from projects in the Connecticut River Valley. There, highways unfolded past greenways planted with trees. These greenways wrapped around small commercial complexes, preserving the view and reducing the tacky strip-mall look.
- 5 | Traffic lights one block apart seem to be cropping up in Lihue. Are they part of planned growth? Will new roads development take advantage of traffic flows, bypasses or other means to reduce the quantity of stoplights?

In short, I ask that you and the DOT planners give every consideration to preserving beauty and rural charm on Kaua'i. Your decisions on what to do and how to do it are tough ones. It is too easy to sell out this island with the claim that the money isn't there. It happened after 'Iniki when the 60- or 70-foot cement power poles went up instead of putting lines underground. Levy a tax. Write a grant. Set up a charity. Find a donor. Be creative in the problem solving. Unlike many of us whose work isn't seen, yours and that of the DOT is. For generations to come, people will drive, cycle and walk the roads you pour. Make them memorable.

Sincerely,

Anne E. O'Malley

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000685

July 5, 2000

Ms. Anne E. O'Malley
P.O. Box 1806
Koloa, Hawaii 96756

Dear Ms. O'Malley:

**Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii**

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments, which have been numbered. We would like to provide the following responses to these comments.

1. To address the project's purposes and needs, the suggested two-lane alternative route would have to be placed parallel to Kaumualii Highway between Koloa and Lihue. We do not favor construction of a new roadway at this time when the expansion of the existing Kaumualii Highway addresses the project's purposes and needs, without significant environmental and social impacts. Creation of a new highway alignment would probably result in greater adverse impacts than the proposed project.
2. We are highly supportive of public transportation because it leads to more efficient use of the highway system. We would support any improvements to the County's bus system. However, improving public transportation would not address all of this project's purposes and needs. The population of the project area now and in the foreseeable future will not support the construction and operation of a light rail transit system, which is expensive.

Ms. Anne E. O'Malley
Page 2
July 5, 2000

HWY-KE 4.000685

3. We suggest you contact the County Transportation Agency with regards to conveyance of backpacks and/or bikes on the County buses.

With the exception of freeways or similar types of highway, we agree that all State highways be shared by all users, including cyclists and pedestrians. Therefore, the expanded Kaumualii Highway will include three-meter (10 feet) wide shoulders, which can be used for cycling, and sidewalks in the urban sections of the highway. Having a separate parallel bike path several meters from the roadway would substantially increase the cost of the project because right-of-way would have to be purchased between the roadway and the bike path. The demand for such a bike/pedestrian path along the entire length of the project does not justify the cost of such a facility.

4. We understand and agree with the importance of maintaining the natural beauty of Kauai. Therefore, a substantial portion of the construction budget will be set aside for landscaping. Plants adaptable to the local growing conditions will be used because much of the highway will not have irrigation. When possible, native trees and shrubs will be used, and some of the trees displaced by the highway will be relocated to locations along the widened Kaumualii Highway. Interested organizations will be consulted for suggestions about plantings.
5. Traffic lights are installed at roadway intersections for safety reasons. Depending on the type of roadway constructed, it may or may not include traffic signals. Kaumualii Highway has traffic signals because adjacent communities need to have safe access to the highway.

We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN KYONO, P.E.
District Engineer

SM:es
Encl.

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000674

July 5, 2000

Mr. Fred Reyes
5207 Hauaala Road
Kapaa, Hawaii 96746

Dear Mr. Reyes:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We have reviewed your oral comments made at the project's public hearing, and would like to provide the following response. If we have misinterpreted your comments, please let us know.

Comment. Suggests that a westbound to southbound ramp be constructed at the Kaumualii Highway / Maluhia Road intersection because the commentator believes that it will be difficult for motorists to cross two lanes of traffic during the morning peak period.

Response. The projected traffic volumes at the Kaumualii Highway / Maluhia Road intersection do not warrant a westbound to southbound ramp. Nevertheless, we do not favor a ramp at this intersection because it would block views of the Maluhia Road Tree Tunnel, a valuable natural and scenic resource. A preferable solution would be the installation of traffic signals. It will be determined during the design phase whether this intersection warrants traffic signals.

We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,

A handwritten signature in black ink, appearing to read "S. M. Kyono".

STEVEN M. KYONO, P.E.
District Engineer

SM:es

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000673

July 5, 2000

Mr. Joseph Rosa
4611 Ekolu Street
Lihue, Hawaii 96766

Dear Mr. Rosa:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We have reviewed your oral comments made at the project's public hearing, and would like to provide the following response. If we have misinterpreted your comments, please let us know.

Comment. Suggest an alternative be considered that would utilize an existing, but inactive, Grove Farm cane haul road, which passes through Haupu Range via a tunnel.

Response. We do not favor construction of a new highway, even though it follow an existing cane haul road alignment, when the expansion of the existing Kaunualii Highway addresses the project's purposes and needs, without significant environmental and social impacts.

We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,

A handwritten signature in black ink, appearing to read "S. M. Kyono".

STEVEN M. KYONO, P.E.
District Engineer

SM:es

Public Comment Form
Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

2000 MAY 31 A 10

RECEIVED
HHS - KAUAI

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: Roy Takatsuki
Address: Roy Takatsuki Construction Services
5269 Kihei Road
Kapaa, HI 96746
Telephone (day): 639-0388
Telephone (eve): same

Please make any comments below:
(return by June 7, 2000)

The expansion and widening of Kaumualii Highway is a concern and of interest to me because my construction company office is in Koloa and our work is island-wide. It is not unusual for me or my crew to criss-cross the island several times a day during the work week. The west wide traffic is a interesting mix of rental cars, commercial vehicles, agricultural and construction and military vehicles, equipment and the like along with the general publics vehicles. And any one or combination of tchse vehicles can make driving this highay frustrating because of the number of hills and no-passing zones.

An expanded highway is needed and sooner rather than later. I strongly support the department's plans that has been shared in the public meetings and public hearings. Please move forward as soon as possible.



BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000667

July 5, 2000

Mr. Tom Shigemoto
4090 Puaole Street
Lihue, Hawaii 96766

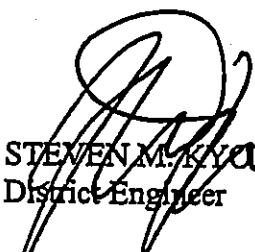
Dear Mr. Shigemoto,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

RECEIVED
DOTS - KAUAI

2000 JUN -6 A 11:49

June 4, 2000

Steven Kyono - District Engineer DOT
3060 Eiwa St. Rm 205
Lihue, HI 96766

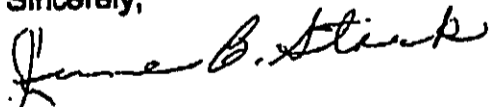
Dear Mr. Kyono:

I know years of studies and preliminary work have gone into the highway plans for a four lane highway from Lihue to the tree tunnel, and I appreciate the difficulties that people like you have in trying to plan for the uncertain future needs of Kaua'i. However, remembering the days when we moved here when the only traffic light was the one in the cane field I can't help but feel that putting in a four lane highway is the ultimate waving of the white flag of surrender to a vision of Kaua'i that most people, residents and visitors, don't want.

I accept that change is inevitable and that regardless of whether those of us who came only twenty some years, or whether our families came generations ago, we all have been part of forcing change on the island. Still in hindsight we can see that some of the changes have been made with lesser impact than others, that the height limit on buildings was a good decision regardless of the fierce opposition to it at the time that decision was made. The Waimea Plantation project to make the workers' homes into vacation cottages is another example of a change that was in keeping with Kaua'i history and beauty and still promoted the visitor industry.

1 | I don't think a four lane highway, as attractive a solution as it appears to be, is in the long
2 | range welfare of the island either for residents or for visitors. I traveled from Kalihiwai to Puhi
every day for fifteen years until I retired from KCC and I welcomed the morning cones and
the bypass road, both sensible improvements, and a bypass road around Kapa'a,
hopefully one that takes full advantage of already existing cane haul roads, may be
warranted. But I urge the DOT to reconsider a four lane highway on Kaua'i. If it absolutely
must be, then I do hope a separated bike path will be an integral part of the plan as well as
appropriate landscaping, not simply grass medians. Anyone who has traveled the Blue
Ridge Parkway appreciates the sensitivity to the lovely landscape of that four lane highway
which separates the opposing lanes completely and makes it a joy for a visitor to drive. I
hope the plans which you promote would be equally sensitive to the beauty of Kaua'i if
the white flag of surrender must be accepted.

Sincerely,



June B. Stark
Box 398
Kilauea, HI 96754

BENJAMIN J. CAYETANO
GOVERNOR



KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

IN REPLY REFER TO:

HWY-KE 4.000687

July 5, 2000

Ms. June B. Stark
P.O. Box 398
Kilauea, Hawaii 96754

Dear Ms Stark:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments, which have been numbered. We would like to provide the following responses to these comments.

1. The expanded Kaunualii Highway will include three-meter (10 feet) wide shoulders, which can be used for cycling, and sidewalks in the urban sections of the highway. Having a separate parallel bike path several meters from the roadway would substantially increase the cost of the project because right-of-way would have to be purchased between the roadway and the bike path. The demand for such a bike/pedestrian path along the entire length of the project does not justify the cost of such a facility.
2. A substantial portion of the construction budget will be set aside for landscaping. Plants adaptable to the local growing conditions will be used because much of the highway will not have irrigation. When possible, native trees and shrubs will be used, and some of the trees displaced by the highway will be relocated to locations along the widened Kaunualii Highway. Interested organizations will be consulted for suggestions about plantings.

We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONG, P.E.
District Engineer

SM:es

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000668

July 5, 2000

Ms. Karen Taketa
4756 Kua Road
Kalaheo, Hawaii 96741

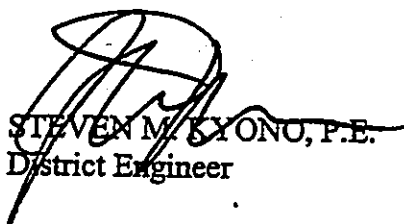
Dear Ms. Taketa,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

Richard A. Miller
PO Box 1456
6060 Waialeale Valley Road
Hanalei, Hawaii 96714-1456
Telephone: (808) 825-4634
Fax: (808) 825-1082
e-mail: dmiller@hawaiian.net

**TREEHOUSE
ENTERPRISES**

RECEIVED
MAY 31 - KAUAI

2000 JUN - 1 A 10:05

Fax:

To: Steven Kyono - District Engineer DOT From: TREEHOUSE ENTERPRISES
Fax: 274-3118 Pages: Two (2)
Phone: Date: 06/01/00
Re: 4 lane highways on Kauai CC:

Urgent For Review Please Comment Please Reply Please Recycle

Comments:

Regarding your plans for the widening and expansion of the existing roads on this island:

1. No 4 lane highways (or divided roads) on Kauai now or in the future
2. Think in terms of alternative routes with 2 lanes in another place, *INSTEAD OF 4 LANES*
separated by at least 100 yards.
Some advantages include:
1. Keeps the country look which is what we and tourists want
2. When repair is needed ALL traffic could go on the other road.
3. No traffic congestion or upset during the construction
3. Trees or bushes along all roads - not just grass (present plan)
4. Underground wires along all widened roads or new roads while it is dug up
5. As few new traffic lights as possible
6. No 4 lane widening in Lihue (in the plans now)

June 1, 2000

5 | 7. Consider the problem — put a limit on cars allowed into the island, BOTH FOR SALE AND RENTAL.
All you will be doing with more lanes of roads is to allow even more
congestion on this little island. LOOK AT OAHU..... LEARN FROM
PAST MISTAKES. THAT PLACE IS A STINKING MESS BECAUSE
OF ALL THE TRAFFIC AND NO RESTRICTIONS.

6 | 8. Increase public busses. The bus should go to the airport & run more
frequently

7 | 9. No shoulders marked as bike paths. They are death traps not bike paths.
Bike paths should be a minimum of thirty yards from the highway for safety
from the traffic and exhaust fumes

8 | 10. No strip malls or development along new highways

9 | 11. NO advertising along and "clutter" along new roads

12. In addition, when making repairs on the road by the dry caves on the north end
ABSOLUTELY DO NOT WIDEN THAT ROAD.

Leave as is with a culvert under the road.

You are destroying what people love to come here to see and experience.

Leave well enough alone and stop trying to make this island like Oahu.

What we have here now and what this island has to offer, is why people come here and
they do not want to see any more cement poured here. Maybe you people
should get out and talk to the visitors and to the people who live here. They
don't want it and WE don't want it. IT IS TIME YOU LISTENED!!!!!!

Dick Miller

P.O. Box 1455

Hanalei, HI 96714

828-1521

fax: 828-1082

● Page 2

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000683

July 5, 2000

Mr. Richard A. Miller
Treehouse Enterprises
P.O. Box 1458
Hanalei, Hawaii 96714-1458

Dear Mr. Miller:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments, which have been numbered. We would like to provide the following responses to these comments.

1. What is being suggested is a 100 yard wide median, which is substantially wider than the approximately ten-meter (32 feet) wide median being proposed. This suggestion would require substantially more right-of-way than currently proposed because most of the area between the travel lanes would be unusable, even for agriculture. Therefore, SDOT-HWY would have to purchase this land, which would substantially increase the cost of the project. In addition, creating a new roadbed offset so far from the existing highway could cause substantial adverse environmental impacts.
2. A substantial portion of the construction budget will be set aside for landscaping. Plants adaptable to the local growing conditions will be used because much of the highway will not have irrigation. When possible, native trees and shrubs will be used, and some of the trees displaced by the highway will be relocated to locations along the widened Kaumualii Highway. Interested organizations will be consulted for suggestions about plantings.

Mr. Richard A. Miller
Page 2
July 5, 2000

HWY-KE 4.000683

3. At this time, we do not plan to underground any displaced overhead utility lines along Kaunualii Highway because of its high cost. However, we will revisit this issue during the design phase of the project when we have a clearer understanding of the overall cost of the project.
4. The decision to place traffic signals at intersections along Kaunualii Highway will be made during the design phase and will be based on traffic conditions.
5. Limiting the number of vehicles on Kauai is beyond our authority.
6. Although increasing the bus fleet of the County's bus system would improve public transportation on the island, it would not address all of this project's purposes and needs. Nevertheless, we are highly supportive of public transportation because it leads to a more efficient use of the highway system.
7. The expanded Kaunualii Highway will include three-meter (10 feet) wide shoulders, which can be used for cycling. Placing a bike path a minimum of 30 yards from the highway would substantially increase the cost of the project because right-of-way would have to be acquired between the roadway and the path. The demand for such a bike/pedestrian path along the entire length of the project does not justify the cost of such a facility. Additionally, the level of environmental impact would increase.
8. Zoning along the highway is under the jurisdiction of the County.
9. Advertising along the highway is not allowed, other than signage on business establishments per County regulations.

We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. AYONO, .E.
District Engineer

SM:es
Encl



**Unlimited Construction
Services Incorporated**

May 18, 2000

Mr. Steven Kyono, District Engineer
Highways Division, Kauai District
State of Hawaii Department of Transportation
3060 Eiwa Street, Room 205
Lihue, HI 96766

RECEIVED
HIGHWAYS - KAUAI
2000 MAY 22 A 10:44

**Subject: Improvements to Kaunualii Highway
Lihue West to Maluhia Road**

Dear Steve,

I am in favor of the proposed improvements. The benefits of better traffic operations, more capacity, and improved highway safety far outweigh the concerns of the historic significance of some rails on the Lihue Mill Bridge.

Your plan takes care of the environmental concerns by preserving wetlands. The loss of agricultural fields is insignificant given the enormous amount of agricultural land on Kauai, and this land is not currently in use.

Please expedite this project as it will benefit the commuter and reduce exposure to traffic accidents. Thank you for the foresight of the DOT in planning and funding a project like this.

Sincerely,
UNLIMITED CONSTRUCTION SERVICES, INC


Randy Fintay
Vice President

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000669

July 5, 2000

Mr. Randy Finlay
Vice President
United Construction Services Incorporated
P. O. Box 3327
Lihue, Hawaii 96766


Dear Mr. Finlay,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

03 JUL 10 09 11 AM '00

P.O. Box 10558
Honolulu, HI 96816
(808) 737-8410 cmw@aloha.net

Carol Wilcox

June 7, 2000

Mr. Steve Kyono, Kauai District Engineer
State DOT Highways Division
3060 Eiwa St, Rm.205
Lihue, Kauai 96766

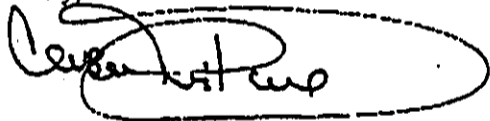
RECEIVED
STATE - KAUAI
2000 JUN 13 A 11:06

RE: Project No. 50DL-02-95 Improvements to Kaunualii Highway, Lihue to Maluhia Road

Dear Steve:

Thank you for the opportunity to comment on the above project. The EIS does not indicate that there will be any long-term impact to the ingress-egress at our historic/commercial property at Kilohana. That being the case, we have no comment on this project. If that is not the case, then the EIS is deficient in that respect.

Sincerely,



Carol Wilcox

Malama Pono

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO

HWY-KE 4.000688

July 5, 2000

Ms. Carol Wilcox
P.O. Box 10558
Honolulu, Hawaii 96816

Dear Ms. Wilcox:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

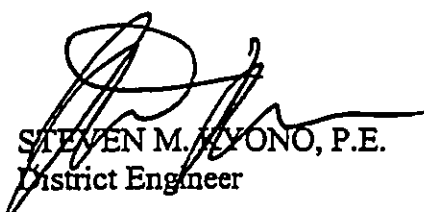
Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments. We would like to provide the following response to these comments.

1. In the vicinity of Kilohana, the proposed widening will occur on the south (makai) side, away from the property. Access to Kilohana will not be affected once the widening is completed. During construction, access will be maintained at all times, but detours may be required.

We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. MYONO, P.E.
District Engineer

SM:es
Encl

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000670

July 5, 2000

Mr. Douglas M. Yoneji
3180 Umi Street
Lihue, Hawaii 96766

Dear Mr. Yoneji,

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

CHAPTER SIX

Finding of No Significant Impact

CHAPTER 6 FINDING OF NO SIGNIFICANT IMPACT

This chapter discusses the basis of the Findings of No Significant Impact (FONSI) for the Proposed Improvements to Kaunualii Highway, Island of Kauai, County of Kauai, Hawaii.

The State of Hawaii Department of Transportation, Highways Division (SDOT) made an early assessment that a FONSI is appropriate based on their understanding of the environmental impacts of the project at that time. Following public release of the project's Draft EA, no new information was provided to indicate that the project would generate a significant environmental impact. Therefore, SDOT and FHWA have prepared this Final EA, and will publicly announce the official FONSI determinations under the Hawaii EIS Law (Chapter 343 Hawaii Revised Statutes--HRS) and the National Environmental Policy Act (NEPA). The official FONSI determinations conclude the environmental review process under these regulations. The environmental and construction-related permits listed in Chapter 4 still need to be obtained, however.

6.1 HAWAII REVISED STATUTES, CHAPTER 343

In accordance with Chapter 343 HRS and Hawaii Administrative Rules (HAR), Sections 11-200-9 and 11-200-11.2, the SDOT, as the approving agency at the State level, has rendered a FONSI assessment for the proposed project. This assessment is based on an evaluation of project impacts in relation to the "Significance Criteria" specified in HAR 11-200-12(b). The nature of the project's impacts is discussed in detail in Chapter 4.

The Significance Criteria appear below in italics, followed by a discussion of the project in relation to the specific criterion. References to the "proposed project" are to the Build Alternative as presented in Chapter 2.

Involves an irrevocable commitment to loss or destruction of any natural or cultural resource - The proposed project will not cause the loss or destruction of any natural, historic or cultural resource. Such resources include the Maluhia Road tree tunnel, the

historic Lihue Mill Bridge, and the German Hill Historic District. No cultural resources were identified in the project area.

The tree tunnel will be unaffected by the proposed project because the widening will occur on the north (mauka) side of Kaumualii Highway at the Maluhia Road intersection, away from the tree tunnel.

The proposed project will replace the railings of the historic Lihue Mill Bridge. However, they are already severely rusted and decrepit, and will eventually be replaced with or without this project because of their poor condition, and they will need to be replaced by new railings that meet current highway safety standards. Therefore, since their replacement will be required in any case, this project is not causing their loss or destruction. Natural processes have largely caused their loss already.

While a house at the southern edge of the German Hill Historic District will be displaced, this loss will be mitigated, and the integrity of the Historic District will be preserved.

Curtails the beneficial uses of the environment - The proposed project will not curtail the beneficial uses of the environment. The many recreational activities and environmental resources available on Kauai will not be adversely affected by the proposed project. Access to recreational and natural resources will be improved, and the filling of a wetland area has been minimized to a substantial degree, and any loss wetland will be replaced.

Conflicts with the State's long-term environmental policies or goals and guidelines expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders - The proposed project is consistent with the environmental goals and objectives of the State.

Substantially affects the economic or social welfare of the community or State - Although the proposed project will require additional right-of-way, the only displacement that will occur is one residence at the extreme southern edge of the German Hill neighborhood in association with the realignment of Ho'omana Road. No neighborhood will be split, and the remaining houses and church in German Hill will remain a cohesive neighborhood unit. Therefore, the proposed project will not adversely affect social or economic activities in any

neighborhood or community along Kaumualii Highway, in the region, or on the island. Improved mobility provided by the capacity enhancement of the roadway will advance economic and social conditions.

Substantially affects public health - The proposed project will not detrimentally affect public health. It will improve the safety of motorists, bicyclists and pedestrians traveling on Kaumualii Highway. Motor vehicle safety will improve by converting the highway from an undivided to a divided configuration, reducing the chance of head-on collisions. Increased laneage will more safely convey existing and future traffic movements. Intersection improvements will enhance the safety of those turning.

Bicycle safety will improve by the widening of roadway shoulders to 3 m (10 feet), which will better accommodate bicycle movement along the Highway. Pedestrian safety will improve with the provision of sidewalks in compliance with the Americans with Disabilities Act, in those sections of the Highway to be provided with the urban cross-section.

Involves substantial secondary impacts - The proposed project will not cause secondary impacts in light of the existing land uses and zoning designations in areas abutting the highway, and County land use plans and policies regarding growth. In the areas nearest Lihue, urban development is occurring, and is forecast to continue. While the widened highway will help convey more travelers, it will not in itself change the land use development pattern now occurring, proposed in County policies, and being planned for in an integrated fashion.

Involves substantial degradation of environmental quality - Studies of air quality, noise, water quality and other environmental disciplines indicate that the proposed project's effect on environmental quality will be minimal.

Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions - The proposed project will not cause urban development or induce development in areas not approved by the County. However, since the area between Puhi and Lihue is planned for urban development, some level of cumulative impacts can be expected. As is its prerogative, the County has determined that this is an appropriate area for urban development to accommodate future population

growth. This land is not being used for agriculture or other productive purpose. Therefore, the cumulative effect to the environment will not be severe as County planning is consistent in encouraging growth and the provision of requisite infrastructure in this area.

Since the section of road proposed for widening connects logical termini from the perspective of the transportation network, the proposed project will not create a commitment to undertake larger actions.

Substantially affects a rare, threatened or endangered species, or its habitat – Although the U.S. Fish and Wildlife Service and the State of Hawaii Department of Land and Natural Resources identified endangered animal species in the project area, the proposed project will not adversely affect their habitat or continued existence.

Detrimentially affects air or water quality or ambient noise levels – With either the No Build or proposed project conditions, some localized areas near intersections will experience carbon monoxide levels that are slightly greater than the stringent State Ambient Air Quality Standard (AAQS) under worst-case conditions. This finding is routine because most intersections in the State with even moderate levels of traffic experience violations of the State AAQS under worst-case meteorological conditions.

With the proposed project, predicted traffic noise levels at noise-sensitive locations along Kaunualii Highway under will not constitute an "impact" according to the SDOT Noise Analysis and Abatement Policy (approved June 26, 1997). Therefore, noise abatement measures need not be considered.

Because construction activities could adversely affect the water quality of streams and ditches crossing Kaunualii Highway and downstream water bodies, Best Management Practices to control erosion and sedimentation will be implemented. The project is not expected to generate long-term water quality impacts because the highway drainage system will maintain existing surface water patterns, and total regional vehicle-miles-traveled (VMT) will be the same with or without the project.

Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a floodplain, tsunami zone, beach, erosion-prone area, geologically hazardous

land, estuary, fresh water, or coastal waters - The setting of the project is not environmentally sensitive. The eastern portion of the project area is mostly urban, and the western portion of the project area is abandoned sugarcane fields that remain viable for agriculture.

Substantially affects scenic vistas and viewplanes identified in county or state plans or studies - The proposed project will not affect existing scenic viewplanes because the improvements will be at ground level along the existing highway alignment. There will be no structures that will rise substantially above grade.

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

6.2 NATIONAL ENVIRONMENTAL POLICY ACT

Unlike State law, a significant impact under NEPA is assessed in terms of an impact's "context" and "intensity". Context refers to the environment and the level or relative abundance of resources in the project area. Intensity refers to the specific impact, or how much of the resource(s) would be used or affected by the project. FHWA rendered a FONSI determination for the proposed project because, based on impact analyses described in Chapter 4, the "intensity" of the project's impacts, or its use of the resources in the study area, would be small in the "context" of the regional environment, or the relative abundance of resources in the study area.

CHAPTER SEVEN

References

CHAPTER 7 REFERENCES

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APPENDIX A

Agency and Public Scoping Comment Letters and Responses

Summaries of Public Information Meetings

March 2, 1999

January 13, 2000

May 25, 2000 Public Hearing

Sign-In Sheets

Informational Handout

Transcript of Oral Comments

September 18, 1998

Mr. Charlie Ice
Hydrologist
Water Resource Branch
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Ice:

Re: Improvements to Kaunualii Highway,
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

The Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigation/studies for the design of highway improvements for Kaunualii Highway. Our scope of work also includes preparing an environmental assessment.

The proposed project is approximately 7.5 miles long starting at Lihue Mill and extending to a point about half a mile beyond the junction of Maluhia Road. A map depicting the location of the project is shown on the enclosed map entitled "Improvements to Kaunualii Highway Lihue to West of Maluhia Road". Under this project, the present highway will be widened from a two lane to a four lane divided highway. In general, the new highway will follow the alignment of the existing highway.

The major construction activities include-

1. Clearing and grubbing of the highway right of way
2. Roadway excavation, embankment and grading
3. Construction of bridges and other drainage improvements
4. Construction of highway pavement and related improvements
5. Installation of highway lighting and traffic control systems

We ask that you advise us of any impact(s) that the project may have on the ground water resources in the vicinity of this project. We will also appreciate any information you can provide as to their location, capacity, etc. that would be meaningful

Mr. Charlie Ice
Improvements to Kaunualii Highway
September 18, 1998
Page 2 of 2

to include in the environmental assessment.

Your earliest attention and response will be appreciated. Should you require additional information about the project, please call us at 531-1676.

Sincerely,

Paran, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President

TC 26 Folder 595

REGINALD SUZUKA
VICE PRESIDENT



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 121
HONOLULU, HAWAII 96808

September 30, 1998

Mr. Reginald Suzuki, Vice President
Park Engineering
567 S. King Street
Honolulu, Hawaii 96813

Dear Mr. Suzuki:

SUBJECT: Kaunaulii Highway Improvements (Kauai), Project No. 50DE-02-95

Thank you for the opportunity to comment on this project at this early stage. Our comments related to water resources are marked below.

In general, the CWRM strongly promotes the efficient use of our water resources through conservation measures and use of alternative non-potable water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWRM encourages the protection of water recharge areas which are important for the maintenance of streams and the replenishment of aquifers.

- We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan, which is subject to regular updates.
- We recommend coordination with the Lead Division of the State Department of Land and Natural Resources to incorporate this project into the 20-year State Water Project Plan, which is subject to regular updates.
- We are concerned about the potential for ground or surface water depletion/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any remaining requirements related to water quality.
- A Well Construction Permit and a Pump Installation Permit from the CWRM would be required before ground water is developed as a source of supply for the project.
- The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the CWRM would be required prior to use of this source.
- Groundwater withdrawals from this project may affect streamflow. This may require an increase in streamflow supplementation.
- If the proposed project diverts additional water from streams or if new or modified stream diversions are planned, the project may need to obtain a stream diversion works permit and provision to amend the stream diversion flow standard for the affected stream(s).
- As the proposed project creates several streams and gulches, the project may need to obtain a stream channel alteration permit and a permit to amend the stream diversion flow standard for the affected stream(s).
- We recommend the stream care where the project may affect highly erodible slopes which drain into stream beds or adjacent to the project.
- OTHER:** We do not anticipate ground water impacts from this project. Further road cutting at the end of its term may cause erosion and stream bank impacts. If ground water is present, it is recommended that monitoring be conducted in such locations. It is recommended to install exposed temperature. Please notify this office if this occurs.

If there are any questions, please contact Charley Ice at 587-0251.

Sincerely,

Timothy E. Johns
TIMOTHY E. JOHNS
Deputy Director

Cliss

MICHAEL B. WILSON
DIRECTOR
ROBERT G. ORLANDO
DAVID A. BROWN
RICHARD W. HARRIS
RICHARD H. COX
HERBERT H. RICHMOND, JR.
TIMOTHY E. JOHNS
DEPUTY DIRECTOR

December 21, 1998

Mr. Rick Egged, Director
Office of State Planning
P.O. Box 2359
Honolulu, Hawaii 96804

Dear Mr. Egged:

Re: Coastal Zone Management Program
Improvements to Kaunaulii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

The State Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigation/studies for the design of highway improvements for Kaunaulii Highway. As part of this assignment, we will be preparing an Environmental Assessment.

The project is approximately 7.5 miles long starting at the Lihue Mill and extending west to a point about a half mile beyond the Maluhia Road Junction. The enclosed map entitled "Improvements to Kaunaulii Highway, Lihue to West of Maluhia Road" shows the extent of this project.

We hereby request that you advise us of any concern(s) that we should be aware of relative to the Coastal Zone Management Program. If you need more information, please contact us at 531-1676.

Your earliest response will be appreciated.

Sincerely,

ParkEn, Inc.
dba PARK ENGINEERING
Reginald Suzuki
Reginald Suzuki
Vice President

TC 26 Folder 595



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

OFFICE OF PLANNING

235 South Beretania Street, 6th Flr., Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

BENJAMIN J. CATELANO
DIRECTOR
REGINALD SUZUKA
DEPUTY DIRECTOR
DIRECTOR, OFFICE OF PLANNING

Tel: (808) 587-2646
Fax: (808) 587-2824

Ref. No. P-7868

December 24, 1998

Mr. Reginald Suzuka
Vice President
Park Engineering
567 South King Street, Suite 300
Honolulu, Hawaii 96813-3036

Dear Mr. Suzuka:

Subject: Improvements to Kaunualii Highway, Project No. 50DE-03-95

Insofar as the project is about improving an existing highway, our primary interest is the prevention or mitigation of polluted runoff and coastal water quality degradation that may result during and after construction. Therefore, we recommend that effective mitigation measures to combat polluted runoff be incorporated into the project design. In this regard, you may wish to consult our Coastal Nonpoint Pollution Control Management Plan which contains a number of management practices and related mitigation measures.

If you have any questions about this, please feel free to contact Steve Olive of our Coastal Zone Management Program at 587-2877.

Sincerely,

Bradley J. Mossman
Bradley J. Mossman
Director
Office of Planning

March 24, 1998

Mr. Dee Crowell
Director
Department of Planning
444 Rice Street
Lihue, Hawaii 96766

Dear Mr. Crowell:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preparation of Environmental Assessment

The State Department of Transportation has engaged our firm to conduct preliminary engineering investigations/studies for the design of highway improvements for Kaunualii Highway. This work also includes the preparation of an Environmental Assessment (EA). In accordance with the Guidebook of the Office of Environmental Quality Control on Environmental Review Process, we are hereby informing you about this project.

The proposed project is approximately 7.5 miles in length starting at the Lihue Hill and extending to a point about half a mile beyond the junction of Maluhia Road (See attached map). The project will replace the present two lane highway with a four lane divided highway. In general, the new highway will follow the alignment of the existing highway.

To help us with the preparation of the EA, we ask that you provide us with one copy each of the current Maui County Plan, the Community Plan, the Development Plan and the Zoning Map for the project area.

We also request and will appreciate any other information and/or assistance you can provide to facilitate our work on the EA.

Sincerely,

ParEn, Inc.
dba PAR ENGINEERING

Reginald Suzuka

Reginald Suzuka
Vice President

TC 26 Folder 595

MARYANNE W. KUSAKA
MANAGER



DEE M. CROWELL
PLANNING DIRECTOR
JAN K. COSTA
DEPUTY PLANNING DIRECTOR
TELEPHONE (808) 241-4477
FAX (808) 241-4499

PLANNING DEPARTMENT

March 31, 1998

Reginald Suzuki
Park Engineering
Suite 300, Kawaihāo Plaza
567 South King St.
Honolulu, Hawaii 96813-3036

SUBJECT: Environmental Assessment for Kaunualii Highway
Improvements at Kauai, Hawaii

We are enclosing copies of the information which you requested which includes the following:

Kauai County General Plan (maps are included in the document)
400 scale zoning maps of Puhī and Lihue (zoning within the Urban Districts)

1,000 scale zoning map of the lands along the project area (zoning within the Agricultural District)

Please understand that most of the project area does not fall into our Development Plan areas. Also, the zoning maps are reflective of our Development Plans which means that the zoning maps are the Development Plan maps. It should be noted that the project falls into two Development Plan areas: Lihue and Koloa. Both plans have not been updated since 1977 and 1983 respectively.

Because we have limited copies of the Development plan texts, you may wish to visit our office and review the texts.

Should you have any questions, please feel free to contact Keith Nitka of my staff at 241-6677.


IAN K. COSTA
Deputy Planning Director

Kapule Building • 4444 Rice Street, Suite 473 • Lihue, Kauai, Hawaii 96766
AN EQUAL OPPORTUNITY EMPLOYER

April 15, 1998

Mr. Cesar Portugal
Chief Engineer
Department of Public Works
4444 Rice Street
Lihue, Kauai, Hawaii 96766

Dear Mr. Portugal:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preliminary Engineering Study and Environmental Assessment

The State Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigations/studies for the design of highway improvements for Kaunualii Highway. The scope of our work also includes the preparation of an Environmental Assessment(EA). The purpose of this letter is to inform you about this project and to solicit any help that you can provide.

The proposed project is approximately 7.5 miles in length starting at the Lihue Mill and extending to a point about half a mile beyond the junction of Maluhia Road(See attached map). The project will replace the present two lane highway with a four lane divided highway. In general, the new highway will follow the alignment of the existing highway.

Among the information we are trying to compile are aerial contour maps of the Lihue/Koloa area. Do you have such maps in your possession? If so, can we obtain copies? If you do not have any(maps), can you direct us to someone who does? We will be most appreciative of any assistance you can provide. We will also appreciate receiving any other information that may be relevant to and helpful to us in the preparation of the Environmental Assessment.

Your earliest response will be appreciated.

Sincerely,

PerEn, Inc.
dba PARK ENGINEERING


Reginald Suzuki
Vice President

TC 26 Folder 595

May 8, 1998

Mr. Cesar Portugal
Chief Engineer
Department of Public Works
4444 Rice Street
Lihue, Kauai, Hawaii 96766

Dear Mr. Portugal:

Subject: Design Impacts to Hoomana Road
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)

We are presently investigating two alignment alternatives for the new highway in the vicinity of Lihue Mill. Prints of these alternatives are enclosed. Alignment "A" shows the highway widening on the makai side of the existing highway. Alignment "A-1" shows the widening on the mauka side.

Alignment "A" will impact some of the facilities within Lihue Mill while Alignment "A-1" will impact Hoomana Road and the residents who live on this road. Because the project will impact AMFAC or the County, we are scheduling a meeting with representatives of AMFAC Sugar and the State Highways Division to discuss these alternatives and their impacts. Your presence at this meeting is requested.

We would like to schedule the meeting during the last week of June. A tentative meeting date has been set for Wednesday morning, July 1, 1998 at the State Highway District Office. The time will be set at a later date.

Your earliest response will be appreciated.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President

cc: DOT-Kauai, attn: Steve Morikawa

TC 26 Folder 595

August 17, 1998

Mr. Cesar Portugal
Chief Engineer
Department of Public Works
4444 Rice Street
Lihue, Hawaii 96766

Dear Mr. Portugal:

Re: Improvements to Kaunualii Highway &
Conceptual Designs for Hoomana Road
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

As you know, a meeting was held with representatives of your Department, Lihue Plantation (L.P.) and the State Highway Division on July 1, 1998. The items discussed are documented in Paren's memo of July 6, 1998. Subsequent to said meeting, Paren, Inc. engaged in further discussions with L.P. and the State on the design alternatives for Hoomana Road. The purpose of this letter is to advise and apprise you on the status of these discussions.

First, we wish to inform you that the State has reviewed all of the information on the impacts of Alignment "A" and Alignment "B". Based on this review, the State has decided to discard Alignment "A" from further consideration. As such, the designs for the highway improvements in the vicinity of Lihue Mill will be based on Alignment "B" which calls for widening the highway on the mauka side of the existing highway.

Second, L.P. had expressed several concerns relative to the realigned Hoomana Road as depicted on CONCEPTUAL PLAN "A-1" and the impact that it has on L.P.'s mill operations. In response to these concerns, the State and Paren, Inc. investigated/studied two additional design alternatives for Hoomana Road (Refer to the enclosed plans entitled CONCEPTUAL PLANS A-2 and A-3). Please note that these plans are still very preliminary and that a feasibility study must still be made. Please also note that a feasibility study is contingent upon the impacted parties agreeing to one of these plans, the parties being L.P., the Department of Public Works, the owner of parcel TMK:3-8-16:20, and all of the residents on Hoomana Road. The following describes

the features of each plan:

CONCEPTUAL PLAN A-2

1. The realigned Hoomana Road passes under the existing cane conveyor bridge. The grade for Hoomana Road at the bridge is controlled by the minimum vertical clearance required for L.P.'s trucks.
2. The existing ground supporting a portion of the cane conveyor system will be excavated and removed. Additional structural supports will therefore be required for this section.
3. The realigned road crosses an existing 40 feet wide electrical easement. The existing power pole(s) located within the realigned roadway must be relocated.
4. The major items of work that will affect L.P.'s use of the mill road are significantly less than PLAN A-1. For PLAN A-2, the major work will be (1) the roadway excavation in the vicinity of the mill road and (2) the construction of additional supports for the cane conveyor bridge (item 2 above).

CONCEPTUAL PLAN A-3

1. Because the intersection of Hoomana Road and Kaunualii Highway is located to the west of the existing cane conveyor bridge, Hoomana Road does not cross the cane conveyor bridge. Therefore, the work in items 2 and 3 above are not necessary if retaining walls are constructed.

2. The only major work that will affect the mill road is the roadway excavation in the vicinity of the mill road.

The following is a comparison of PLAN A-2 and PLAN A-3:

1. PLAN A-2

- a. The stopping sight distance is slightly more than PLAN A-3 (Refer to enclosed road profiles).

- b. The westbound acceleration lane is longer than PLAN A-3.
 - c. The eastbound deceleration lane is longer than PLAN A-3.
 - d. The disruption to hauling mill wastes (during the grinding season) can be avoided through proper coordination with L.P. This also applies to PLAN A-3.
 - e. Temporary access (through the cane field) by the residents of Hoomana Road can be avoided through proper scheduling and coordination by the contractor. This also applies to PLAN A-3.
2. PLAN A-3
- a. The relocation of the existing power pole(s) can be avoided by constructing retaining walls.
 - b. The construction of additional structural supports for the cane conveyor system can be avoided by constructing retaining walls.
 - c. The length of time that the mill road must be closed (once construction starts) is less than PLAN A-2.
 - d. Same as 1e above.
 - e. Same as 1e above.

Your review and comments on these plans are requested. Your earliest response will be appreciated.

Sincerely,

Reginald Suzuka
Vice President
dbi PARK ENGINEERING

cc: DOT-Kauai, attn: Steve Morikawa *Faxed*

TC 26 Folder 595

MARYANNE W. KUSAKA
MAYOR



CESAR C. PORTUGAL
COUNTY ENGINEER
TELEPHONE 241-5800

RUSSELL SUGAHO
ACTING DEPUTY COUNTY ENGINEER
TELEPHONE 241-8831

AN EQUAL OPPORTUNITY EMPLOYER
COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
4444 RICE STREET
MOKOEA BUILDING, SUITE 278
LIHUE, KAUAI, HAWAII 96766

PW8.187

August 27, 1998

Mr. Reginald Suzuka
Vice President
ParEn, Inc. dba Park Engineering
567 South King Street
Honolulu, Hawaii 96813

Dear Mr. Suzuka:


RE: IMPROVEMENTS TO KAUMUALII HIGHWAY

Reference is made to your letter dated August 17, 1998 which request our review and comments for the improvements to Kaumualii Highway and the conceptual realignment of Hoomana Road. We concur with you that impacted parties should agree with the plans. The Department of Public Works will provide review and recommendations to the County Council for the preferred alignment. The County Council is the legislative branch that authorizes the abandonment and disposal and acquisition of lands for roadways.

Both alignment A-2 and A-3 meet our roadway standards for a minor street with a design speed of 20 MPH. Street profile grade for alignment A-2 may be flatter due to its longer length. However, grades for both alignment should not be a problem if slopes are 12 percent or flatter.

The Department's preference is alignment A-2. Final selection and authorization requires County Council approval.

Very truly yours,


CESAR C. PORTUGAL
County Engineer

KK/cu

September 18, 1998

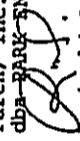
Mr. Cesar Portugal
Chief Engineer
Department of Public Works
4444 Rice Street
Lihue, Hawaii 96766

Dear Mr. Portugal:

Re: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

We hereby request your assistance in preparing the environmental assessment for this project. Specifically, we ask that you advise us of any impact(s) that the project may have on the Department's "wastewater treatment/disposal" and "solid waste collection/disposal" facilities. If there are impacts, we ask that you provide us with pertinent information that we can include in the assessment documents. Map, Plans, etc. would also be helpful.

Your earliest attention and response will be appreciated. Should you questions about this request, please call us at 531-1676.

Sincerely,
Paren, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President

TC 26 Folder 595

ARYANNE W. KUSAKA
MAYOR



CESAR C. PORTUGAL
COUNTY ENGINEER
TELEPHONE 241-0800

RUSSELL SUGAKO
ACTING DEPUTY COUNTY ENGINEER
TELEPHONE 241-0831

AN EQUAL OPPORTUNITY EMPLOYER
COUNTY OF KAUAI

DEPARTMENT OF PUBLIC WORKS
MALUAH ROAD, SUITE 278
LIMUPE, KAUAI, HAWAII 96768

PW8.262

September 16, 1998

Mr. Reginald Suzuka
Vice President
ParEn, Inc. dba Park Engineering
567 S. King St., Suite 300
Honolulu, Hawaii 96813

Dear Mr. Suzuka:

RE: PRELIMINARY ENGINEERING STUDY
IMPROVEMENTS TO KAUMUALII HIGHWAY
LIHUE TO WEST OF MALUHIA ROAD
PROJECT NO. 50DE-02-95

Reference is made to your letter dated August 26, 1998 with preliminary alignment plans for the captioned project. We are offering the following comments on the alignment plans.

1. We will be developing plans to improve Maluhia Road in the near future. Federal monies will be programmed in the financing of the improvement. We believe that the State and FHWA will require the County to widen pavement and shoulders to meet AASHTO standards. Since the existing swamp mahogany trees are designated as exceptional and cannot be removed in accordance to the law, the County will need to develop a new northbound or southbound travelway. While no studies have been initiated it is probable that a new northbound travelway will be developed since an existing reservoir is located just west of Maluhia Road.

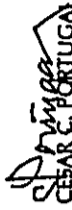
The development of the new Maluhia Road need to be coordinated with the Kaumualii Highway improvement. Plans for Kaumualii Highway improvements may need to be revised especially if construction timetable for Maluhia Road will precede Kaumualii Highway improvement.

Mr. Reginald Suzuka
ParEn, Inc. dba Park Engineering
September 16, 1998
Page 2

2. Nuhou Street intersection improvement should at least match the geometrics for those provide for Kalepa Road. Nuhou Street is planned to be a major traffic carrier for the Grove Farm Lihue-Puhi development. Nuhou Street is considered a major arterial.
3. We are recommending that a typical minor road intersection improvement as shown in conceptual plan H be developed for Nani Street at the Puhi Subdivision. The access will provide alternate circulation pattern for the residents in the subdivision.
4. We concur that the Hala Road intersection to Kaumualii Highway can be eliminated. However, the County Council need to approve the abandonment of the roadway.

Please contact Kenneth Kitabayashi at (808) 241-6622 if there are questions.

Very truly yours,


CESAR C. PORTUGAL
County Engineer

KK/cu

MARYANNE W. KUSAKA
MAYOR



CESAR C. PORTUGAL
COUNTY ENGINEER
TELEPHONE 241-6600

RUSSELL SUGANO
ACTING DEPUTY COUNTY ENGINEER
TELEPHONE 241-6600

AN EQUAL OPPORTUNITY EMPLOYER
COUNTY OF KAUAI
DEPARTMENT OF PUBLIC WORKS
4444 RICE STREET
KOHOLA BUILDING, SUITE 275
LILUOUE, HAWAII 96766
September 28, 1998

September 23, 1998

Mr. Cesar Portugal
Chief Engineer
Department of Public Works
4444 Rice Street
Lilue, Hawaii 96766

Dear Mr. Portugal:

Re: Your Letter of September 16, 1998
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

Thank you for your comments on the preliminary alignment plans. We have forwarded a copy of your letter to our traffic consultant and the DOT-Kauai for their review.

It appears likely that the designs for Maluhia Road will affect the designs for the intersection at Kaunualii Highway. We therefore ask that you keep us closely advised of any design developments that may impact our project. If there's anything we can do to facilitate the coordination of the two projects, please feel free to contact us.

Sincerely,
Paren, Inc.
dba PARY ENGINEERING

Reginald Suzuka
Vice President

TC 26 Folder 595

Mr. Reginald Suzuka Vice President
Paren, Inc. dba Park Engineering
Kawaihāo Plaza, Suite 300
567 South King Street
Honolulu, Hawaii 96813-3036

Dear Mr. Suzuka:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

This is in response to your request of September 18, 1998 for any impact that the project may have on the Department's wastewater treatment/disposal facilities.

The improvements to Kaunualii Highway will have no significant impact to the County's Wastewater System and Facilities. Our comments are:

1. At present, the Lihue Wastewater Treatment Plant located near Vidinha Stadium does not service the Puhī area. The wastewater system servicing Puhī is owned by Grove Farm Company.
2. There are no County sewer service lines along Kaunualii Highway from Lihue to Koloa (west of Maluhia Road).

If you have any questions, please contact Alfonso Afos of the Division of Wastewater Management at 241-6642.

Comments on the Solid Waste facilities will be forwarded separately.

Very truly yours,
CESAR PORTUGAL
County Engineer

AA
AUGUSTIN
cc: Troy Tanigawa

Maluhia Road Intersection
Improvements to Kaunualii Highway
October 28, 1998
Page 2 of 2

October 28, 1998

Mr. Cesar Portugal
Chief Engineer
Department of Public Works
4444 Rice Street
Lihue, Hawaii 96766

Dear Mr. Portugal:

Re: Maluhia Road Intersection
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

The Department of Transportation has just approved Phase I of this project and has authorized us to proceed with Phase II, the preliminary design investigation phase.


Your letter [PW8.262] of September 16, 1998 indicated that the County has not yet initiated the studies for the improvements to Maluhia Road. Since our work is presently proceeding as scheduled, it appears likely that State's project will precede that of the County's. The DOT has therefore asked that we initiate the work of coordinating the designs for the two projects. As the first step in this effort, we have developed two additional intersection plans, CONCEPTUAL PLANS D-5 and D-6, for Maluhia Road. PLAN D-5 depicts the widening of the highway on the makai side of the existing highway. PLAN D-6 shows the intersection for the widening on the mauka side. The number and location of the existing trees shown are only approximate and must be verified by field survey. The location of the new northbound lanes is also an approximation and one which the County will establish upon completing its engineering study.

You will notice that the plans depict the ultimate conditions for the intersection, eg. the condition with the future Maluhia Road "in-place". The obvious choice from the standpoint of minimizing impacts to the "tree tunnel" is CONCEPTUAL PLAN D-6. However, another environmental concern is the impact of the project on the existing wetlands along the mauka side of the highway. CONCEPTUAL PLAN D-5 will have less impact on the wetlands (than PLAN D-6).

We are transmitting two prints each of these plans for your review and comments. In reviewing these plans, please be mindful of the fact that the plans are only conceptual. Our present contract with the State calls for performing preliminary engineering studies and investigations only and does not include preparing construction documents. The final construction plans for the intersection will be prepared at a later date. If the State's project precedes the County's, the State will construct an interim intersection and the County will design/construct the ultimate road connection. The reverse will occur if the County's project precedes that of the State.

Your earliest response to the above request will be appreciated. Should you have questions or wish to discuss this matter, please contact us.

Sincerely,
Paren, Inc.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

cc: DOT-Kauai, attn: Steve Morikawa

TC 26 Folder 595

MARYANNE W. KUSAKA
MAYOR



AN EQUAL OPPORTUNITY EMPLOYER
COUNTY OF KAUAI

DEPARTMENT OF PUBLIC WORKS
4444 RICE STREET
MOTONOA BUILDING, SUITE 275
LAWYER, HAWAII, HAWAII 96766

November 9, 1998

Mr. Reginald Suzuka
Vice President
ParEn, Inc. dba Park Engineering
567 South King Street
Honolulu, Hawaii 96813

Dear Mr. Suzuka:

RE: MALUHIA ROAD INTERSECTION IMPROVEMENTS
TO KAUMUALII HIGHWAY

Reference is made to your letter dated October 28, 1998 which request our comments on conceptual plan D-5 and D-6 for the improvements at the Kaumualii Highway/Maluhia Road Intersection.

We prefer conceptual plan D-6 which show the intersection improvement to be mauka of the existing highway. This alternative preserves the existing swamp mahogany trees which have been designated as exceptional trees. Enclosed is a copy of Article 5, Preservation of Exceptional Tree, in the Kauai Code of Ordinances. The removal of exceptional trees for the project requires approval from the Kauai County Council.

We are not sure if the construction schedule to improve Maluhia Road will occur before the State's improvement to Kaumualii Highway. However, in the event Kaumualii Highway is improved earlier, we are requesting that the State consider making all or most of the improvements to Kaumualii Highway to accommodate the future Maluhia Road. These improvements could include the northbound and southbound acceleration and merging lanes along Kaumualii Highway that is shown by the conceptual plans.

CESAR C. PORTUGAL
COUNTY ENGINEER
TELEPHONE 241-6800

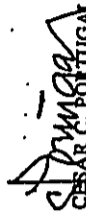
RUSSELL SUDANO
ACTING DEPUTY COUNTY ENGINEER
TELEPHONE 241-6831

PW11.008

Mr. Reginald Suzuka
Vice President
ParEn, Inc. dba Park Engineering
November 9, 1998
Page 2

Please contact Kenneth Kiyabayashi at 241-6622 if there are questions.

Very truly yours,


CESAR C. PORTUGAL
County Engineer

KK/cu

attachment

DEPARTMENT OF WATER

County of Kauai

"Water has no Substitute - Conserve It!"

April 16, 1998

Mr. Reginald Suzuka, Vice President
ParEn, Inc.
567 S. King Street Suite 300
Honolulu, HI 96813

Dear Mr. Suzuka:

SUBJECT: Improvements to Kaunualii Highway, Lihue to west of Maluhia Road
(Koloa) - Preliminary Engineering Study and Environmental
Assessment (EA), Kauai

The Department of Water (DOW) has transmission mains located in and along certain portions of Kaunualii Highway from Lihue to just west of Puhi. Our transmission mains are located within certain portions of your proposed project.

Attached is a copy of a portion of the map you sent delineating the project area. Crosshatched on this map are the areas where the DOW has existing waterlines along Kaunualii Highway.

The DOW would like to review, comment and approval all construction drawings that contain any of the Department's water system facilities and/or where construction may be done on or around our water system facilities to determine whether or not our facilities will be impacted.

If you have any questions, please call Edward Doi at (808) 245-5417.

Sincerely,



Ernest Y. W. Lau
Manager and Chief Engineer

ED:ls
Attachment
CA:\M\ezuka.doc

4118 Puu Lake Street, Lihue, Kauai, Hawaii or P. O. Box 1704, Lihue, HI 96744-3704 -
Phone No. (808) 245-5400 - Administration FAX No. (808) 244-4421 - Engineering/Fiscal/Shop FAX No. (808) 245-5413

March 24, 1998

Mr. Ernest Lau
Manager and Chief Engineer
Department of Water
4398 Pualoke Street
Lihue, Kauai, Hawaii 96766

Dear Mr. Lau:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preliminary Engineering Study and Environmental Assessment

The State Department of Transportation has engaged our firm to conduct preliminary engineering investigations/studies for the design of highway improvements for Kaunualii Highway. This work also includes the preparation of an Environmental Assessment (EA).

The proposed project is approximately 7.5 miles in length starting at the Lihue Hill and extending to a point about half a mile beyond the junction of Maluhia Road (See attached map). The project will replace the present two lane highway with a four lane divided highway. In general, the new highway will follow the alignment of the existing highway.

Please let us know if any of your existing water system facilities may be impacted by this project. If so, please provide us with information about such facilities.

Your earliest response and your cooperation will be appreciated.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING



Reginald Suzuka
Vice President

TC 26 Folder 595

September 9, 1998

Mr. Ernest Y.W. Lau
Manager & Chief Engineer
Department of Water
4398 Pua Loke Street
Lihue, Hawaii 96766-5706

Dear Mr. Lau:

Re: Improvements to Kaunualii Highway,
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

In your letter of April 16, 1998, you informed us about the Department's existing transmission mains in the Lihue to Puhī area. We ask that you provide us with prints of the construction plans for these mains. We will gladly pay for any printing cost you may have.

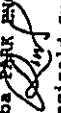
As part of our effort to keep you informed about the project, we are sending you a set of our latest plans dated August 13, 1998 for the project from Lihue to Puhī (sheets 1 to 3 and 18 to 25). You will notice that the plans for the portion between Lihue Hill to Nawiliwili Road are based on ALIGNMENT "B" (the alignment for widening the highway on the mauka side). There are, unfortunately, some problems associated with this alignment.

One problem (with ALIGNMENT "B") is that the residents of Hoomana Road will not have access to their homes. This is because the existing Hoomana Road bridge must be abandoned. At the present time, we are investigating the possible realignment of Hoomana Road. The realignment may affect an existing 18" pipeline believed to be located along Hoomana Road. The people at Lihue Plantation have said the line does not belong to them. They believe it belongs to the Department of Water. Please confirm this for us. If it does belong to DOW, please provide us with prints of the construction plans for this line also.

Your earliest response to the above requests will be appreciated.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

TC 26 Folder 595

April 20, 1998

Mr. Ernest Lau
Manager and Chief Engineer
Department of Water
4398 PuaLoke Street
Lihue, Kauai, Hawaii 96766

Dear Mr. Lau:

Attention: Mr. Edward Doi


Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preliminary Engineering Study and Environmental
Assessment

Thank you for your letter of April 16, 1998 and the information provided in your letter about your water system.

We are presently completing the topographic survey work for the area shown on the enclosed map. Upon the completion of this work, we will prepare a preliminary highway alignment plan for this portion of the project. A set of this plan will be sent to you hopefully sometime in May.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

TC 26 Folder 595

DEPARTMENT OF WATER
County of Kauai

"Water has no Substitutes - Conserve It!"

APR 21 11 31 AM '98

April 16, 1998

Mr. Steve Kyono, Kauai District Chief
Dept. of Transportation - Highways Division
3060 Ekiwa Street
Lihue, HI 96766

Dear Mr. Kyono:

SUBJECT: Widening of Kaunualii Highway in the Vicinity of the Department of Water's
Liftus Facility

We have obtained from the County Public Works Department a preliminary map detailing the old Newillwill Road right-of-way, in which the Department of Water has an interest. The map shows that the right-of-way for Kaunualii Highway at the old Newillwill Road intersection will be widened in the southern direction. A portion of the preliminary map is attached for your reference.

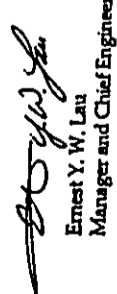
We are concerned that the proposed widening of Kaunualii Highway in the vicinity of the Department's Liftus facility will conflict with our present and planned facility operations. As shown on the attached map, if the highway right-of-way is extended along the proposed line, it will cut through a portion of our facility and possibly intersect the Garage.

The Department has plans to make improvements to our Liftus facility, including completely restructuring the Garage in its present location. We are in the final stages of design for the facility improvements, and plan to begin construction in five to six months. Any plans to extend the highway right-of-way into our facility would greatly impact our facility improvement plans.

Please inform us if the Highways Division's plans to widen Kaunualii Highway will affect the Department of Water's plans.

If you have any questions, please call William Eddy at 245-5412. Thank you for your assistance in this matter.

Sincerely,



Ernest Y. W. Lau
Manager and Chief Engineer

WE:ls
Attachment
C:\:\lyp\weds

Phone No. (808) 245-5400 - Administration FAX No. (808) 244-4438 - Engineering/Fiscal/Shop FAX No. (808) 245-5813

HWY-KE 4.980378

April 27, 1998

Mr. Ernest Y. W. Lau
Manager-Chief Engineer
Department of Water
County of Kauai
4398 Pua Loke Street
Lihue, Hawaii 96766

Dear Mr. Lau:

Subject:

Kaunualii Highway Improvements, Lihue to West of Maluhia Road. (Kaunualii Highway Widening to 4-Lanes)
Project No. 50DE-02-95

This is in response to your letter dated April 16, 1998, regarding widening of Kaunualii Highway in the vicinity of the Department of Water baseyard in Lihue.

A copy of your letter (with the map), has been forwarded to ParEn Inc., the DOT planning consultant for the highway widening project.

ParEn Inc. is developing alignment alternatives for the widening project, and in the vicinity of the DOW baseyard in Lihue, ParEn Inc. will be assessing both makai and mauka alignment alternatives for widening of Kaunualii Highway.

We have requested ParEn Inc. to consider your Department's facilities in assessing the various highway alignments. Until ParEn Inc. completes the alignment alternatives study, we cannot confirm to you whether your garage/storage facility, if constructed where shown on the map, will be impacted by the highway widening project.

Besides the DOW facilities, ParEn, in assessing feasible and reasonable alternatives, will be considering impacts to the Lihue Plantation mill buildings, cane flume, and Hoomama Road and Hoomama Road Bridge.

Mr. Ernest Y. W. Lau
Page 2
April 27, 1998

HWY-KE 4.980378

As soon as we are able to, we will provide you with more concrete information regarding the alignment alternatives in the vicinity of the DQW baseyard.

If you have any questions, please call Steve Morikawa at 274-3118.

Sincerely,



STEVEN KYONO, P.E.
District Engineer

SM:cs
cc: ParEn Inc.
Attn: Mr. Reg Suzuki

DEPARTMENT OF WATER

County of Kauai

"Water has no Substitute -- Conserve It!"

May 12, 1998

Mr. Steven Kyono, District Engineer
Dept of Transportation, Highways Division
3060 Ewa Street, Room 205
Lihue, HI 96766

Dear Mr. Kyono:

SUBJECT: Kaunualii Highway Improvements, Lihue to west of Maluhia Road,
Project No. 50DE-02-95

Thank you for your letters of April 27 and May 1, 1998 regarding the highway widening in the vicinity of the Department of Water's facility in Lihue. It is understood that the new Kaunualii Highway right-of-way may encroach into our property if a new mekal alignment is selected. It is also understood that the final alignment has not been determined.

In your May 1, 1998 letter, you stated that should we reconstruct our Garage building in its present location, the State may consider constructing a retaining wall or increase the ground slope to avoid encroachment into our property. Based upon these considerations, we will continue with our plans to reconstruct the Garage building in its present location.

We tentatively plan to advertise for bids on our building reconstruction and site improvement project mid-June, and begin construction in October, 1998. Unless we are advised by your agency that the highway widening will definitely impact the Garage building, we will continue with schedule and building plans.

Thank you for your cooperation on these matters. If you have any questions, please call William Eddy at 245-5412.

Sincerely,



Ernest Y. W. Lau
Manager and Chief Engineer

WE:ls
C:\101\kyono2.doc

Mr. Ernest Y. W. Lau
Page 2
May 1, 1998

HWY-KE 4.980406

HWY-KE 4.980406

We will keep you informed as to the progress of our alignment studies and if you have any questions, please contact Steve Morikawa or Ramon Acob at 274-3118.

Sincerely,

May 1, 1998

Mr. Ernest Y. W. Lau
Manager-Chief Engineer
Department of Water
County of Kauai
4398 Pua Loke Street
Lihue, Hawaii 96766

STEVEN KYONO, P.E.
District Engineer

SM:cs
Encl.

cc: ✓ PerEn Inc. (w/o encl)
Attn: Mr. Reg Suzuki

Dear Mr. Lau:

Subject: Kaunualii Highway Improvements, Lihue to West of Maluhia Road. (Kaunualii Highway Widening to 4-Lanes)
Project No. 50DE-02-95

Enclosed is a copy of PerEn Inc.'s comments regarding possible impacts to your facilities if a makai alignment is selected for the widening of Kaunualii Highway.

If the makai alignment is selected, it appears that the top of the slope (2:1) for the roadway section will encroach into DOW property. (Refer to the attached cross-section sketch). If your garage/storage facility is constructed per your map, a retaining wall may have to be constructed in conjunction with our project. The adjacent cemetery parcel will be impacted in a similar manner as the DOW parcel and we may have to construct a continuous retaining wall along the makai side of the highway. It may also be possible for us to increase the ground slope to avoid the encroachments into the DOW and cemetery parcels.

Per PerEn Inc.'s letter, a mauka alignment will not impact the makai side of the highway and your facilities and the cemetery parcel will not be affected. However, as mentioned in our April 27, 1998 letter to you, there are other considerations that have to be investigated before we select a final alignment.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

MARYANNE W. KUSAKA
MAYOR



VIRGINIA M. KAPALI
TRANSPORTATION DIRECTOR

COUNTY OF KAUAI
TRANSPORTATION AGENCY

MEMORANDUM

TO: Steve Kyono
DOT - Kauai

FROM: Reg Suzuka

DATE: April 27, 1998

Subject: Kaunualii Highway Improvements- MM 0.0 to 7.5
New Department of Water Supply Garage/Storage Facility

This is in response to your memo of April 24, 1998 concerning the Department of Water Supply's (DWS) letter dated April 16, 1998.

The DWS's parcel is in an area where we are considering two highway alignments, one on the makai side of the existing highway and one on the mauka side. We can only make general comments at this time because our topographic survey work is on-going in this area and the alignments/designs are still preliminary. Our comments are as follows:

1. The excavation/grading work for the mauka side alignment will encroach into the area of the proposed garage/storage facility as well as along the frontage area of Hala Road. The amount of encroachment will depend on the final vertical alignment and the maximum "cut-slope" in this area.

A rough estimate of the encroachment was made from as-built cross sectional plans of the TERRITORIAL HIGHWAY DEPARTMENT, "HAWAII PROJECT NO. 24-A, U.S. WORKS PROGRAM GRADE CROSSING PROJECT NO. W.P.G.S. 24-A". The profile of the existing ground was approximated by extrapolation and by using 5 foot aerial contour map information. Refer to attached cross sections.

The mauka side alignment should have little or no impact on the proposed DOW facility.

2. We have estimated the existing ground at the proposed garage/storage site to be between 20 and 25 feet higher than Kaunualii Highway. We can reduce or eliminate the above-mentioned encroachment by constructing retaining walls or by using steeper stabilized slopes. This will, of course, add additional cost to the project.

Please call if you have questions or wish to discuss any of the above.

TC #26 FOLDER #595

October 5, 1998

Mr. Reginald Suzuka
Vice President
Park Engineering
567 South King Street Suite 300
Honolulu, Hawaii 96813

RE: Information on County of Kauai - The Kauai's Bus System

Dear Mr. Suzuka:

In response to your inquiry about Kauai's public transportation system and the paratransit services (aka, ADA, Handivan, Senior Citizen bus), we have enclosed for your information:

- Historical Briefing
- Copy of the FY 97 CTA Annual Report
- CTA Agency Brochure
- Executive Summary from KAKU Associates
- Inventory of Vehicle Fleet
- Bus Schedules

In our day to day operations, an average of 28 vehicles are used to service 45 public runs and an average of 52 paratransit runs with two shifts from 4:00 am to 9:00 pm. Monday through Friday and a modified schedule for Saturday. We are closed on Sundays and all County holidays.

We appreciate your inquiry in preparation for your project Environmental Assessment. If we could be of any further assistance, please contact me at 241-6410.

Sincerely,

(Ms.) Virginia M. Kapali
Transportation Director

THE KAUAI BUS

4396 Rice Street, Suite 104 • Lihou, HI 96766 • Telephone: 241-6410 Fax: 241-6417

April 16, 1998

Ms. Doty Bekeart
AMFAC Sugar
Lihue Plantation
2970 Kele
Lihue, Kauai, Hawaii 96766

Dear Ms. Bekeart:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preliminary Engineering Study

As you know, the Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigations/studies for the design of highway improvements for Kaunualii Highway.

The proposed project is approximately 7.5 miles in length starting at the Lihue Mill and extending to a point about half a mile beyond the junction of Maluhia Road (See attached map). The project will replace the present two lane highway with a four lane divided highway. In general, the new highway will follow the alignment of the existing highway.


Our work will be greatly facilitated if we had aerial contour maps of the Lihue/Koloa area in which our project lies. We are hoping that you may have such maps in your possession. If so, can you provide us with copies? We are willing to pay for the cost of the prints including mailing. If you do not have any maps, can you direct us to someone who does? We will be most appreciative of your assistance in this matter.

As part of our work, we will also be preparing an environmental assessment. If you should have environmental concerns and/or information that we should know about, we will appreciate you making them known to us.

Your earliest response to the above will be appreciated.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING


Reginald Suzuki
Vice President

TC 26 Folder 595

May 8, 1998

Ms. Doty Bekeart
AMFAC Sugar
Lihue Plantation
2970 Kele
Lihue, Kauai, Hawaii 96766

Dear Ms. Bekeart:

Subject: Design Impacts to Lihue Mill
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)

We are presently investigating two alignment alternatives for the new highway in the vicinity of Lihue Mill. Prints of these alternatives are enclosed. Alignment "A" shows the highway widening on the makai side of the existing highway. Alignment "A-1" shows the widening on the mauka side.

Alignment "A" will impact some of the facilities within Lihue Mill while Alignment "A-1" will impact Hocmana Road and the residents who live on this road. Because the project will impact AMFAC or the County, we are scheduling a meeting with representative(s) of the Department of Public Works and the State Highways Division to discuss these alternatives and their impacts. Your presence at this meeting is requested.

As I mentioned in our telephone conversation, I will try to schedule the meeting for the last week of June. Since you indicated Tuesdays are not good (for you), I have tentatively scheduled the meeting for Wednesday morning, July 1, 1998 at the State Highway District Office. I will set the time when I confirm the meeting date with the Department of Public Works.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING


Reginald Suzuki
Vice President

cc: DOT-Kauai, attn: Steve Morikawa
TC 26 Folder 595



AMFAC LAND COMPANY, LTD.
2970 Kele Street
Lihue, HI 96766

Facsimile

Date: July 9, 1998

To: Reggie Suzuki, Park Engineering

Fax: 808 536-5996

From: Dottie Bekteart

Phone: (808) 245-7887

Fax:

(808) 246-9549

Subject: Widening of Kaunualii Highway

Remarks:

Page(s): 2

Here are comments in response to your memorandum summarizing our meeting of July 1 from Lyle Tabata, present plantation manager and former manager of the mill. Please give me a call if there is anything you would like to discuss.

Amfac Sugar Kauai
2970 Kele Street
Lihue, Hawaii 96766

To: Dottie Bekteart

From: Lyle Tabata

Re: Park Engineering Memo of July 6, 1998 Kaunualii Highway Improvements

July 8, 1998

In response to the Park Engineering Conceptual plans A and A-1, I have prepared the following comments.

Plan A: There are several items that need further addressing. Item b, reconstruction of the cane conveyor lower structure is not the main obstacle item faced. The headshaft will have to be moved towards the mill and will then require the extension of the conveyor belt. In my estimate looking at the layout drawings, a considerable length. If this were to happen the drive would have to be re-engineered for the extra capacity required, the take-up tower for belt tensioning will need engineering, the spline of the horizontal curves will have to be re-examined, and finally if lengthening of the belt is required the age of the present belt a splice would not be sufficient so total replacement would be necessary. This would be over 3000 feet of conveyor belt. I estimate maybe \$500K would cover the work required. Item c, removal and reconstruction of the mill bagasse storage building. This also has a conveyor system installed inside of the building that would make redesign very complicated. To cut and splice a section of the belt at the age of our belts is not feasible. We would look to replace the entire belt as the cane conveyor belt at a considerable cost. I do not have the total length available at this time.

Plan A-1 This seems to require a minimal modification of our operational equipment of the two plans. Item d, is not and will not be an option while we are operating our grinding season. We need full time access to haul our mill mud press and boiler ash from our waste handling systems hourly. Via truck this material to land fill sites on the farm for disposal. The exact yardage per day can be calculated by establishing a counting procedure of truck loads per day now. We do not want to use public highway because of the variable stages of wetness the ash and mud press will hold. Sometimes the mud is so wet it flows all over the road. We do not want this to happen on a public highway. Our truck tailgates too do not seal very well and adds to this problem.

I do not think that the Hoamana road residents who are not plantation people would like to use our road, especially during rainy periods. The under sides of their cars will turn to wrecks. The acid of rotten cane juice mixed with the water is a deadly combination. I do not use my own personal car on cane roads if I can help it.

Lastly the road crossings that the state will limit us to would be totally dependent of whether we would still be farming the area or not. This is on the Grove farm land that I presume they are talking about. So this may or not be an issue. We would however like to propose stop lights be placed at these key crossings to help insure safety and prompt continued travel of our units. As I see it there may be only two crossings required. One at the intersection of Brewer Chemical and Kauai Nursery and Haku 15, then the other at the bottom of the Haku airstrip above the New Humane Society and top of Haku 22. It may be the right thing to do for all parties for insured safety.

Confidential: This fax is intended only for the person to whom it is addressed, and may contain a confidential economy-client communication or other confidential information. If you are not the intended recipient or an agent delivering it to the intended recipient, then you have received this fax in error, and any review, distribution or copying of this fax is strictly prohibited. If you receive this fax in error, please telephone us immediately, and return this fax to us by mail.

July 9, 1998

Mr. Lyle Tabata, Manager
Amfac Sugar Kauai
2970 Kele Street
Lihue, Hawaii 96766

Dear Mr. Tabata

Attention: Dottie Bekeart

Rc: Park Engineering Memo of July 6, 1998
Improvements to Kaunualii Highway &
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

Thank you for your memo of July 8, 1998 relative to the items discussed at our meeting on July 1, 1998. Your memo addresses and clarifies a number of questions we had concerning Plan A and Plan A-1. The information you provided will be helpful in making our assessment of the impacts of the two alternatives.

We will be transmitting your memo to the State Highways Division with a copy of this letter. We look forward to working with you in the future on this project.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING


Reginald Suzuki
Vice President

cc: DOT-Kauai, attn: Steve Morikawa
w/enclosure

TC 26 Folder 595

August 17, 1998

Mr. Lyle Tabata, Manager
Amfac Sugar Kauai
2970 Kele Street
Lihue, Hawaii 96766

Dear Mr. Tabata:

Re: Improvements to Kaunualii Highway &
Conceptual Designs for Hoomana Road
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

This is in further response to the concerns raised in your memo of July 8, 1998 to Dottie Bekeart. First and foremost, we wish to inform you that the State has reviewed all of the information on the impacts of Alignment "A" and Alignment "B". Based on this review, the State has decided to discard Alignment "A" from further consideration. As such, the designs for the highway improvements in the vicinity of Lihue Mill will be based on Alignment "B" which calls for widening the highway on the mauka side of the existing highway.

In response to your comments on CONCEPTUAL PLAN "A-1", the State and Paren, Inc. have investigated/studied two additional design alternatives for Hoomana Road (Refer to the enclosed design entitled CONCEPTUAL PLANS A-2 and A-3). Please note that these plans are still very preliminary and that a feasibility study must still be made. The study is contingent upon all impacted parties agreeing to one of these plans, the parties being Lihue Plantation (L.P.), the Department of Public Works, the owner of parcel TMK:3-8-16:20, and all of the residents on Hoomana Road. The following describes the features of each plan:

CONCEPTUAL PLAN A-2

1. The realigned Hoomana Road passes under the existing cane conveyor bridge. The grade for Hoomana Road at the bridge is controlled by the minimum vertical clearance

Improvements to Kaunualii Highway &
Conceptual Designs for Hoomana Road
August 17, 1998
Page 3 of 3

coordination with L.P. This also applies to PLAN A-3.

- e. Temporary access (through the cane field) by the residents of Hoomana Road can be avoided through proper scheduling and coordination by the contractor. This also applies to PLAN A-3.
2. PLAN A-3
- a. The relocation of the existing power pole(s) can be avoided by constructing retaining walls.
 - b. The construction of additional structural supports for the cane conveyor system can be avoided by constructing retaining walls.
 - c. The length of time that the mill road must be closed (once construction starts) is less than PLAN A-2.
 - d. Same as 1d above.
 - e. Same as 1e above.

Your review and comments on these plans are requested. Your earliest response will be appreciated.

Sincerely,

Paren, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President

cc: DOT-Kauai, attn: Steve Morikawa *fixed*

TC 26 Folder 595

Improvements to Kaunualii Highway &
Conceptual Designs for Hoomana Road
August 17, 1998
Page 2 of 3

required for L.P.'s trucks.

2. The existing ground supporting a portion of the cane conveyor system will be excavated and removed. Additional structural supports will therefore be required for this section.
3. The realigned road crosses an existing 40 feet wide electrical easement. The existing power pole(s) located within the realigned roadway must be relocated.
4. The major items of work that will affect L.P.'s use of the mill road are significantly less than PLAN A-1. For PLAN A-2, the major work will be (1) the roadway excavation in the vicinity of the mill road and (2) the construction of additional supports for the cane conveyor bridge (item 2 above).

CONCEPTUAL PLAN A-3

1. Because the intersection of Hoomana Road and Kaunualii Highway is located to the west of the existing cane conveyor bridge, Hoomana Road does not cross the cane conveyor bridge. Therefore, the work in items 2 and 3 above are not necessary (This is assuming retaining walls will be constructed).

2. The only major work that will affect the mill road is the roadway excavation in the vicinity of the mill road.

The following is a comparison of PLAN A-2 and PLAN A-3:

1. PLAN A-2
 - a. The stopping sight distance is slightly more than PLAN A-3.
 - b. The westbound acceleration lane is longer than PLAN A-3.
 - c. The eastbound deceleration lane is longer than PLAN A-3.
 - d. The disruption to hauling mill wastes (during the grinding season) can be avoided through proper



Amfac Land Company, Limited • Kauai Division

2970 Kele Street • Lihue, Kauai, Hawaii 96766

September 8, 1988

Reggie Suzuka
ParEn, Inc.
587 S. King Street, Suite 300
Honolulu, HI 96813-30366

Re: Improvements to Kaunualii Highway and conceptual designs for Hoomana Road,
Project No. 50DE-02-95

Dear Mr. Suzuka:

Thank you for your letter of August 17. We are glad that you have decided on an alignment that will add the new lanes in the vicinity of the Lihue Mill mauka of Kaunualii Highway.

We have reviewed Conceptual Plans A-2 and A-3. We would prefer A-3 for two reasons: 1) It would not interfere with the conveyor bridge, and 2) it would minimize the amount of time that the road to the Mill would be closed. However, please be advised that if an alternate route for our Mill traffic is not available during construction, we would require that the construction be done when the Mill is not operating. This would typically be during the winter months; the specific shut-down time differs from year to year.

As to the concerns I expressed regarding the old Hoomana Bridge, we have determined that this is not a significant problem, since the only traffic affected is moving large machinery and equipment. We now are required to have a controlled crossing using police; this would not change with a four-lane highway.

Thank you for the opportunity to review your proposals. Please feel free to call me at 245-7887 if there is anything you would like to discuss.

Very truly yours,
AMFAC LAND COMPANY, LTD.,
Agent for AMFAC SUGAR KAUAI

Dorothy R. Gekart
Land Manager

c: Lyle Tabata.

Telephone: 808-245-8786 • Facsimile: 808-246-9549

HWY-KE 4.980688

July 10, 1998

Mr. Angel Madrid
Amfac Sugar Kauai
Lihue Plantation Co., Ltd.
2970 Kele Road
Lihue, Hawaii 96766

Dear Mr. Madrid:

Subject: Kaunualii Highway Improvements, M/M 0.00 to 7.5
Project No. 50DE-02-95

Enclosed, for review, is one set of PRELIMINARY alignment plans for the project.

Prior to finalizing the alignments, we are requesting LP Co.'s review/comment on the plans, specifically, with regards to identifying existing cane haul road crossing Kaunualii Highway that could be eliminated. For increased public safety, wherever possible, we would like to eliminate existing cane haul road crossings if they are not absolutely required for your operations.

Please mark the plans with your comments, and return the marked set to this office. We will forward your comments, and the plan set, to the DOT consultant, ParEn, Inc.

Your input regarding this matter is important and if you have any questions, please call Steve Morikawa at 274-3118.

Sincerely,

STEVEN KYONO, P.E.
District Engineer

SM:cs
Encl.

cc: ParEn, Inc. (w/o enclosures)

11-11-88 10:11 AM



Amfac Land Company, Limited • Kauai Division

2870 Kele Street • Lihue, Kauai, Hawaii 96786

September 29, 1998

Steve Kyono
District Engineer
3080 Ewa Street, Room 205
Lihue, HI 96786

Re: Kaunualii Highway Improvements
Project No. 80DE-02-95

Dear Mr. Kyono:

This is in response to your letter dated July 10 to Angel Madrid requesting Amfac's input on cane haul crossings of Kaunualii Highway. Enclosed is a plantation field map showing Kaunualii Highway with the five cane haul intersections marked. Crossings 1, 2 and 3 are one-way crossings for hauling cane to mill. Numbers 4 and 5 are not crossings but are intensively-used interactions that should be accounted for in the design of the highway. It would decrease the efficiency and increase the sugar plantation's operating costs if any of these interactions were to be eliminated. Therefore, we ask that they be retained in the development of the plans to widen Kaunualii Highway.

All of the roads except no. 4 are on land owned by Grove Farm. Therefore, we suggest that Grove Farm be consulted for their input, if you have not done so already.

Thank you for requesting our input. These comments reflect current patterns. Any number of changes could occur between now and the implementation of the plans to widen Kaunualii Highway. I can be reached at 245-7887 should you need anything further.

Very truly yours,
AMFAC LAND COMPANY, LTD.,
Agent for AMFAC SUGAR KAUAI

Dorothy K. Bekeart
Land Manager

c: Lyle Tabata

Telephone: 808-245-8786 • Facsimile: 808-245-9549

April 16, 1998

Mr. Alan Smith
Grove Farm
3-1850 Kaunualii Highway
Lihue, Kauai, Hawaii 96786

Dear Mr. Smith:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preliminary Engineering Study

As you know, the Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigations/studies for the design of highway improvements for Kaunualii Highway.

The proposed project is approximately 7.5 miles in length starting at the Lihue Mill and extending to a point about half a mile beyond the junction of Maluhia Road (See attached map). The project will replace the present two lane highway with a four lane divided highway. In general, the new highway will follow the alignment of the existing highway.

Our work will be greatly facilitated if we had aerial contour maps of the Lihue/Koloa area in which our project lies. We are hoping that you may have such maps in your possession. If so, can you provide us with copies? We are willing to pay for the cost of the prints including mailing. If you do not have any (maps), can you direct us to someone who does? We will be most appreciative of your assistance in this matter.

As part of our work, we will also be preparing an environmental assessment. If you should have environmental concerns and/or information that we should know about, we will appreciate you making them known to us.

Your earliest response to the above will be appreciated.

Sincerely,
ParEn, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President

TC 26 Folder 595



Suite 200, Kihuna Road, P.O. Box 1850, Lihue, Hawaii 96766
Telephone (808) 531-1678 FAX (808) 536-5995

PAREN, INC. dba park engineering

September 23, 1998

Mr. Alan Smith
Grove Farm
3-1850 Kaunualii Highway
Lihue, Hawaii 96766

Dear Mr. Smith:

Re: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. SODE-02-95

We are presently gathering information to prepare an environment assessment for this project. We are hoping you have information such as average annual temperatures and rainfall and records of flood and hurricane damages. If you have information on earthquake damages, that information will be useful also.

Does Grove Farm record/keep such information? If so, can you provide the above information for the lands owned by Grove Farm in the vicinity of our project, eg. the area from Lihue to Kalahao?

Any information and/or assistance you can provide will be greatly appreciated.

Sincerely,

Paren, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President

TC 26 Folder 595

October 5, 1998

Mr. Alan Smith
Grove Farm
3-1850 Kaunualii Highway
Lihue, Hawaii 96766

Dear Mr. Smith:

Re: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. SODE-02-95

We have been contacting the various utility companies to provide them with updated information about our project. We have also been soliciting/requesting information to assist us in the planning and the designs for this project.

We understand that Grove Farm owns and operates the wastewater system for Puhi. Enclosed are the latest preliminary plans for the Puhi area (sheets 18, 19 and 20) showing the general alignment of the highway. Please advise us if any of your facilities lie within or are in close proximity of the project. If so, please provide us with construction plans of those facilities.

If you need additional information, please let us know. Your earliest response will be appreciated.

Sincerely,

Paren, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President

TC 26 Folder 595

October 7, 1998

Mr. Alan Smith
Grove Farm
3-1850 Kaunualii Highway
Lihue, Hawaii 96766

Dear Mr. Smith:

Re: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95


At the present time, there are a number of existing private roads that have access to Kaunualii Highway. When the State improves Kaunualii Highway to a four lane divided highway, the State will be imposing restrictions on access for public safety reasons. This means eliminating or restricting turning movements at some of the existing road intersections. To minimize adverse impacts to Grove Farm, we ask that you identify for us the existing accesses that are absolutely essential to your operation(s).

Enclosed is a map of the project which extends from Lihue to a point beyond Maluhia Road. Please indicate the information we are requesting on this map. If you have more suitable map(s) to show this information, please do so.

Your earliest response to this request will be appreciated.

Sincerely,

Parren, Inc.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

cc: DOT-Kauai, attn: Steve Morikawa

TC 26 Folder 595

October 26, 1998

Mr. Mike Furukawa
Vice President
Grove Farm
3-1850 Kaunualii Highway
Lihue, Hawaii 96766

Dear Mr. Furukawa:

Re: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95


Reference is made to Mr. Henry Morita's facsimile memo of October 23, 1998. Mr. Morita was good enough to provide us with some additional information via telephone but he was not able to provide much information about Grove Farm's future development plans. We will appreciate it if you would provide us with information on:

1. Future mauka extension of Nuhou Street into the Wilcox property [to serve Gaylord's, KKC and Island School].
2. Future development for the area between Village West and Nuhou Street.
3. Future shopping area west of Puhi Road
4. Future plans for the existing cane haul road currently used by Lihue Plantation Co. Refer to attached MAP "A" for location. What is Grove Farm's master plan as far as maintaining or removing this road?

Any maps and/or plans showing these kinds of information will be most helpful.

Sincerely,

Parren, Inc.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

TC 26 Folder 595

Grove Farm Properties, Inc.

November 3, 1998

Mr. Reginald Suzuka
Vice President
PartEn, Inc.
Suite 300, Kawalahaio Plaza
567 South King Street
Honolulu, HI 96813-3036

Dear Mr. Suzuka:

Subject: Improvements to Kaunuaui Highway; Lihue to West of Maluhia Road (Koloa); Kauai Environmental Studies; Project No. 50DE-02-95

Reference is made to your October 26, 1998 letter on the subject matter. Following are responses to the four items mentioned in your letter.

1. The future extension of Nuhou Street into the Wilcox property would be determined by the mauka property owners, Wilcox Trust, Kauai Community College and Island School. Grove Farm is currently constructing the Nuhou Street-Kaunuaui Highway Improvements project. During the project's planning the owners were contacted as to their interest in a cross intersection. However, the timing was too early for them. It would make sense that the extension into the Wilcox property is made when Kaunuaui gets widened. I would suggest contacting the owners directly on their intentions. Wilcox Trust - Fred Atkins, 245-3608; KCC - Gary Nikka, 245-8230; Island School - David Pratt, 246-0233.
2. Development of the area between Village West and Nuhou Street, zoned commercial, would be dictated by market forces. The parcel would have access off Nuhou when that project is completed early next year. The parcel could be sold as bulk or finished lots but the timing is uncertain.
3. Regarding the future shopping area west of Puhi Road, a small plaza-type development at the corner of Kaunuaui and Puhi Road, with an office/retail mix, is planned. Construction should begin next year. The former Fisherman's Galleys restaurant space is available for leasing. A restaurant or retail use would seem to be appropriate. Heading further west, the Stigmeier and Grove Farm office buildings will remain in those uses for the foreseeable future.
4. In regards to the cane haul road in question, the portion makai of Kaunuaui, owned by Grove Farm, is located in the commercial area described in 2 above. It is no longer a through road and is not part of the master plan. When the commercial parcel gets developed or sold the cane haul road will be eliminated. The portion

A subsidiary of



P.O. Box 2069 Puhi Rural Branch Lihue, Hawaii 96765-7069
Phone (808) 245-3878 FAX (808) 246-9470

Mr. Reginald Suzuka
November 2, 1998
Page 2

mauka of the highway is owned and used by Antiac/Lhuc Plantation. You should contact them regarding their plans for this portion. You can try John Higham in their Honolulu office or Richard Edsall in Lihue, 245-7325.

Hopefully this information will be helpful. If there are further questions please feel free to contact me at (808) 245-3878.

Sincerely,

GROVE FARM PROPERTIES, INC.

Michael H. Furukawa
Vice President and Project Manager

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

February 12, 1999

Mr. Allen A. Smith
Vice President & C.E.O.
Grove Farm
3-1850 Kaunualii Highway
Lihue, Hawaii 96766

Dear Mr. Smith:

Re: Access Road to Huleia Quarry
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

We are investigating several design alternatives for the Quarry Access Road intersection. An important consideration in our evaluation and comparison of these alternatives is the time period that the quarry will be in operation. If you already have this information, we will appreciate you letting us know what it is. If not, an "educated guess" will suffice. This "guess" could be as approximate as 5 years, 10 years, 15 years, etc.

Your earliest response will be appreciated.

Sincerely,

Paren, Inc.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

cc: DOT-Kauai, attn: Steve Morikawa

TC 26 Folder 595

November 13, 1998

Mr. David Pratt
Island School
3-1875 Kaunualii Highway
Lihue, HI 96766

Dear Mr. Pratt:


Re: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

We understand Island School uses the existing Kauai Community College road for access. Since this project will affect Island School, we are enclosing a copy of our letter to the college [including a print of the plan] about the improvements to the existing intersection.

Should you have question(s) or need additional information, please feel free to contact the undersigned or the State Highways Division on Kauai.

Sincerely,

Paren, Inc.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

cc: DOT Kauai, attn: Steve Morikawa

TC 26 Folder 595



Monday, December 14, 1998

Mr. Reginald Sumika, Vice President
Park Engineering
Suite 300, Kawahao Plaza
567 South King Street
Honolulu, Hawaii 96813-1036

RE: Improvements to Kaunualii Highway

Dear Mr. Sumika:

Thank you for your letter and schematic on proposed improvements to the access to Kauai Community College. This improvement long has been needed, and we are pleased to be kept informed. Afternoon, especially Tuesdays and Thursdays, between say 3:00 p.m. to 3:30 p.m., there has been congestion and delays in leaving the campus. A particular problem has been a corner which has impeded the departure of cars going to the West side. Your plan indicates that this is to be modified, thereby allowing cars going to the West side to exit more quickly than at present.

Some mornings there is a problem with entering the campus. Two factors contribute to this: 1) the left-turn lane is short. When it fills, cars behind must wait the movement of those ahead before proceeding in any direction, either straight ahead or to the left; 2) the green light following a left turn into the campus comes and goes quickly. Only a few cars can make it through the intersection before the light changes.

For our part, we have temporarily changed our school schedule so that students may leave campus before the rush hits at 3:00 p.m. to 3:15 or 3:20 p.m. Also, the length of light for exiting the Kauai Community College Campus has been lengthened - between 3:00 p.m. to 3:30 p.m. The improvements shown on your schematic should be of assistance as well.

Thank you, again, for contacting us. Please let us know if there might be anything we could do to ensure success of this worthwhile project.

Yours very truly,

David W. Pratt
David W. Pratt, President
Board of Directors
Island School

cc: Gary Niina
Steve Morikawa

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1998-1999

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Accredited by the Western Association of Schools and Colleges

May 14, 1998

Ms. Peggy Cha, Provost
Kauai Community College
3-1901 Kaunualii Highway
Lihue, Kauai, Hawaii 96722

Dear Ms. Cha:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preliminary Engineering Study
and Environmental Assessment

The State Department of Transportation has engaged our firm to conduct preliminary engineering investigations/studies for the design of highway improvements for Kaunualii Highway. The purpose of this letter is to inform about the project and to provide you with preliminary information that's relevant to Kauai Community College. Accordingly, we are enclosing a conceptual plan of the proposed highway at the entrance (road) to the college.

In general, the proposed project will be approximately 7.5 miles in length starting at the Lihue Mill and extending to a point about a half mile beyond the junction of Maluhia Road (see attached map). The project will replace the present two lane highway with a four lane divided highway. In general, the new highway will follow the alignment of the existing highway.

If you have comments and/or concerns about this project, please contact us (preferably by letter) at your earliest convenience.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING

Reginald Suzuki
Reginald Suzuki
Vice President

cc: DOT- Kauai, attn: Steve Morikawa

TC 26 Folder 595

November 13, 1998

Mr. Gary Nitta
Administrative Service Director
Kauai Community College
3-1901 Kaunualii Highway
Lihue, HI 96766

Dear Mr. Nitta

Re: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

The State Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigation/studies for the design of highway improvements for Kaunualii Highway.


The purpose of this letter is to provide you with advance information about the project. The total project is roughly 7.5 miles long, starting at the Lihue Mill and extending to a point about half a mile beyond the junction of Maluhia Road. In general, the Department plans to improve the present highway from a two lane to a four lane divided highway.

At the present time, Kauai Community College has one access located at the intersection of Kaunualii Highway and Puhi Road. The Department plans to maintain this access and improve it to a full service intersection as shown on the enclosed preliminary plan (sheet 19).

Should you have question(s) or need additional information, please feel free to contact the undersigned or the State Highways Division on Kauai.

Sincerely,

Patren, Inc.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

cc: Mr. David Pratt
(print of sheet 19 included)

DOT Kauai, attn: Steve Morikawa

TC 26 Folder 595

August 20, 1998

Kauai Electric
Engineering Department
4463 Pahee Street
Lihue, Hawaii 96766

Gentlemen:

Re: Improvements to Kaunualii Highway/
Conceptual Designs for Hoomana Road
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

The State Department of Transportation has engaged Paren, Inc. to conduct preliminary engineering investigation/studies for the design of highway improvements for Kaunualii Highway. The purpose of this letter is to inform you about this project and to provide you with some advance information relevant to your facilities in the vicinity of Hoomana Road.

The project is approximately 7.5 miles long starting at Lihue Mill and extending to a point about half a mile beyond the junction of Maluhia Road. A map of the project is on the enclosed title sheet plan, sheet 1. The project will replace the present two lane highway with a four lane divided highway.

At Lihue Mill, the two new additional lanes will be constructed on the mauka side of the existing highway. This will include the construction of a new bridge next to the existing Lihue Mill Bridge. Because of the close proximity of the new bridge to the existing Hoomana Road bridge, access via the existing Hoomana Road will not be possible. A new access (road) will therefore be provided for the residents of Hoomana Road. We are presently studying two plans, Conceptual Plan A-2 and Conceptual Plan A-3, as possible designs for realigning Hoomana Road. Enclosed are prints (each one) of these plans. Please note that these plans are still very preliminary and that we must still conduct a study to determine their feasibility.

Plan A-2 will require that two of the existing power poles,

Improvements to Kaunualii Highway/
Conceptual Designs for Hoomana Road
August 20, 1998
Page 2 of 2

Pole "A" and Pole "B", be relocated. Plan A-3 will require that Pole "B" and possibly Pole "A" be relocated, said relocation depending on the design of retaining walls for the realigned road. Please review these plans and provide us with any comments you may have.

Before making a final decision (on these plans), the State and Paren, Inc. will contact all parties impacted by the realignment and review their comments and/or concerns. The impacted parties include Lihue Plantation, the Department of Public Works, the owner of parcel TMK:3-8-16:20 and all of the other residents of Hoomana Road.

If you have question or require additional information, please feel free to contact us by telephone or letter. Our telephone number is 808-5311676. Your earliest response will be appreciated.

Sincerely,

Paren, Inc.
dba PARK ENGINEERING



Reginald Suzuka
Vice President

cc: DOT-Kauai, attn: Steve Morikawa

TC 26 Folder 595

May 12, 1998

The Kauai Humane Society
P.O. Box 530
Hanapepe, Kauai, Hawaii 96716

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preliminary Engineering Study and Environmental Assessment

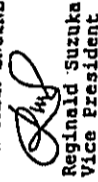
The State Department of Transportation has engaged our firm to conduct preliminary engineering investigations/studies for the design of highway improvements for Kaunualii Highway. The purpose of this letter is to inform you about this project and to solicit information you may have that we should be aware of.

The proposed project is approximately 7.5 miles in length starting at the Lihue Hill and extending to a point about a half mile beyond the junction of Maluhia Road (See attached map). The project will replace the present two lane highway with a four lane divided highway. In general, the new highway will follow the alignment of the existing highway.

If you have information and/or concerns about this project, please contact us (preferably by letter) at your earliest convenience.

Sincerely,

Paren, Inc.
dba PARK ENGINEERING



Reginald Suzuka
Vice President

cc: DOT-Kauai, attn: Steve Morikawa → faxed 5/15/98

TC 26 Folder 595

November 16, 1998

Mr. Robert Steputis
Landscape and Planting Chairman
Outdoor Circle
P.O. Box 921
Lihue, Hawaii 96766

Re: Existing "Tree Tunnel" along Maluhia Road
Improvements to Kaunualii Highway,
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

The State Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigation/studies for the design of highway improvements for Kaunualii Highway. The project is approximately 7.5 miles long, starting at the Lihue Mill and extending to a point about half a mile beyond the junction of Maluhia Road. In general, the Department plans to improve the present highway from a two lane to a four lane divided highway.

We are currently considering two highway alignment alternatives in the vicinity of the Maluhia Road/Kaunualii Highway intersection. One alignment, ALIGNMENT "A", is a design that will widen the highway on the makai side of the existing highway. The other alignment, ALIGNMENT "B", is a design that will widen the highway on the mauka side. The designs for the Maluhia Road intersection are shown on the enclosed CONCEPTUAL PLAN D-5 and CONCEPTUAL PLAN D-6, respectively. We are also enclosing a print of sheets 9 and 26 for the two highway alignments, ALIGNMENT "A" and ALIGNMENT "B", on which the two existing wetlands in the vicinity of the intersection are shown.

As indicated on these plans, ALIGNMENT "A"/CONCEPTUAL PLAN D-5 will have a greater impact on the existing trees and less on the Wetlands. The opposite is true for ALIGNMENT "B"/CONCEPTUAL PLAN D-6. Please note that these are conceptual plans that must still be coordinated with the Kauai County Department of Public Works, the agency responsible for the future improvements to Maluhia Road.

Existing "Tree Tunnel" along Maluhia Road
Improvements to Kaunualii Highway
November 16, 1998
Page 2 of 2

Your review, comments and/or suggestions on these plans are requested. Your earliest response will be appreciated.

Sincerely,

Paren, Inc.
dba PARK ENGINEERING



Reginald Suzuka
Vice President

cc: DOT- Kauai, attn: Steve Morikawa

TC 26 Folder 595



P.O. BOX 921
LHAUE, HAWAII 96766

THE KAUI OUTDOOR CIRCLE

December 5, 1998

Mr. Reginald Suzuka, Vice President
ParEn, Inc./Park Engineering
Suite 300, Kawaiahao Plaza
567 South King Street
Honolulu, HI 96813-3036

Dear Mr. Suzuka:

Thank you for your letter and blueprints dated November 16, 1998, informing the Kauai Outdoor Circle about the planned road widening at the Maluhia Road-Kaunualii Highway intersection.

The Circle supports Alignment B, which proposes to widen the highway on the mauka side. It is our view that the importance of the trees outweighs the importance of the "wetlands" in this case.

Thank you for inviting us to comment at this early stage. It is noted that these are conceptual plans which will later be coordinated with the Kauai County Department of Public Works.

Sincerely yours,
Robert R. Stepuis
Robert R. Stepuis
Chairman
Landscape and Planning

100% Recycled Bond



P.O. BOX 921
LHAUE, HAWAII 96766

THE KAUI OUTDOOR CIRCLE

January 5, 1999

Mr. Reginald Suzuka, Vice President
ParEn, Inc./Park Engineering
Suite 300, Kawaiahao Plaza
567 South King Street
Honolulu, HI 96813-3036

Subject: My letter dated December 5, 1998 - changes thereto

Dear Mr. Suzuka,

Thank you again for your invitation to The Kauai Outdoor Circle to provide input about the widening at the Maluhia Road - Kaunualii Highway intersection. After a careful personal site inspection and evaluation, it now appears we should favor alignment A, endeavoring to save as many trees as possible, mauka. Perhaps those trees could form a lane separation?

We request that mature trees which are removed be replaced to maintain the tunnel of trees appearance. This would be a good stewardship step to offset the ever-declining number of trees as development encroaches everywhere. The replanting should be part of the road project completion, along with final grading and grassing.

Sincerely yours,
Robert R. Stepuis
Robert R. Stepuis
Chairman
Landscape and Planning

100% Recycled Bond

May 12, 1998

Kaunualii Investment Co. and Koamalu Associates
c/o Kauai Realty Co.
2970 Kress Street
Lihue, Kauai, Hawaii 96766

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preliminary Engineering Study and Environmental Assessment

The State Department of Transportation has engaged our firm to conduct preliminary engineering investigations/studies for the design of highway improvements for Kaunualii Highway. The purpose of this letter is to inform you about this project and to solicit information you may have that we should be aware of.

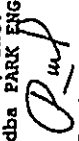
The proposed project is approximately 7.5 miles in length starting at the Lihue Mill and extending to a point about a half mile beyond the junction of Maluhia Road (See attached map). The project will replace the present two lane highway with a four lane divided highway. In general, the new highway will follow the alignment of the existing highway.

We are studying two alignment alternatives for the project from Rice Street to Nawiliwili Road. ALIGNMENT "A" is an alternative with the highway widen on the makai side of the existing highway. ALIGNMENT "A-1" depicts the widening on the mauka side. Schematic plans for these alternatives are provided for your information.

If you have information and/or concerns about this project, please contact us (preferably by letter) at your earliest convenience.

Sincerely,

PAREN, INC.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

cc: DOT- Kauai, attn: Steve Morikawa *faxed 5/13/98*

TC 26 Folder 595

November 12, 1998

Mr. Fred Atkins
Kloehana/Wilcox Trust
P.O. Box 3121
Lihue, HI 96766

Dear Mr. Atkins

Re: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

The State Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigation/studies for the design of highway improvements for Kaunualii Highway.


The purpose of this letter is to provide you with advance information about the project. The total project is roughly 7.5 miles long, starting at the Lihue Mill and extending to a point about half a mile beyond the junction of Maluhia Road. In general, the Department plans to improve the present highway from a two lane to a four lane divided highway.

At the present time, access for the parcel of land own by the Wilcox Trust (TK 3-4-0511) to Kaunualii Highway is via the existing paved road along the western boundary. The Department plans to maintain this access by providing a modified full service intersection. A print of the plan [sheet 20] that shows the new intersection is enclosed.

Should you have question(s) or need additional information, please feel free to contact the undersigned or the State Highways Division on Kauai.

Sincerely,

PAREN, INC.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

cc: Mr. Wally Wallace
(print of sheet 20 included)

DOT Kauai, attn: Steve Morikawa

TC 26 Folder 595



November 16, 1998

Mr. Reginald Suzuka
Vice President
Park Engineering
Suite 300, Kawalahao Plaza
567 South King Street
Honolulu, Hawaii 96813-3036

Dear Mr. Suzuka:

Thank you for taking the time to answer my questions pertaining to the proposed 4-lane highway. The layout looks good in regards to entering the property from the highway. In regards to turning left from the property, it is critical to have, at least, an "island" area/merging lane that can accommodate two vehicles.

At the present time, we have an island area, but it is not clearly designated and our visitors don't realize it is usable. They will wait for both lanes to clear, which backs up those cars trying to leave Kilohana.

If you have any questions, please don't hesitate to give us a call. Please send us any new information as it becomes available.

Sincerely,


Fred Atkins
General Partner

P.O. Box 3121, Uluhe, Island of Kauai, Hawaii 96766 / (808) 245-5608

April 16, 1998

Mr. Allan Zawtcocki/Trustee
Knudsen Trust
Real Estate Management
P.O. Box 3200
Honolulu, Hawaii 96847

Dear Mr. Mr. Zawtcocki:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preliminary Engineering Study

As you know, the Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigations/studies for the design of highway improvements for Kaunualii Highway.

The proposed project is approximately 7.5 miles in length starting at the Lihue Mill and extending to a point about half a mile beyond the junction of Maluhia Road (See attached map). The project will replace the present two lane highway with a four lane divided highway. In general, the new highway will follow the alignment of the existing highway.

Our work will be greatly facilitated if we had aerial contour maps of the Lihue/Koloa area in which our project lies. We are hoping that you may have such maps in your possession. If so, can you provide us with copies? We are willing to pay for the cost of the prints including mailing. If you do not have any (maps), can you direct us to someone who does? We will be most appreciative of your assistance in this matter.

As part of our work, we will also be preparing an environmental assessment. If you should have environmental concerns and/or information that we should know about, we will appreciate you making them known to us.

Your earliest response to the above will be appreciated.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

TC 26 Folder 595

LIHUE PUBLIC CEMETERY ASSOCIATION

PUHI RURAL BR. 2099
LIHUE, HAWAII 96766

Mr. Reginald Suzuka
Vice President

ParEn, Inc.

DbA Park Engineering
Suite 300, Kawaihāo Plaza
567 South King Street
Honolulu, Hawaii 96813-3036

Re: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)

We have looked over the maps enclosed with your letter and are appalled that you are using a map dated 1936. There have been many changes in the last 62 years, including the property that now belongs to the Lihue Cemetery. Our property now runs up to the Kaunualii Hwy, and does include a 20 foot set back for highway improvement.

Obviously we prefer Alignment "A-1".

For your further information, the 20 foot setback includes provision for a 100 year flood. The "A" configuration would necessitate the partial removal of the Lihue Plantation's bagasse house, therefore we highly recommend the "A-1" configuration.

We expect to hear from you again.

Very truly yours:

Maureen W. Morrison
Maureen W. Morrison, President

W. D. Goodale 5/20/98
Holbrook Goodale, Treasurer

May 13, 1998

Lihue Community Cemetery Association
P.O. Box 2099
Lihue, Kauai, Hawaii 96766

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preliminary Engineering Study and Environmental Assessment

The State Department of Transportation has engaged our firm to conduct preliminary engineering investigations/studies for the design of highway improvements for Kaunualii Highway. The purpose of this letter is to inform you about this project and to solicit information you may have that we should be aware of.

The proposed project is approximately 7.5 miles in length starting at the Lihue Hill and extending to a point about a half mile beyond the junction of Maluhia Road (See attached map). The project will replace the present two lane highway with a four lane divided highway. In general, the new highway will follow the alignment of the existing highway.

We are studying two alignment alternatives for the project from Rice Street to Nawiliwili Road. ALIGNMENT "A" is an alternative with the highway widen on the makai side of the existing highway. ALIGNMENT "A-1" depicts the widening on the mauka side. Schematic plans for these alternatives are provided for your information.

If you have information and/or concerns about this project, please contact us (preferably by letter) at your earliest convenience.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING

RS
Reginald Suzuka
Vice President

cc: DOT- Kauai, attn: Steve Morikawa ← faxed 5/13/98

TC 26 Folder 595

CONTRACTORS ASSOCIATION OF KAUAI
4231 AHUKINI ROAD
LIHUE, HI 96766
PHONE: (808) 246-2662 FAX: (808) 246-8642



FAX TRANSMISSION

May 22, 1998

Lihue Community Cemetery Association
P.O. Box 2099
Lihue, Kauai, Hawaii 96766

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Preliminary Engineering Study and Environmental Assessment

This is to acknowledge the receipt of your letter of May 20, 1998. We will be sending a copy (of your letter) to the State Highways Division.

Our current assignment is to conduct a preliminary engineering investigation/study for the design of highway improvements for Kaunualii Highway. The final designs and the preparation of contract documents for construction are not a part of our present scope of work.

The two reasons for our letter of May 13, 1998 were (1) to inform you about the project and (2) to solicit information and comments. As you are probably aware, there are other land owners who may be impacted by this project. Accordingly, we have written to them also (this includes Lihue Plantation). You can be assured that the comments and concerns of all respondents will be carefully reviewed and considered in selecting the final alignment.

With respect to your comment about the 100 year flood, we will be investigating and studying the impact(s) of the new highway improvements on the existing highway drainage facilities and will be making recommendations on drainage improvements to the State Highways Division in accordance with their design requirements.

Sincerely,
ParEn, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President

cc: DOT- Kauai, attn: Steve Morikawa
(copy of LFCA's letter enclosed)

TC 26 Folder 595

If you do not receive ___ pages (including cover page), please call 246-2662.

RECEIVED
MAY 1998 - KAUAI
2000 JAN 11 A 11:48

Date: January 14
TO: Steve Kyono
FROM: Karen Taketa
RE: INFORMATIONAL MEETING ON KAUNUALII HWY IMPROVEMENTS...

MESSAGE:

Steve, just wanted to send you a note thanking you and congratulating you for facilitating one of the best informational meetings I have ever been to. It was so refreshing. So positive. So constructive. And all done with humor, finesse and good taste!! I know you are frequently on the receiving end of complaints, complaints and more complaints so wanted to let you know that you had many of us impressed. Thank you so very much.

I think you would appreciate a comment John Romanowski of Jas. W. Glover was sharing with me. He had been to several informational meetings your department has held in his Honolulu neighborhood because of proposed work and it has turned adversarial. He was impressed with the homework you and your consultants and staff had to do to prepare for the meeting and it showed. You, your staff and the consultants made him feel better that your entire department was not like your colleagues in town. He left Kauai feeling pretty upbeat and feeling good that you folks are going to make sure those businesses in the quarry will not be overlooked in the improvement process.

Thank you again Steve for a job well done. You worked hard to make this look easy. We know.

Nov.. please go get those lands in front of Coco Palms!

Public Comment Form

Improvements to Kaunualii Highway

Lihue to West of Maluhia Road

County of Kauai, Hawaii

State of Hawaii Department of Transportation

Highways Division

RECEIVED

DEPT. OF TRANSPORTATION - KAUAI

JAN 18 A 10 09

The information you provide in this form will help the State Department of Transportation in planning the improvements to Kaunualii Highway project. We appreciate any comment you may have.

Name: James Davis Mayfield
Address: 4651 Hoomana Road, Lihue, HI. 96766

Telephone (day): 808-246-0411
Telephone (eve): 808-245-1860

Please make any comments below:

The only acceptable plan is one of the "B" plans. C,D,E would radically change the traffic flow on the road in an unsatisfactory manner. The heaviest users are the church and the pre-school and if C,D or E were chosen, those people would have to drive to their church from the rear of Hoomana creating a substantial traffic flow on a road not designed for that level of traffic.

In regards to the "B" plans, the concern is that some allowance must be made to allow the children who live on Hoomana to be able to walk and bicycle to both Kukui Grove (south) and McDonalds on the north. If a tunnel is chosen, sufficient lighting must be installed so that the tunnel is not pitch dark without the lighting being so bright as to bother the neighboring homeowners.

In any case, "B" must be landscaped in some manner consistent with the neighborhood. Bananas trees require little maintenance and fit with the neighborhood.

You should also have the next meeting regarding Hoomana Road at the Lutheran Church on Hoomana. It helps to develop community spirit - Pastor Paul Firschner 245-2145.

Public Comment Form

Improvements to Kaunualii Highway

Lihue to West of Maluhia Road

County of Kauai, Hawaii

State of Hawaii Department of Transportation

Highways Division

RECEIVED

DEPT. OF TRANSPORTATION - KAUAI

JAN 18 A 10 09

The information you provide in this form will help the State Department of Transportation in planning the improvements to Kaunualii Highway project. We appreciate any comment you may have.

Name: Robin K. Robinson
Address: P. O. Box 3633
4730 Hoomana Road
Lihue, HI 96766

Telephone (day): (808) 338-8300 ext. 110 or (808) 635-6846
Telephone (eve): (808) 635-6846 or (808) 635-5385

Please make any comments below:

Kaunualii Highway Improvement Project - Access to German Hill; Scheme B

Mr. Kyono,

I would like to urge you to please consider Scheme B as the most logical alternative to providing access to Hoomana Road. Of the three options within Scheme B, it would seem option 1 would be the most cost effective. Option 2 will cost more and option 3 will have a height limit on vehicles and will be the most costly.

I believe the best possible alternative are being considered on all phases of this project. I commend you and all associated with this project for the superior work being performed.

Sincerely,

Robin K. Robinson

Public Comment Form

Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

RECEIVED
SYS - KAUAI
2000 JAN 19 A 10:33

Public Comment Form
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the improvements to Kaunualii Highway project. We appreciate any comment you may have.

Name: Shanti Cassidy
Address: 2829 N. H. Kono
Salon, HI 96756

Telephone (day): 742-9367
Telephone (eve): "

Name: Nadine P. Robinson
Address: P. O. Box 3633
4730 Hoomana Road
Lihue, HI 96786

Telephone (day): (808) 245-6467
Telephone (eve): Same

Please make any comments below:

I thought breadth of information was good. Due to large turnout for Hoomana Rd concerns, I did not stay to show comments. Very glad to see median still planned. I did not see information with specific plans for agricultural & planting. That is important! I strongly support sub alternatives in last segment, approaching Maluhia Rd. As you know, EPA recommends NO from lanes beyond Maluhia. It is nice to see planting & lane segments. It is quite rural by this section of the highway. The sooner the split lanes, the better.

Please make any comments below:

Kaunualii Highway Improvement Project - Access to German Hill; Scheme B
Mr. Kyono,
Please consider Scheme B as the best option to provide access to Hoomana Road. Scheme C, D & E all impact Lihue Plantation and their operations negatively. Hoomana road and the community along it is unique to Lihue and should be preserved. Scheme B provides optimum safety and has minimal impact on the community. Of the three options under Scheme B, I prefer option 1 or 2.

Thank you,
Nadine P. Robinson
Nadine P. Robinson

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32



RECEIVED
COUNTY OF KAUAI
2000 JAN 20 A 10:45

Public Comment Form
Improvements to Kaunuaʻali Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

January 20, 2000

Mr. Steven M. Kyono
District Engineer
Department of Transportation
Highways Division
State of Hawaii
3060 Elwa Street, Room 241
Lihue, HI 96768

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaunuaʻali Highway project. We appreciate any comment you may have.

Name: LYNN A. GAZELA
Address: 4135 HOOMANA RD
Lihue, HI 96768
Telephone (day): 246-3356 (ext 3)
Telephone (eve): 245-8457

Please make any comments below:

Subject: Improvements to Kaunuaʻali Highway; Lihue to West of Maluhia Road

We attended last Thursday's public informational meeting on the subject matter and have reviewed the preliminary plan materials distributed. At this time we don't see any major issues regarding Grove Farm's lands that couldn't be easily resolved. We concur with your proposed expansion plans for makuai or mauka, depending on the segment.

As you develop more detailed plans we would be happy to discuss issues as they arise. As the island's economy improves more traffic can be expected and we encourage the State to expedite implementation of these improvements. We look forward to working with you on this project.

Sincerely,
GROVE FARM COMPANY, INCORPORATED
Michael H. Furukawa
Michael H. Furukawa
Vice President and Project Manager

This is with regard to access to German Hill. My home is situated near what is now the end of Hoamana Road. Mine is the last house on the right side before the empty lots.

I am opposed to accessing German Hill by way of Ehiku Street (either Schemes E or D) or by way of the cane haul road that runs behind German Hill and directly behind my home (Scheme C). I am opposed to access by these means, above all, because of added traffic, dust, and noise. Also, with more cane trucks using the cane haul road designated as Scheme E due to the closing of the Kekaha Sugar Mill, this would make for very hazardous driving conditions. Adding to the hazardous conditions is the fact that Ehiku Street has already been designated as the access road for the Lihue Energy Service Center site (for the KE power plant).

With regard to Schemes A and B, the route in Scheme B appears more direct and less treacherous, however, the most feasible of either of these alternatives (Scheme A or B) would be acceptable.

Thank you very much for allowing me the opportunity to voice my concerns. I look forward to hearing from you in the next phase of the planning/development process.

P.O. Box 2069 Puna Rural Branch Lihue, Hawaii 96766-7069
Phone: (808) 245-3678 FAX (808) 246-9470

Public Comment Form

Improvements to Kaunualii Highway
Lihue to West of Maluhia Road

2800 JUN 28 A 11: 25

County of Kauai, Hawaii

State of Hawaii Department of Transportation
Highways Division

MICHAEL I. BELLES
DAVID W. CLAWSON, JR.
DAVID J. WILSON
DONALD H. WILSON
HAWAII BAR NO. 19-01110

BELLES GRAHAM
PROUDFOOT & WILSON
ATTORNEYS AT LAW

ABSOLOUTE
PASCAL V. BAUX
OF COURAGE
PHOTOGRAPHY, CHON

WATUMULL PLAZA
4334 RICE STREET, SUITE 202
LIHUE, KAUAI, HAWAII 96766-1388

TELEPHONE NO: (808) 245-4705
FACSIMILE NO: (808) 245-3777
E-MAIL: mb@baw-w.com

Name: William A. & Aileen Jim's Sr.

Address: 4696 HOOMANA RD.
LIHUE, HI 96766

Telephone (day): 337-1491 (Bus.) Page: 1 of 3

Telephone (eve): 245-9163 (Home phone) 654-1936

Please make any comments below:

Steven: Thank you for having the info meeting on our road. My wife & I have lived in the same house on Homan Hill for 27 years. Five years ago I purchased our home from AMFAC Sugar. I have worked for L.P.C. & AMFAC for 27 years. We do not want Schemes C, D, & E. We do not want Scheme A. Too much curves in a new road.

For us - Scheme B is the best. As for the 3 options we are undecided. We would need more detail to make a selection.

Thank you -
Bill Jim's Sr.

RECEIVED
KAWAII
2000 JUN - 2 A 11: 56

February 2, 2000

Mr. Steven M. Kyono, P.E.
District Engineer
Department of Transportation
Highways Division--Kauai District
3060 Ewa Street, Room 205
Lihue, Kauai, Hawaii 96766

Re: Hoomana Road, Project No. 50DE-02-95

Dear Mr. Kyono:

I am writing on behalf of our clients Barnes and Helen Riznik. The Rizniks are property owners and residents of 4767 Hoomana Road in Lihue. We wish to thank you for holding the public information meeting on January 13, which both Mr. Riznik and I attended. We found it very informative and helpful to our understanding of the Kaunualii Highway widening project and the options for providing continued access to Hoomana Road.

The Rizniks have lived on their property for 25 years and are hopeful that future access to Hoomana Road will be resolved in a manner that is fair for all of the present property owners and others who use the street to go to and from those properties.

After listening to the presentation on January 13, it seems that three of the alternative access plans (options C, D and E) would result in the re-routing of all traffic through what is now open or agricultural land behind Hoomana Road and placement of a new road immediately in front of the Rizniks' property to handle this traffic. Use of the new road and traffic routing would include all daily traffic to and from the Lutheran Church and its pre-school. Such a scheme would have a serious negative impact on the value of the Rizniks' property, and would create an unsafe situation for them and the general public in that (a) because there is virtually no front yard on the Rizniks' property, the road intersection would be located immediately next to their existing house, and the Rizniks would be forced to enter and leave their carport right where the new intersection would be located. Also, by placing an intersection in such close proximity to the Riznik house, their visitors would have to park some ways down Hoomana Road and walk to the

(\\A:\DOCS\52461\HW00-0202.DOC)

Mr. Steven M. Kyono, P.E.
District Engineer
Department of Transportation
February 2, 2000
Page 2

house, thus causing increased danger to those pedestrians and the vehicular traffic on Hoomana Road.

In addition to the effect of options C, D and E on the Rizniks' property and interests, those options appear to be undesirable for at least two other reasons:

1. What is currently the "upper" portion of Hoomana Road is a narrow, neighborhood street that does not currently handle large volumes of traffic and is in regular use by children and adults on bicycles and on foot. There would be obvious safety concerns with a re-routing of all Hoomana Road traffic through the upper part of the neighborhood.


2. The re-routing of access to Hoomana Road would result in significant delays in fire, police and ambulance response times in the event of emergencies.

It appeared to be the consensus of those in attendance at the January 13 meeting that options C, D and E were not acceptable alternatives, and we hope that this opinion is shared by the planners of the project and will therefore focus attention on the other alternatives that were presented for future access to Hoomana Road.

Thank you again for sharing the preliminary plans for this project. Please add the Rizniks and our office to the list of recipients of the draft Environmental Assessment for this project when it is completed.

Very truly yours,

BELLES GRAHAM
PROUDFOOT & WILSON



Donald H. Wilson

DHW:dhw

cc: Mr. And Mrs. Riznik

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MINUTES OF PUBLIC INFORMATIONAL MEETING

KAUNUALII HIGHWAY IMPROVEMENTS
LIHUE TO WEST OF MALUHIA ROAD

MEETING TIME: March 2, 1999; 7:00 pm to 9:00 pm

LOCATION: Wilcox Elementary School Cafetorium

LIST OF ATTENDEES: See attached sheet

1. INTRODUCTION BY MR. STEVE KYONO:

The meeting was convened at 7:00 pm by Mr. Steve Kyono, District Engineer for the State Highways Division. Mr. Kyono introduced his staff, Messrs. Glenn Yamamoto and Steve Morikawa, and Mr. Reginald Suzuki, project manager for Park Engineering, the prime design consultant. Mr. Kyono noted that the State is not required by rule regulation or law to hold this meeting. However, the State has chosen to do so as a matter of its commitment to inform the public. He also explained the purposes for the meeting as being (1) to share information on the work in progress in the planning process, (2) to answer questions about the project and (3) to provide an opportunity for the public to offer information, the State may not be aware of. Mr. Kyono then gave a brief overview of the project and the format for the meeting.

2. PRESENTATION BY MR. REGINALD SUZUKA:

Mr. Suzuka began his presentation with a brief description of the project. He then identified (with the aid of drawings) the existing improvements and environmental resources that could be impacted by the project. This was followed by a description and explanation of the alignment proposed for the project. The following is a summary of Mr. Suzuka's presentation:

Project Description-

- The project is approximately 7.5 miles long.
- It begins at the intersection of Rice Street and Rubio Highway and extends westward to about a half mile beyond Maluhia Road.
- The existing two lane highway will be widened to a four lane divided highway.
- The typical highway section will have two westbound lanes and two eastbound, 10 foot shoulders and bike lanes. Sidewalks will be provided within the Urban Areas.
- Sight-distances will be increased to current federal design standards.

Existing Improvements and Resources- They include the following:

- Lihue Plantation Cane Conveyor system and mill storage building.
- Existing Koomana Road Bridge and Lihue Mill Bridge.
- Lihue Public Cemetery.
- Department of Water Supply Baseyard Facilities
- Puhia Businesses
- Kauai Community College
- Kauai Nursery
- Brewer Environmental, Inc.
- Wetlands (Total of three)
- Haiku Airstrip

- Halenahahu Reservoir
- Swamp Mahogany Trees along Maluhia Road and Kaunualii Highway.

Proposed Alignment- The proposed alignment is intended to minimize potential impacts to the existing improvements and resources. The alignment and the impacts are as follows:

- FROM THE RICE STREET/KURIO AVENUE INTERSECTION TO NAWILIWILI ROAD, WIDEN THE HIGHWAY ON THE MAUKA SIDE. THE POSITIVE IMPACTS ARE:

- (1) Major reconstruction of the cane conveyor system and the storage building and disruption to mill operations will be avoided.
- (2) Encroachment into the Lihue Public Cemetery will be minimized.
- (3) Impacts to the Department of Water Supply baseyard facilities will be avoided.

A NEGATIVE IMPACT IS THAT THE HOOMANA ROAD BRIDGE WILL BE CLOSED TO VEHICULAR TRAFFIC.

- BETWEEN NAWILIWILI ROAD & NANI STREET, WIDEN THE HIGHWAY ON THE MAUKA SIDE. THE REASONS ARE:

- (1) The State has already acquired the right-of-way along the Kukui Grove Shopping Center.
- (2) The Rubou Street Extension has been designed for widening on the makai side.

- BETWEEN NANI STREET & THE VICINITY OF KIPU ROAD, WIDEN THE HIGHWAY ON THE MAUKA SIDE. THE POSITIVE IMPACTS ARE:

- (1) Impacts to the existing businesses in Puhia will be minimized.
- (2) Impacts to Kauai Nursery and Brewer Environmental will be minimized.

THE NEGATIVE IMPACTS ARE:

- (1) The alignment will encroach into Kauai Community College.
- (3) The alignment will encroach into a Wetland area.

- FROM KIPU ROAD TO THE VICINITY OF MALUHIA ROAD, WIDEN THE HIGHWAY ON THE MAUKA SIDE. THE POSITIVE IMPACTS ARE:

- (1) The deep ravine on the mauka side of the Kipu Road intersection will be avoided.
- (2) The relative location/position of the highway to the Halenahahu Reservoir and the Haiku Airstrip will be maintained.
- (3) The design and construction of the Kuleia Bridge and Quarry Road will be more economical.
- (4) The impact to the Wetland will be minimized.

AT MALUHIA ROAD AND BEYOND, MORE DETAIL STUDIES WILL BE CONDUCTED TO DETERMINE WHETHER THE HIGHWAY SHOULD BE WIDENED ON THE MAUKA SIDE OR THE MAKAU SIDE. FOR THIS STUDY, THE CONSULTANTS WILL COORDINATE AND CONSULT WITH THE CORPS OF ENGINEERS, THE OUTDOOR CIRCLE AND THE KAUALI COUNTY DEPARTMENT OF PUBLIC WORKS.

3. QUESTIONS (Q) AND ANSWERS (A):
COMMENT BY MR. KYONO ABOUT THE PROJECT-

Timing is important in all of this. A rough estimate of the project is 150

million dollar. It's a large sum of money and may mean constructing the project in phases, perhaps three phases. We will be competing with the other Counties for funds. Funding is set by a prioritization process. We're hoping the priority for this project will be very high. Where we stand state-wide is not known yet. You, as members of the public, can help by showing your enthusiasm for the project and by letting the decision-makers know this is a priority project that is important to you. We will also be looking for federal money to help with the funding because State resources are not sufficient.

- Q. Generally, what kind of median will we have? What is the median for?
- A. The median will be 32 feet wide. This is a typical width for other highway throughout the state. The median will be landscaped and will be wide enough to accommodate acceleration, deceleration and turning lanes.
- Q. Where is the traffic coming from?
- A. In the morning, the traffic comes from as far as Kekaha and Waimea. By and large, the largest contributor is Kalahao with builds up along the way. There's a large increase and back up at the tree tunnel. Traffic is generally solid right through. At Puhi, there's another tremendous influx of traffic.
- In the afternoon, the traffic reverses.
- Q. My real question is what happens with the traffic west of the project?
- A. That is a matter addressed in the Kauai Long-Range Land Transportation Plan. A lot (of what will happen) depends on such things as the Kauai General Plan amendment that is taking place right now.
- Q. What is the schedule for the project?
- A. We hope to have the design completed in 3 years or so. Depending on funding, construction could take 12 years.
- Q. Wouldn't it be more feasible to "put in" a new road rather than widen Kamuali'i Highway? An alternate route?
- A. That would fall into a whole new category. The Kauai Long-Range Land Transportation Plan provides such alternatives.
- Q. Did you say that another bridge will be constructed at Huleia Stream?
- A. That is correct. The present bridge "as is" is not physically wide enough to accommodate four traffic lanes.
- Q. Building a road next to the existing (road) will create traffic congestion. Isn't it better to construct a new highway along another route?
- A. Again we come back to the main objective of this project. A new highway is not part of the scope of this project. A brand new highway involves a new realm of environmental requirements and regulations. The scope is not to look at other routes. The Kauai Long-Range Land Transportation Plan has at least two alternate "bypass roads". We recognize there will be problems during construction and so we will provide temporary detours and traffic controls. All of these things will be taken into consideration.
- Q. Exactly where does the project begin?
- A. The project begins just before the cane conveyor bridge where Kubio Highway and Rice Street intersect (The location was shown on one of the

plans).

- Q. The existing Lihue Mill and Hoowana road Bridges are historically significant. What does this mean?
- A. This means the bridges are considered historically significant but are not on the National Historic Bridge Register. It also means we have to work with the State Historic Preservation Office to develop mitigation measures that address its concerns.
- Q. Is the median to be landscaped? If so, what kind?
- A. Yes. Probably low shrubs and other ground cover that do not require a lot of maintenance and water.
- Q. Will the project accommodate bike lanes along Kubio Highway?
- A. No. The project ends at Kubio Highway.
- Q. Even with four lanes, you still have the stop lights that will bring traffic to a halt.
- A. What we're talking about is highway capacity. Although the traffic lights impede traffic, we are increasing capacity, eg. the ability of the highway to carry traffic. (The flow of water out of two bottles with different size openings was used to explain highway capacity)
- Q. Beyond the end of the project (the Waimea end), can we get away from this urban type of highway and keep the rural highway? In other words, two separate roads with two lanes each, one going in one direction and another going the other way. So we end up with four lanes that have a rural appearance.
- A. From an engineering perspective, it can be engineered but we're talking about a very costly highway. We're talking about two separate highway that need to be interconnected so that traffic can go from one to the other. Beside the cost factor, there's also the "Not in My Back Yard" reaction by landowners. "Why put the road in my land?" "Why take my property?"
- Q. A 10 foot wide bicycle path is not a bicycle path. It's a death trap.
- A. This is not a bicycle path, it's a bicycle lane. A bicycle path is a separate facility. It's a totally separate facility (from a highway).
- Q. Where do the street lights stop?
- A. We're not going to light-up the whole highway. General speaking, you can expect the major intersections to be lighted.
- Q. This is not a planning project. It is a planning project by default. It is not really planning. This is not asking for community input.
- A. The community input you're referring to is part of the planning process for the Kauai Long-Range Land Transportation Plan. This plan is updated every five years.

Prepared by Reigmald Suruka

Reigmald Suruka

SIGN-IN SHEET

PUBLIC INFORMATION MEETING NO. 1
 MARCH 2, 1999
 WILCOX ELEMENTARY SCHOOL

KAUMUALII HIGHWAY IMPROVEMENTS
 LIHUE TO WEST OF MALUHIA ROAD
 PROJECT NO. 50DE-02-95



Memorandum

DRAFT

To: File
 From: Jason Yazawa
 Date: January 24, 2000
 Subject: Improvements to Kaumualii Highway
 Lihue to West of Maluhia Road
 County of Kauai, Hawaii
 Public Information Meeting Held on January 13, 2000
 Comments, Questions and Answers

Staff in Attendance: Steve Kyono, SDOT
 Glenn Yamamoto, SDOT
 Steve Morikawa, SDOT
 Pat Phung, FHWA
 Glenn Ikeda, ParEn
 David Atkin, PB
 Jason Yazawa, PB

Enclosure: Sign-In Sheets

Questions, Answers and Comments Regarding Options to Maintain Access to German Hill

Would the changes being made at the Kaumualii Highway / Rice Street Intersection affect the existing or future intersection of Hoomana Road and Kaahumanu Highway? The Kaumualii Highway / Rice Street intersection changes will not affect the existing, or possible future, intersection of Hoomana Road and Kaumualii Highway.

Why not connect the existing Hoomana Road directly to the widened portion of Kaumualii Highway?

The new intersection would be too close to the new Lihue Mill Bridge, which would restrict left-turn movements from Kaumualii Highway to Hoomana Road.

Alignments C, D and E would interfere with the movements of 200 to 250 cane haul trucks per day.

How many houses would be displaced?

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Print Name	Organization/Address	(Mailing) Address	Phone No.
Mrs. [unclear]	448 Kaahala	Kaahala	222-4625
Robert [unclear]	P.O. Box 87	Kaahala, Kauai	322-8741
Les Yasutake	6130 Ahole Dr.	Kapa'a	322-3817
Will Galiza	2545 Aupuni St.	Lihue	245-9071
John Tanner	4228 Hano St.	Lihue	245-7579
Chuen Miao	P.O. Box 656	Kaahala	322-1585
Carol Yasutake	6130 Ahole Dr.	Kapa'a	822-3817
Kevin McMath	P.O. Box 237	Waimea, HI 96796	322-1477
Carleen [unclear]	P.O. Box 245	Elele, 96705	
Jimmy Takaki			245-9522
Tom [unclear]	2149-B	Waimea, Kaahala, 96741	322-3576
Tom [unclear]	2149-B	Waimea, Kaahala, 96741	242-7567
Ann [unclear]			"
Leah Oliver	P.O. Box 87	Kaahala, 96741	742-9082
Sarah Oliver			742-1434
Lance [unclear]			
Steve [unclear]			204-3118

DRAFT

No alternative would displace houses. However, Alignment B would require property acquisition in German Hill.

Alignments C, D and E would cause congestion at the end of Hoomana Road, and would therefore, adversely affect about a half dozen houses in this section.

How will the decision be made in selecting the preferred Hoomana Road re-alignment?

The State Department of Transportation (SDOT) and the Federal Highway Administration (FHWA) will make the decision based on engineering considerations and public comments.

Pedestrian and bike access between German Hill and Lihue must remain open. Does Alignment B include such access?

Yes, under Alignment B, pedestrian and bike access between German Hill and Kaunuaui Highway would remain available by keeping the existing Hoomana Road and Bridge open, which would be converted to a pedestrian/bike path.

Alignments C, D or E would shift traffic to the end of Hoomana Road where there is a hairpin turn.

No alternative should be selected that would adversely affect AMFAC, a company trying to maintain its sugarcane cultivation business.

The resident who owns a home located at the beginning of Hoomana Road was concerned that Alignment B would displace his garage and eliminate a large part of his yard. He states that his house is historic.

If Alignment B-3 (tunnel) is selected, lighting in the tunnel would be needed for safety reasons.

Why not provide access to Hoomana Road directly from Lihue Mill Bridge?

This alternative could be possible, but it appears not to be feasible because of the proposed design of the new Lihue Mill Bridge.

Since approximately 40 trucks a day pass under Hoomana Road Bridge, would Alignments A or B affect these movements?

Alignments A or B would not prevent these truck movements. However, an intersection with the re-aligned Hoomana Road would be created.

When would construction begin?

The year 2003, at the earliest.

A one-lane fly-over ramp from Hoomana Road to Lihue was suggested.

DRAFT

The intersection of Hoomana Road and Kaunuaui Highway (Alignments A or B) must be full access (i.e., all possible turning movements allowed).

The proposed Kaunuaui Highway median should be used more creatively?

At least part of the yard of the property affected by Alignment B could be regained if option 3 (tunnel) was selected.

Would acceleration/deceleration lanes be included with the new Hoomana Road / Kaunuaui Highway intersection?

Yes, acceleration/deceleration lanes would be part of the proposed plan.

It is possible to lessen the angle of the present Hoomana Road with Kaunuaui Highway?

It appears not to be possible because of the proximity of Hoomana Road with Lihue Mill Bridge.

The proposed Hoomana Road (Alignments A or B) intersection with the existing truck route needs to give priority to truck traffic.

Is the work to re-align Hoomana Road eligible for federal funding under this project?

Yes, because it is mitigation to an impact.

The SDOT facilitator was able to establish consensus among participants that Alignments C, D and E should be dropped from consideration.

Questions, Answers and Comments Regarding Kaunuaui Highway Project

Cars are traveling too fast on Kaunuaui Highway. Can speed bumps be installed near Lihue?

Speed bumps cannot be installed on a State highway. But, SDOT will explore the possibility of installing flashing lights to slow traffic.

Lihue Mill Bridge needs re-surfacing.

Work to resurface Lihue Mill Bridge is scheduled for March.

Would the project be phased, or would it be constructed all at once?

Design and construction of the project would be phased, even though the environmental process covers the entire project length. The first phase of the project would be from Lihue to Puhi, the section in which traffic congestion is most severe. The design of this first phase is expected take approximately two years.

The project should be consistent with the General Plan update, which states that four-lane highways should not be constructed beyond Matuhia Road.

**IMPROVEMENTS TO KAUMUALII HIGHWAY
Lihue to West of Maluhia Road**

**Public Information Meeting
Wilcox Elementary School
January 13, 2000**

PLEASE PRINT

NAME	ORGANIZATION	ADDRESS
ROBERT J. MARTIN	LIHUE LUTHERAN CHURCH	3411 WILCOX RD LIHUE HI 96766
NADINE ROBINSON		4370 HOOMANA LIHUE HI 96766
ROBIN ROBINSON		4370 HOOMANA LIHUE HI 96766
AMALFRANO	Pelama Keiki Pk School	4602 HOOMANA RD LIHUE
ADELW MANEM		4644 HOOMANA RD LIHUE HI 96766
MARWELL MANENE FOR SEETHA KANDAMINI S. Y. GARDNER		4644 HOOMANA RD LIHUE HI 96766
Aileen Shidabatz		29 340 710 KALAKEA HI 96741
John Romanowski	JW GLOVE LTD	4636 HOOMANA RD LIHUE 96766
Vianne Ihu Tabata	Home owner	HALF WAY BRIDGE 245-3609 4568 HOOMANA RD. LIHUE HI 96766
MONTE HULL	Sierra Club, League of Women Voters	2149 B Pua Rd, Kalakea HI 96741
KEVIN KROEDER	LIHUE LUTHERAN CHURCH	4602 HOOMANA LIHUE HI 96766
Bill Braden		4674 " " " "
Jerry Nishok	KNL / Lihue Lutheran Church	3-1550 KAUMUALII HWY. LIHUE HI 96766
Will Galiz	The Aholu Church	2545 UPAPANE ST LIHUE HI
DOUG ALBRECHT	Lihue Lutheran Church	Pelama Keiki Pk School 3-2243 Kamahi Hwy. Lihue 96766
FENTON LEIS	HAWAII CLASSIC DESIGNS	4491 RICE ST LIHUE

Improvements to Kaumualii Highway
Public Meeting Held on January 13, 2000
Page 4

DRAFT

The project would be planned to be consistent with the General Plan update. However, State highway projects are planned through the Kauai Long-Range Land Transportation Plan.

What is the deadline for comments?

There is no deadline for comments at this stage of the project. However, please submit any comments as soon as possible so that they can be considered while we prepare the Draft environmental assessment (EA).

How much of the project is federally funded?

Eligible project costs would receive up to 80 percent federal funding.

The project's EA should consider the social impacts of the project, particularly the project's potential effect on land development and population growth. If the project causes land development, it would not relieve congestion.

The project should consider cheaper alternatives.

How can one get a copy of the project's Draft EA?

Requests for copies of the Draft EA should be directed to SCOT.

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Engineering Excellence

**IMPROVEMENTS TO KAUMUALII HIGHWAY
Lihue to West of Maluhia Road**

**Public Information Meeting
Wilcox Elementary School
January 13, 2000**

PLEASE PRINT

NAME	ORGANIZATION	ADDRESS
Winston Lee	Reserve Classic Drive	4441 Rice St, Lihue HI 96766
JOHN HARLACHER	RESIDENT	4655 HOOMANA RD LIHUE
DARRELL K. MAEDA	Hawaii	Puhi
Gene Lecho	Public Engineer	95-108 LANA PL.
Glenn Yamamoto	St. Mary	3040 Ewa St. Rm 205
MIKE FURUKAWA	Gracie Farm Co.	P.O. Box 662069 Lihue 96766
Sei Rusa	State Highway Retired	4611 Ekele St. Lihue, Kauai 96766
Daelene Ramos	Resident	4716 Hoamana Rd Lihue 96766
CHERYL LOVELL-DEAN	ENR/PA/BIOL/PLANT	P.O. BOX 200, LIHUE HI 96766
John M. Eversy	Resident	4352 SALTILLO ST. Woodland Hills CA 91364

**IMPROVEMENTS TO KAUMUALII HIGHWAY
Lihue to West of Maluhia Road**

**Public Information Meeting
Wilcox Elementary School
January 13, 2000**

PLEASE PRINT

NAME	ORGANIZATION	ADDRESS
Bill & Aileen Faria	AMFAC	4666 Hoomanua Rd, Lihue 96766
PAUL (MAY) MAEDA		Box 1041 LAWA 96765
Rachel Taketa	Contractors Assn	4756 KUA RD Kalaheo 96741
Catherine Martin	Lihue Luth. Church	3411 WILCOX L-137 Lihue 96766
Bernie Rainey	Homeowner	4767 Hoomanua Rd. Lihue 96766
Chuck Trumbull	Home	4152 Palanaka St. Lihue
MARINO & MERCEDES MAURA	AMFAC	4722 Hoomanua Rd. Lihue
Ted & Loli Hagen	Lihue Lutheran Church	3429 WILCOX ST Lihue 96766
A. SHIMAZAKI	AMFAC	4634 Hoomanua Rd.
Don Wilson	Bella Graham ...	4334 Rice St # 202 Lihue
KEVIN V. PILLI	Homeowner	4726 HOOMANUA RD Lihue 96766
MARINO MAEDA	owner	4722 Ho. Rd.
JOHN LEE SAKI	Homeowner	4766 Hoomanua Rd Lihue HI 96766
WILLIAM V. BROWN	Contractor	4216 IONA RD
ANNETTE CASSIDY		2829 MILOKAE LOOP, KOLOA 96756
Melma Mate		4706 Hoomanua Rd Lihue

**IMPROVEMENTS TO KAUMUALII HIGHWAY
Lihue to West of Maluhia Road**

Public Hearing
Wilcox Elementary School
May 25, 2000

PLEASE PRINT

NAME	ORGANIZATION	ADDRESS
ANNIE McEVEETY		4533 HOOMANA ROAD LIHUE 96766
Owen Moe		P.O. Box 656 Kekaha HI 96752
ANN LEIGHTON		4555 HULL RD Koloa HI 96744
GREGG CAMPBELL	LIHUE BUSINESS COUNCIL RIZ & LEAHUE LUTHERAN	2970 MAHELE RD LIHUE HI 96766
Aileen Farias		4696 HOOMANA RD LIHUE HI 96766
William A. Farias		4696 HOOMANA RD LIHUE HI 96766
TRU KIRCHNER	LIHUE LUTHERAN CHURCH	4602 HOOMANA RD LIHUE HI 96766
DAVID NOYEN	SPRINGER	PO BOX 1021 LIHUE HI 96766
DAVID CLAWSHAW		
Joseph Reza	Retired State D.O.T.	4611 EKOLO ST LIHUE, KAUAI 96766
RICK HAYLSON	KOLOA COMMUNITY ASSOC	POB 1313, Koloa HI 96756
POOY LEE N. JOHNSON	CLUB	2100 W. ST. LIHUE, HI 96766
MARGARET JOHNSON		KOLOA HI 96744
BOY W. JOHNSON		3060 E. W. ST. LIHUE
PAUL CHAFFIN	GARDEN ISLAND	P.O. Box 271, LIHUE, 96766
MONTE HULL	Sierra Club	2149-B Pua Rd, Koloa, HI 96741
LAURA L. CUSHNIE	Goodfellow Assoc., Inc.	P.O. Box 1090, Koloa HI 96756

**IMPROVEMENTS TO KAUMUALII HIGHWAY
Lihue to West of Maluhia Road**

Public Hearing
Wilcox Elementary School
May 25, 2000

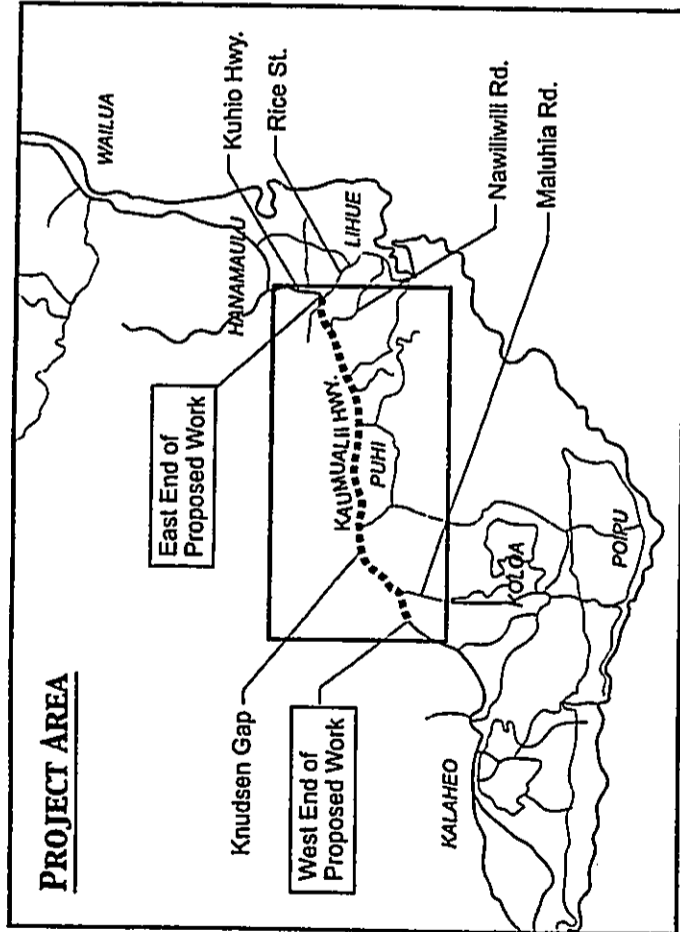
PLEASE PRINT

NAME	ORGANIZATION	ADDRESS
Eric & Tom Bobbey	resident	P.O. Box 688 Hanalei 96746
Tom Shigemoto	resident	4090 Peale St., Lihue, HI 96766
Eric & Lori Lou	Dad	P.O. Box 1704, Lihue
CHARLES T. NATAWONG		2889 Kaulahe'e St Lihue 96766
CHARLIE KING	Kauai Chamber	4950 KUMU ROAD ST. Lihue 96746
Lyle Hackett	"	3-1550 Kaulahe'e Hwy Lihue 96766
CAROL KAWAIAE	"	P.O. Box 1883 Kapaa 96746
FRED REYER	CITIZEN	5207 HAWAIIAN RD Kapaa 96746
JERRY NISSEK	Kauai Nursery	3-1550 Kaulahe'e Hwy Lihue HI 96766
Mae NICHOLS	Goodfellow	PO Box 26 Kapa'a HI 96746
LINDA NICHOLS	Goodfellow	PO Box " " " "

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IMPROVEMENTS TO KAUMUALII HIGHWAY LIHUE TO WEST OF MALUHIA ROAD

PUBLIC HEARING INFORMATION PACKET
MAY 25, 2000



WHAT IS THE PROJECT? WHERE WILL IT BE LOCATED?

The Hawaii Department of Transportation (HDOT) and the Federal Highway Administration (FHWA) propose to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway from Kuhio Highway in Lihue to Maluhia Road (see map above). The project would extend west of Maluhia Road to transition from the existing two-lane configuration to the future four-lane configuration at the Maluhia Road intersection.

WHAT IS THE STATUS OF THE PROJECT?

A Draft Environmental Assessment (EA) has been prepared and was announced in the May 8, 2000 edition of the State Environmental Notice. The purpose of the Draft EA is to disclose the environmental and social impacts that could result from the project, and provide the public with an opportunity to comment on the project. HDOT anticipates that this project will not cause a significant impact on the environment, but will re-evaluate this assessment following receipt of comments on the Draft EA.

WHY IS THIS PROJECT NEEDED?

Existing Capacity Deficiencies
Currently, travelers on Kaumualii Highway experience severe traffic congestion during peak periods. The town-bound section of Kaumualii Highway from Puhi to Lihue is very congested in the morning. Afternoon peak hour congestion is in the out-bound direction, and is particularly severe between the traffic signals at Nawiliwili Road and Puhi.

Future Transportation Demand
Expected population and economic growth in the southern part of Kauai is expected to increase travel demand between the southwest and southeast regions of the island. Since Kaumualii Highway is the only regional highway in south Kauai, the capacity of this highway, which is insufficient to accommodate current demand, will be even more overtaxed by future traffic volumes. Unless steps are taken to increase the capacity of this roadway, the level of congestion on Kaumualii Highway will continue to worsen.

Highway Safety Improvements

Kaumualii Highway is a safe roadway, but there are a few sections where sight distances are less than current highway safety standards. In addition, as traffic volumes increase, the possibility of head-on collisions also increases on a two-lane undivided highway. The project will improve motorist safety by increasing sight distances to current highway standards, and converting the highway to a divided roadway, which will substantially decrease the chance of head-on collisions.

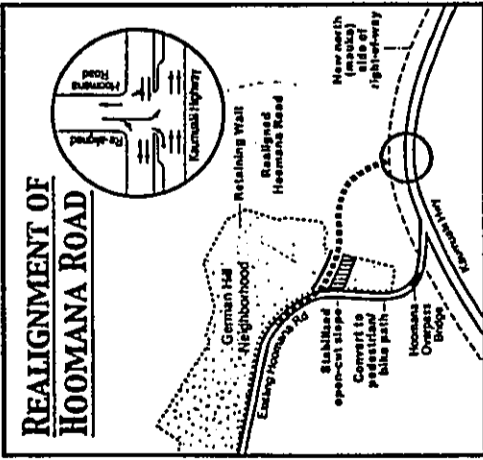
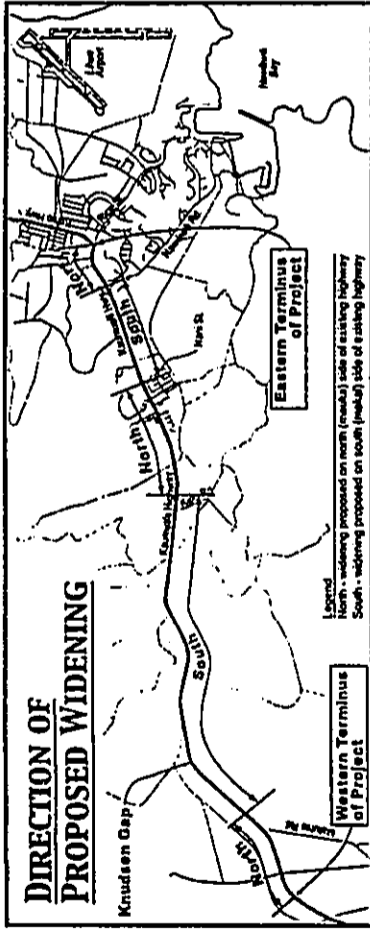
System Connectivity Improvements

A benefit of converting Kaumualii Highway to a four-lane divided roadway would be provided when major incidents (e.g., traffic accidents) occur that require lane closures. The use of cane haul roads as detours is becoming less reliable in areas where cane production has ceased, reducing the maintenance of these roads. The likelihood of a traffic incident blocking all four lanes of a divided highway will be highly unlikely. Therefore, the project will allow the flexibility to detour traffic flow around any major incident by using the unaffected roadbed of the divided highway.

WHAT IS BEING PROPOSED?

Within the project limits (from Kuhio Highway in Lihue to just west of Maluhia Road), Kaumualii Highway will be converted from a two-lane undivided roadway to a four-lane divided roadway. To avoid certain resources, the widening will occur alternately on the north (mauka) or south (makai) sides of the existing road (see map to the right). Notable changes to Kaumualii Highway will include left-turn lanes within the widened median, and new bridges over Nawiliwili and Huleia Streams. The existing bridges over these streams will remain but be modified for one-way traffic.

In Lihue, the project will widen Kaumualii Highway on the north (mauka) side to avoid Lihue Mill, Lihue Public Cemetery and a County baseyard facility. This north (mauka) side widening will force the relocation of the existing Hoomana Road Inter-section, which is the only access to the German Hill neighborhood. The new intersection of Hoomana Road with Kaumualii Highway will be approximately 300 feet east of the existing intersection (see map to the right). The re-aligned Hoomana Road will connect with the existing road shortly upon entering the neighborhood. The re-alignment will require the relocation of one residence located at the southern edge of the neighborhood.



WHAT ARE THE ADVERSE IMPACTS OF THE PROJECT? HOW WILL THESE IMPACTS BE MITIGATED?

The project's Draft EA contains detailed information on environmental impacts. It also includes measures that will help avoid, minimize or mitigate these impacts. In general, the project will not result in severe impacts because the widening will occur beside the existing Kaunuaʻali Highway. In addition, the widening will occur alternately on the north (mauka) and south (makai) sides of the existing highway to avoid certain important resources.

Agriculture

The project will convert inactive agricultural fields west of Puhi Inio transportation use, permanently removing such lands from future agricultural use.

Relocation

A residence on the southern edge of German Hill will be relocated due to the re-alignment of Hoomana Road. Fair market compensation will be provided to the owner, and relocation assistance will be provided. Since the residence is part of an historic neighborhood, relocating the affected structure elsewhere in the neighborhood will be explored if the owner is agreeable.

Wetlands

Approximately a quarter of an acre of wetlands located just west of Puhi beside Kaunuaʻali Highway will be filled. These wetlands will be replaced by creating new wetlands upstream. In addition, new drainage structures at this location will be designed to maintain the remaining and new wetlands.

Historic Resources

Lihue Mill Bridge is eligible for listing on the National Register of Historic Places. This bridge will be widened and its steel railings will be replaced. Although these railings are rusting and do not meet current safety standards, they are an important characteristic of the bridge that makes it historic. The replacement railings will be visually pleasing and meet safety standards. Nevertheless, the historic integrity of Lihue Mill Bridge will be adversely affected. Therefore, photo documentation of the bridge will be conducted.

WHAT WILL HAPPEN AFTER THE PUBLIC HEARING?

After reviewing comments on the project, if the SDOT and FHWA's bill believe that the project will not have a significant impact, they will prepare a Final EA and declare a Finding of No Significant Impact (FONSI). If this occurs, the FONSI will be announced in the State Environmental Notice. Next, design and right-of-way acquisition can begin, which is expected to last approximately two years.

HOW CAN I COMMENT?

You can provide comments at this public hearing. You can either write your own comments (comment sheets are available from the sign-in attendant), or you can provide oral comments to a court reporter stationed at this hearing who will transcribe your comments. If you choose to write your own comments, you can leave them here or mail them to:

Mr. Steven M. Kyono, District Engineer
Highways Division, Kauai District
State of Hawaii Department of Transportation
3060 Ewa Street, Room 205
Lihue, Hawaii 96766

Written comments will be accepted up to and on June 7, 2000.

WHERE CAN I GET MORE INFORMATION ABOUT THIS PROJECT? WHO CAN I CONTACT IF I HAVE QUESTIONS?

The Draft EA for this project, which is available at Lihue Public Library, contains more information about the project. If you have any questions, you can contact the State Department of Transportation Highways Division Kauai District office at (808) 274-3111.

WHAT ARE THE BENEFITS OF THE PROJECT?

Better Traffic Operations

With two additional lanes and a divided roadway configuration, Kaunuaʻali Highway would operate substantially better than if nothing is done. Based on projected 2020 traffic volumes, the highway will operate with relatively free-flow conditions during both the morning and afternoon periods, as opposed to highly congested conditions if no improvements were made.

Improved Highway Safety

In addition to improved traffic operations, converting Kaunuaʻali Highway to a divided four-lane configuration with a 28 foot wide median will improve highway safety by reducing the chance of head-on collisions, one of the most deadly types of incidences. The project will also correct sight distance deficiencies.

Increased Accessibility for Cyclists and Pedestrians

Convenience for and safety of cyclists and pedestrians using the highway will also substantially improve. The current four foot shoulder widths will be widened to ten feet on both sides of the highway, and bike lanes can be provided within these shoulders if needed. Where the highway traverses urban areas, sidewalks in compliance with the Americans with Disabilities Act will be provided.

WHAT IS THE COST OF THE PROJECT?

The construction and right-of-way cost in year 2000 dollars will be between \$75 million and \$110 million.

WHEN WILL CONSTRUCTION START? HOW LONG WILL IT LAST?

Due to funding constraints, the project will be constructed in phases. The first phase will extend from Kūhiō Highway in Lihue to Kōpu Road, a distance of approximately three miles. If approved, construction of this first phase could begin as early as 2003, and may last about two years. The availability of funding will determine the limits and schedule of subsequent phases.

IMPROVEMENTS TO KAUNUALII HIGHWAY
LIHUE TO WEST OF MALUHIA ROAD
COUNTY OF KAUAI, HAWAII

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PUBLIC HEARING AND COMMENTS

Held at the Wilcox Elementary School, Lihue, Hawaii,
commencing at 6:00 p.m., on Thursday, the 25th of May,
2000, pursuant to public notice.

REPORTED BY: KATHY PEARSON, RPR-CSR No. 313
Notary Public, State of Hawaii

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RECORD OF PUBLIC COMMENTS

1. My name is Gregg Gardiner, and I'm here
as chairman of the Kauai Business Council.

The Kauai Business Council represents over
five hundred businesses on the island of Kauai and over
eight thousand employees. Our members include the
Kauai Visitors Bureau, the Kapaa Business Association,
the Lihue Business Association, the West Side Community
Development Association, and the North Shore Business
Council.

We wholeheartedly approve of the plans as
we've seen them here tonight, and support option B for
Hoomana Road. The Kauai Business Council has studied
the environmental impact, the draft environmental
impact statement, and compliments DOT for doing a very
thorough job. And we are looking forward to seeing
this project receiving a finding of no significant
impact, proceeding to planning and development at the
earliest possible stage.

2. Paul Kirchner, 4602 Hoomana in Lihue. I
guess I'm representing Lihue Lutheran Church and Palama
Keiki preschool.

Basically we're very appreciative of the
work. Improving of the intersection there is going to
help our program, our ministry. We're looking to

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1 expand, and it will help our traffic flow. So we're
2 just very favorably impressed, and look forward to
3 seeing it going to fruition as quickly as we can.

4 3. My name is William Farias, 4696 Hoomana
5 Road.

6 We've been residents on Hoomana Road for the
7 past 26 years, and we approve the realignment and the
8 entrance to Hoomana Road. I think it will make it
9 safer for the preschool children coming in and out of
10 the road to the main highway. And the walkway area
11 that they're designing, the walk path, I think that's a
12 nice addition, and also saving the historical bridge.

13 4. Doug Yonegi. Should have been done ten
14 years ago.

15 5. Laura Cushnie, P. O. Box 1882, Koloa,
16 Hawaii.

17 It seems that there's excellent planning, a
18 lot of foresight, and I support the project. As far as
19 the planning, the pedestrian pass is an asset. The
20 German Hill seems to be an asset. And preservation of
21 the bridge, that's a lot of foresight. Planning at
22 this stage is good foresight.

23 6. Ralph Cushnie. Looks like a well thought
24 out design, and I think it should go. That's pretty
25 much it.

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1 7. Fred Reyes, 5207 Hauaala Road, that's
2 Kapaa, 96746.

3 I'm in favor of the project. And I also
4 would like to recommend DOT putting a new over-crossing
5 at Maluhia Road. An over-crossing would be for
6 westbound Kaunualii to southbound Maluhia traffic.
7 Because it's going to be very difficult for people to
8 make a left-hand turn during the peak morning rush hour
9 from seven a.m. to eight a.m., basically. It's going
10 to be very hard for them to make that left-hand turn
11 into the tree tunnel when you got all this Lihue bound
12 traffic. I prefer that --

13 I understand they might be putting a traffic
14 signal in. But to me, the people have to get to work.
15 They don't want to be slowed down by traffic lights,
16 you know. To me, it's in the middle of nowhere, you
17 know, a rural area. So I would rather not have a
18 traffic signal. Just go straight and prevent accidents
19 by having a separation.

20 8. Charlie King.

21 Looks wonderful. It's a plan that's long
22 overdue, and I hope they keep moving with it as soon as
23 they can. I think the process was very good, much
24 better than the normal public hearing.

25 9. David Crawshaw, Box 1081, Lawai, 96765.

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5
1 I'm against expanding the highway because I
2 think it makes the island less rural. And there will
3 still be a bottleneck traffic jam in Puhi. And I favor
4 going around Lihue with a secondary road built from the
5 tunnel of trees. And an alternative road would be good
6 in case of disaster.

7 I lease a farm makai at Halfway Bridge, and
8 I'm concerned flow not be a stream through the
9 property. And I would like to be contacted when
10 designing happens. And I also want to have access to
11 property. I presently have a right of way under
12 Halfway Bridge, and I don't want that to be blocked,
13 especially during construction. And I prefer a traffic
14 light at Halfway Bridge over creating accesses under
15 the bridge.

16 I think every big tree removed should be
17 replaced by a big tree, or landscaping that is an
18 improvement over the existing landscaping. Make it a
19 garden island, not a highway island. Spend millions on
20 landscaping.

21 10. Marge Freeman, 6448 Kaahele, Kapaa.

22 There should be no four lane roads on this
23 island, now or ever. If you're going to cut roads, put
24 wires underground. Next time you're going to put them
25 underground anyway, in ten or twenty years we're going

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6

1 to finally put them underground, and it will be just a
2 waste of money to have cut it once and cut it again to
3 put it underground. Put them underground now.

4 Put trees on all highways. Not just grass
5 because it's so easy to cut, which is what they told us
6 a year ago they were planning to do. A light rail
7 system and forget the four lanes. Two alternative
8 lanes somewhere else, no four lanes.

9 He said that in 1954 there was a whole island
10 plan, because he used to work for the highway
11 department, and it had no four lane roads. It had
12 alternative roads. What happened to the imagination
13 and the alternative routes? Where is everybody? This
14 is a rote, kind of. It's an ugly rote project. No
15 brain has gone into this. They ought to be thinking
16 with a little bit of brain. We don't want this stuff.

17 You know, you guys asked us to write our
18 congressman to get money for this project. I told
19 everybody that I knew not to write, because we don't
20 want the money, because then you have to do your kind
21 of dumb design. Until you come up with these designs,
22 we ought to say no highways. So someday I want
23 somebody to think.

24 No bike paths like the ones picked on the
25 shoulders. They're too dangerous. You're going to

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1 just kill people right and left. They're not bike
2 paths, they're death traps. And you shouldn't be
3 encouraging people to bike beside roads like that when
4 they're so dangerous.

5 Nothing's right with this project, not one
6 thing.

7 11. Monte Hull, 2149 B Puu Road, Kalaheo,
8 96741.

9 There shouldn't be a four lane highway put
10 in. That they should consider alternatives, like a
11 Lihue bypass. The main problem with congestion now is
12 due to the stoplights in the Puhi to Nawiliwili Road
13 section, and a bypass would allow cars to circumvent
14 those stoplights. Widening the highway on the west
15 side of Puhi is basically just creating a large parking
16 lot, because there's not congestion there, it's due to
17 the stoplights.

18 They say that they are only considering a
19 road widened for bureaucratic reasons. In other words,
20 that's their option. That's putting bureaucratic
21 limitations before community well-being and benefit.
22 The decision should be based on the community's actual
23 long-term needs rather than some bureaucratic rule or
24 procedure.

25 Some more specific things. The Hoomana Road

1 realignment is creating a potential death trap, because
2 it's going to come in at the bottom of two hills with
3 curves, with road improved to increased speeds so that
4 cars pulling out, particularly making a left turn off
5 of Hoomana Road, will have to go across two lanes of
6 traffic and into other oncoming traffic, even though
7 there's a little entry lane. It's still extremely
8 dangerous.

9 I want to know where they got their 2020
10 projections. This seems entirely suspicious, because
11 with the general plan update that's going on in Kauai,
12 there's been a very large range of projections, and
13 it's going to depend on other forms of development. So
14 to pull out a set of projections without any visible
15 support and say this is what's going to happen is
16 potentially misleading.

17 So they need to consider a range of
18 projections, and also to show the source of the
19 projections so we can see whether they're reliable
20 projections or not.

21 Another concern is this is called a public
22 hearing, but in fact it's not a public hearing in the
23 sense that it is primarily an open house. This
24 prevents the community from coming together as a group
25 to have a dialogue as a group and as a community with

1 they show the present highway with utility poles up.
 2 They show the improvement with no utility poles up.
 3 Presumably they're off the edge of the picture, but it
 4 gives a completely distorted picture of what the scene
 5 will be.

6 The same sort of distortion happens in
 7 another way with Maluhia Road. They show the
 8 intersection at Maluhia Road as it is now at present,
 9 and they show it supposedly as it will be after the
 10 highway expansion. The primary thing that's visible
 11 are the trees at the end of the tree tunnel, and these
 12 remain the same.

13 However, all that you can see of the future
 14 road is simply the two Lihue bound lanes and only part
 15 of them. So the effect is to see something very
 16 dissimilar to what is the case. What is left out of
 17 the picture are the median strip and the other two
 18 lanes.

19 In other words, you have a massive four lane
 20 highway in front of the tree tunnel as opposed to a
 21 present two lane rural road in front of the tree
 22 tunnel. This is an extreme different character, and
 23 totally changes the atmosphere and the environment of
 24 the place.

25 Since the general plan update has said over

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1 the Department of Transportation.

2 In other words, we go through one at a time,
 3 speaking to one person at a time, who reassuringly says
 4 you can write comments and they will be heard, but
 5 that's a very different sort of community interaction
 6 than having a hearing where different members of the
 7 community testify, other members of the community hear
 8 that testimony and respond to it. A sense of consensus
 9 can often develop and a better sense of real community
 10 feeling can be conveyed.

11 This simply records individuals' comments and
 12 defuses any sort of community sentimental consensus.
 13 It's very effective if you don't want to hear
 14 something.

15 It is possible to have both an open house and
 16 a community hearing, and this was done at the PMRF
 17 testimony regarding expansions out at PMRF. They had a
 18 public hearing going on where the record was kept and
 19 people were talking and there was a very large
 20 gathering, and they also had the informational display
 21 set up for these people who wanted to get more
 22 information and talk to individual members of PMRF.
 23 That would be a much better approach.

24 There are problems with the display here.
 25 For example, with the photos around the sugarcane mill.

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1 and over again that one of the most important things of
2 Kauai is this rural character, both for the quality of
3 life of people living here and for the visitor
4 industry, to do things that denigrate and destroy the
5 real character is bad for the citizens and bad for the
6 economy.

7 To leave that four lanes out of the picture
8 and how it affects the character of the place was
9 probably unintentional, but that doesn't matter. It is
10 just as deceptive whether it's unintentional or not.

11 I would also like to comment on the present
12 road widening by Kuhio Highway where it intersects
13 Kaunualii. It is one of the ugliest additions to the
14 Lihue area in recent years. There's a guardrail, an
15 asphalt sidewalk, a cement wall, and a high silver
16 fence where there used to be trees. There seems to
17 have been no attempt to make any sort of aesthetic
18 considerations. It looks the same as the roadside in
19 Chicago or L.A., or anywhere else. It does not look in
20 any way like Kauai or Hawaii, and it is ugly.

21 As far as the format of the hearing, they
22 also had a better format at the Department of
23 Transportation, Airports Division, where they had a
24 public hearing. Well, it was officially an
25 informational meeting. I guess, but they had the public

gathered and speaking with a facilitator, and they also
had about a half dozen or more specialists on each area
that was going to be impacted.

And they also had court reporters to take
comments, so that there was a period during which there
was a public hearing where everybody was speaking, and
there was a period during which the members of the
public were able to go over to talk to individuals and
record their comments to a court reporter. That was in
the Department of Transportation.

I'd like to thank the members of the
Department of Transportation. They're very civil, very
kind, diplomatic, and they very strongly encouraged
public input. I think they're utterly naive and
hopefully not dishonest in saying that this will be
heard, but I hope that it will not just be responded,
maybe it will actually be heard and attended to. I
thank them for coming.

12. Jerry Nishek with Kauai Nursery.

My comments are, looks like it's going to be
a great project. I think it's much needed, because I
live on the west side of the island and I commute in
every day to work through there, and the traffic seems
to be getting worse every year. And I don't think it's
going to adversely impact the environment or anything

1 that I can see.

2 So I think it's going to be a big improvement
3 that will be much needed in the future on Kauai.

4 13. Tom Shigemoto, 4090 Puaole Street,
5 Lihue.

6 I'd like to say, I've lived here all of my
7 life, and what we got in the plan, I like everything
8 that's being proposed about the plan. I am for it.

9 You know how local people aren't in big
10 numbers here tonight, because it's not really their
11 style to come out to these hearings to testify. But
12 I'll bet you that there are a ton of people who live on
13 the west side, that if they knew the public hearing was
14 going to consist of testimony one on one like this,
15 they would be here and they would be all for this
16 project.

17 I work out in Poipu, so I travel that route
18 every day from Lihue to Poipu. And as far as the new
19 highway goes, it really won't impact me directly, but I
20 see these folks waiting in line every morning, and I'm
21 stuck in traffic coming in to Lihue after work. And
22 it's just an improvement that we really need.

23 14. Leland Nishek with Kauai Nursery.

24 I think it's a well thought out project. I
25 like the bridge in Lihue where it shows the power line

1 going underground or being relocated so it's not in
2 visual view. And I would like to recommend that they
3 put the power line underground at the Maluhia Road
4 intersection to Kaunualii Highway so it doesn't
5 obstruct the view of the natural beauty of the trees.

6 And I would like to see them do a landscape
7 plan along with the highway improvements. And doesn't
8 have to be continuous, but groupings of trees here and
9 there or groupings of landscaping at strategic points
10 to make the highway more interesting instead of just
11 grass and open area. It's a garden island, so we have
12 to keep it as a garden island. Add in some colorful
13 ground cover, shrubbery. Not along the highway, just
14 at strategic points and intersections just to make it
15 more interesting.

16 I like the process of this hearing of how
17 they have it set up, where we can meet with the
18 engineers who have done the design work, and very
19 informative, able to answer a lot of the questions that
20 we have. Makes us better informed. And the sooner
21 they can start, the faster they get done, the better.
22 Thank you.

23 15. Karen Taketa, 4756 Kua Road, Kalaheo.

24 I am in total support of the improvements to
25 Kaunualii Highway, and I hope it can be done rather

1 soon rather than later. I am one of hundreds, if not
2 thousands, stuck in that traffic in the morning and in
3 the afternoon.

4 I'm very concerned that once the
5 signalization in Puhi by the new school goes on in the
6 summer that we may not ever come into Lihue or leave
7 Lihue.

8 And I think the alignment is a good
9 alignment. I think the project in its totality is a
10 positive one, is a proactive one, and we commend the
11 Department of Transportation for being proactive for
12 once. I think that's about all.

13 16. Joe Rosa, retired DOT.

14 One thing first. I'm totally against the
15 proposal that the DOT has. It's something that is
16 going to take from seven to ten years to complete when
17 it can be done in less time and probably cheaper.

18 I say this because there's an existing Grove
19 Farm haul cane road that's not in use right now. And
20 it's there. All they have to do is probably blackout
21 the thing and do some other safety improvements, like
22 guardrails and some of the alignment of the curves and
23 something out there.

24 The thing, that road is in existence since
25 1949. That's when Grove Farm laid the tunnel that goes

through the mountain, to get the sugarcane from Lihue
to Koloa mill. The road base is just as good as any
highway, because there was thirty tons of cane being
hailed on those roads in those trucks. So the
compaction on the road was excellent. So I said, all
that would be needed is the blackout, the asphalt.

If I was living on the west side, I would use
that road coming in from the Knudsen Gap area, because
it would take me down on that haul cane road, take me
on the existing road all the way. I can get into Lihue
on it. And it will take me all the way to Nawiliwili
and Pikake Street that's in back of K-Mart. And that
will give me only one stop right by that intersection
whereas the other might have five signal lights.

So the thing is also, that I don't think it
will cost as much as what they intend to do, because
you'll have to provide detours for the public. And
working with the public is something, that is something
that is treacherous, because the people get so upset
and everything because, like they were telling me in
other places.

I said, by using those roads, reconstruction,
you don't deal with the public and you don't have to
spend extra money making those detours. So it's a
plus.

1 That's why I look, I would like to see them
 2 utilize those roads, because it's not being used right
 3 now. Take the tunnel that the plantation has. Because
 4 you can bring that road also from the Koloa area, from
 5 the Hyatt area, and keep the traffic from going into
 6 Koloa town and coming up Maluhia Road into the
 7 Kaunualii Highway and causing congestion. So you're
 8 splitting up the traffic. Getting less on the traffic
 9 from Koloa on Kaunualii Highway.

10 The tunnel Grove Farm has there is suitable
 11 for two lane highways. All that needs to be done is
 12 have an encasement, concrete lining, put two vents
 13 letting out the fumes of the cars, put a lighting
 14 system in it like they have up in Honolulu, those
 15 highway tunnels, and you got it. It can be utilized.
 16 The roads are wide, like I say, they're over fifty feet
 17 wide. So as far as that, just have it blacktopped and
 18 utilize it.

19 And right now Grove Farm, I think they're in
 20 negotiation stage. They need money. They're money
 21 hungry right now for the use of selling land, the roads
 22 like that. So it can be probably had at a bargain, a
 23 bargain price. Go make an offer. Only that way you'll
 24 know. You don't talk, they don't know.

25 I emphasized earlier, when you reach

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1 Nawiliwili and Pikake intersection, there's a signal
 2 light. You'll have to add another one. To further
 3 alleviate the problem at Hoomana and the mill bridge,
 4 continue the road down to Nawiliwili Road and you cross
 5 the valley just before the -- I forget the side road
 6 that they call that goes to the high school. There's
 7 an opening that goes across the valley, and it will
 8 take you to the Kapule and Rice Street intersection.
 9 And then from there on, you just tie into Kapule
 10 Highway.

11 That will alleviate the problem of traffic
 12 going into Lihue on the way to Kapaa, going Hanamaulu
 13 or Wailua, because there's another alternate route to
 14 get out of the town and alleviate the congestion in the
 15 town and that Hoomana and the bridge area.

16 Here on Kauai, I live here my 68 years, and
 17 the thing is, there's still too many one way in, one
 18 way out highways. And the last thing I know was done
 19 in 1936, because my family had to be relocated from by
 20 where the Hoomana Road intersection is close by, at
 21 that time the highway division, because they ran the
 22 highway there.

23 That's how long ago that any kind of
 24 improvements have been made as far as getting out of
 25 Lihue. It's still one way in, one way out. You got a

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1 major exit, that's it, by Kukui Grove. You can't get
2 out of the town. They should have other sources of
3 getting in and out of towns.

4 By using that Grove Farm haul cane roads,
5 they'll cut down the actual construction time, as I
6 say, like they targeted it from seven to ten years, to
7 probably three to five years. It will cut it in half.

8 So that's why I think that government should
9 realize something that's out there in existence that
10 can be used instantly to get ahold of the problems
11 efficiently. That's about it. To me, something for
12 them to think about.

13 Mr. Kazuo Hayashida, he should be aware that
14 there's only one way in and one way out. High time
15 they utilize those roadways that's not been in use by
16 the plantations or anybody else. And even if it's
17 being used by the plantation, just like the one at the
18 Kapaa alternate road that they have, I don't see why
19 they can't work together like they do on the big
20 island, and the plantations were in existence on the
21 big island. Haul cane trucks used to use the state
22 highways, and they run side by side.

23 So the same thing over here. We can use it.
24 When the time needs plantation to haul any kind of cane
25 or equipment or whatever, no problem. It was done long

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ago in the big island.

Also I think it will cut down costs on
environmental impact studies to a minimum, because on
the existing one there's about four or five places that
they have to do because of marshlands and stuff.
Existing roads are so wide that they're not going to
utilize. There might be some areas they might have to,
but I think it was last year we had problems with the
existing highway.

A lot of this stuff here, the engineers are
not aware of what's on this island because they're in
Honolulu. Even Steve here, when I was working with the
state, he wasn't even around. He was a schoolboy
working with us as a summer helper. So I think they
should look into it.

Also our legislature representatives should
look into things like this here. The tunnel, like I
said, was built for sugar. Sugar is dead. Why not the
state purchase it and utilize it. That would help
alleviate the highway congestion that we have getting
in and out of Lihue.

Good night. I'm speaking for other taxpayers
and myself. I hope they give it a thorough
consideration. I've talked to other people, and they
all same, too. Hey, that sounds good. Give it serious

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1 thought.

2 To the committee, Mr. Hayashida, his staff in
3 Honolulu, coming from one of the old DOT retirees, 36
4 years. So I guess I know, because I'm saying things
5 that is positive, and not only out of the clear blue
6 sky. I'm not an engineer, but I think I can save the
7 state a lot of dollars and cents. Mahalo.

8 (Hearing closed at 9:00 p.m.)
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C E R T I F I C A T E

STATE OF HAWAII)
COUNTY OF KAUAI)

I, Kathy Pearson, CSR, a Notary Public in and
for the State of Hawaii, do hereby certify:

That on Thursday, the 25th of May, 2000,
commencing at 6:00 p.m., that the above-mentioned
public comments were taken by me in machine shorthand
and thereafter reduced to typewriting under my
supervision; that the foregoing represents, to the best
of my ability, a true and correct transcript of the
proceedings had in the foregoing matter.

I further certify that I am not an attorney
for any of the parties hereto, nor in any way
interested in the outcome of the cause named in the
caption.

DATED: May 31, 2000

Kathy Pearson
Kathy Pearson, CSR No. 313
Notary Public, State of Hawaii

My commission expires:
July 12, 2002

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APPENDIX B

Endangered Species Act (Section 7) Coordination Letters

**National Historic Preservation Act (Section 106)
Coordination Letters**

**Section 106 Memorandum of Agreement
Regarding Lihue Mill Bridge**

Clean Water Act (Section 404) Coordination Letter

Farmland Protection Policy Act Coordination Letters

**Programmatic Section 4(f) Determination and
Approval for Use of Lihue Mill Bridge**

September 11, 1998

Mr. Thomas Telfer
Wildlife Manager
Division of Forestry & Wildlife
3060 Eiva Street, Room 306
Lihue Kauai 96766

Dear Mr. Telfer:

Re: Draft Faunal Survey Report
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

The State Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigation/studies for the design of highway improvements for Kaunualii Highway. As part of our work on this project, we will be preparing an environmental assessment. The project is approximately 7.5 miles long beginning at the Lihue Mill and extending to a point about a half mile beyond the junction of Maluhia Road (see enclosed map entitled "Improvements to Kaunualii Highway Lihue to West of Maluhia Road").

A report by our faunal consultant identifies two stream crossings and three wetland areas within the project. A copy of this report is enclosed for your review and comments.

Should you have questions or desire additional information, please feel free to contact us. Your earliest response will be appreciated.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING


Reginald Suzuka
Vice President

cc: DOT- Kauai, attn: Steve Morikawa

TC 26 Folder 595



HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE

KAUAI DISTRICT
3000 EIVA STREET, ROOM 306
LIHUE, KAUAI, HAWAII 96766-1878

September 14, 1998

IN REPLY REFER TO

Mr. Reginald Suzuka
Vice President
Park Engineering
Suite 300 Kawahao Plaza
567 South King St.
Honolulu, HI 96813-3036

Dear Mr. Suzuka:

Re: Draft Fauna Survey Report
Improvements to Kaunualii Highway
Project No. 50DE-02-95

As per your 11 September 1998 request for review and comment on the subject draft, I offer the following:

Dr. Phillip Bruner's assessment of wildlife in the Kaunualii highway corridor appears to be adequate for what is found in the area. The vegetation in the project area is highly altered from native conditions. It is inhabited primarily with non-native plants and animals. No significant habitat exists that is likely to be adversely affected by the highway improvements proposed.

One area of concern that should be considered however, is that of native seabirds that traverse the area during the autumn months (usually October and November) each year. The Newell's Shearwater, *Puffinus newelli*, is a threatened species that nests in the interior mountains not far from the proposed highway project. Young fledgling birds of this species fly out to sea only after dark, and are attracted to bright lights and headlights of cars. They become momentarily blinded by the lights and are unable to see utility wires and fly into them, or sometimes become confused and just land exhausted on the highway or other brightly lit areas. In some years as many as 2,000 shearwaters have been victims of this problem on Kauai. Fortunately most of them are returned to the wild by a recovery program. Over the past several years, there have been a few birds recovered along the highway project corridor under consideration. The greatest concentrations have been at the Maluhia Junction about 6.5 miles west of Lihue, and at the intersections at Puhī and Kukui Grove. Street lights appear to be one of the

Mr. Reginald Suzuka
September 14, 1998

page 2

exacerbating factors with this light attraction problem. Any new street lights planned along this section of highway or at intersections along the way, should be of the shielded, or "cut-off" luminaire type, that do not allow lateral escapement of bright light. It appears that the use of these types of lights has aided in the reduction of the light attraction problem on Kauai. A brochure describing the problem, and methods to reduce it is enclosed.

Should you have any other questions concerning the above, please feel free to contact me. Thank you for the opportunity to review.

Sincerely,

Thomas C. Telfer
District Wildlife Manager

August 6, 1998

Mr. Robert P. Smith
Pacific Island Manager
U.S. Fish & Wildlife Service
P.O. Box 50088
Honolulu, Hawaii 96850

Dear Mr. Smith:

Re: Draft Faunal Survey Report
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

The State Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigation/studies for the design of highway improvements for Kaunualii Highway. The overall length of the project is approximately 7.5 miles long (Refer to enclosed map entitled "Improvements to Kaunualii Highway Lihue to West of Maluhia Road").

A report on our faunal survey identifies two stream crossing and three wetland areas along the project. A copy of this report is enclosed.

We understand that a Wetland Assessment Report is required when a project impacts "Endangered" or "Threatened" species. The enclosed report suggests that the project is not likely to impact "Endangered" or "Threatened" species. Your review and comment(s) on this report are requested, especially with respect to whether a Wetland Assessment Report is required. Your earliest response on this matter will be appreciated.

Sincerely,

PatEn, Inc.
dba-PARK ENGINEERING

Reginald Suzuka
Vice President

cc: DOT- Kauai, attn: Steve Morikawa

TC 26 Folder 595



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Ecoteam
300 Ala Moana Boulevard, Room 3-122
Box 50083
Honolulu, Hawaii 96850

SEP 23 1998

In Reply Refer To: CAW

Reginald Suzuki
Vice President
Park Engineering
Suite 300, Kawahao Plaza
567 South King Street
Honolulu, Hawaii 96813

Re: Draft Faunal Survey Report Improvements to Kaunualii Highway, Lihou to West of
Maluhia Road (Koloa) Kauai-Environmental Studies Project No. 50DE-02-95

Dear Mr. Suzuki:

The U.S. Fish and Wildlife Service (Service) has reviewed your July 27, 1998, letter seeking comments relative to the completeness of the Avifaunal and Feral Mammal Survey for Kaunualii Highway Improvements conducted by Phillip Bruner. The project sponsor is the State of Hawaii's Department of Transportation. The surveys were conducted along the 7.5 miles of Kaunualii Highway between Lihou and Maluhia Road (Koloa) Kauai. The Service offers the following comments for your consideration.

The following project information was provided in a phone conversation between yourself and Service Biologist, Christian Willis on September 9, 1998: (1) the proposed project is to expand the width of a 7.5 mile portion of Kaunualii Highway by two car lanes; therefore, the proposed project will likely impact several wetlands and streams along the Kaunualii Highway, (2) your office has contacted the U.S. Army Corps of Engineers (USACE) regarding requirements under the Clean Water Act, and (3) your office is currently preparing an Environmental Assessment (EA) to address the potential impacts from the proposed project. As discussed during our phone conversation, the following are some of the concerns that the Service would like discussed in the EA for the proposed project.

Draft Faunal Survey Report
Kaunualii Highway
Project No. 50DE-02-95
Page 2 of 3

1) Direct and Indirect Impacts to Hawaii's endangered waterbirds.

Based on the avifaunal and feral mammal report and our knowledge of the area along Kaunualii Highway, we concur with the report findings that the following federally listed endangered waterbirds: the Hawaiian duck (*Anas wyvilliana*), the Hawaiian stilt (*Himantopus mexicanus knudseni*), the Hawaiian coot (*Fulica alai*), and the Hawaiian moorhen (*Gallinula chloropus sandvicensis*) may occur in any of the wetlands and stream crossing along the proposed project area. However, the Service can not concur with the report findings that there will be no impacts to waterbirds as a result of the proposed project. The Service believes that the proposed project may impact these birds. To assist in the review of the EA, we recommend that the EA describe the proposed construction activities and identify the expected amount of waterbird habitat loss. The EA should also address potential indirect impacts, such as changes in hydrology or potential increases in road-related contaminants (i.e. oil, grease runoff) that may wash into Huleia Stream and tributaries that feed into Papakolea Stream. It should be noted in the EA that the water collected in this watershed is essential to the operations of the Huleia National Wildlife Refuge (NWR), which was established to provide endangered waterbird habitat. Huleia NWR currently relies on the available clean water from Papakolea Stream for taro lo'i and may one day rely on Huleia Stream to provide water for additional waterbird habitat.

2) Indirect impacts to aquatic habitats and associated wildlife.

The Service is concerned that the proposed project may have impacts to aquatic species downstream of the proposed project site. Therefore, surveys of the aquatic environment should be included in the EA. These surveys should include information on native vertebrate and invertebrate species found within the streams currently crossed by Kaunualii Highway. To minimize the degradation of water quality and impacts to fish and wildlife resources and habitats the Service recommends that the following measures be incorporated into the project:

1. No construction materials should be stockpiled in the aquatic environment;
2. All construction equipment placed in the water should be free of pollutants;
3. No contamination of the aquatic environment (trash or debris disposal, etc.) should result from project-related activities;
4. A contingency plan to control petroleum products accidentally spilled during construction should be developed. Absorbent pads and containment booms should be stored on-site to facilitate the clean-up of petroleum spills; and
5. Turbidity and siltation from the proposed work should be minimized and contained to within the vicinity of the site through the use of effective silt containment devices and the curtailment of work during adverse weather conditions.


3) Impacts of additional lighting to migrating seabirds.

Finally, the Service request information on any proposed lighting improvements along the highway, and recommends that the proposed project description address potential impacts of the lighting for the highway improvements on the endangered dark-rumped petrel (*Pterodroma phaeopygia sandwichensis*) and the threatened Newell's shearwater (*Puffinus newelli*). These two species nest in forested, inland areas and migrate to the sea at various times of year. All seabirds are protected under the Migratory Bird Treaty Act. Although the birds do not inhabit the immediate project area, birds either flying in from the sea to nesting areas or heading back out to sea to feed, can become disoriented by the lights and collide with man-made structures that can kill or injure them. Therefore, new lighting associated with the proposed highway improvements could create an attractive nuisance for these seabirds. Injured seabirds that "fall-out" from collisions are highly vulnerable to predation by dogs and cats. To reduce these potential impacts the Service recommends the following measures be incorporated into the project:

1. Light poles should be limited to a height of 25 feet. Lights situated on higher poles are more likely to cause seabird fall-out than are lights on lower poles.
2. All lights used in this project should be directed downward, be shaded to prevent light from escaping horizontally, and be as low wattage as possible. It would also be helpful if the lighting is of muted colors instead of a bright white.
3. We also recommend contacting Tom Telfer at the Department of Land and Natural Resources, Division of Forestry and Wildlife, 3060 Eiwa Street Lihue, Hawaii, 96766, for other possible recommendations.

The Service appreciates the opportunity to comment on the draft study and provide technical assistance in the preparation of the EA. If you have questions regarding these comments, please contact Fish and Wildlife Biologist Christine Willis at 808/541-3441.

Sincerely,


Robert P. Smith
Pacific Islands Manager

cc: USACOE, Honolulu
DLNR, Hawaii

February 10, 1999

Mr. Robert P. Smith
Pacific Islands Manager
U.S. Fish & Wildlife Service
300 Ala Moana Blvd., Room 3-122
Honolulu, Hawaii 96850

Dear Mr. Smith:

Re: Draft Environmental Assessment
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

This is in reference to our letter of August 6, 1998 and to your letter of September 23, 1998 in response thereto. We are transmitting herewith an advance copy of the Draft Environmental Assessment for this project that addresses the comments in your letter. The following is provided to facilitate your review of our responses to your comments:

1. Describe the proposed construction activities and identify the expected amount of waterbird habitat loss.
The construction activities and areas of Wetlands that will be loss are discussed in section 5.2.7.
2. Potential indirect impacts on hydrology.
The potential impacts on the hydrology of the project area is presented in section 5.1.4.
3. Potential indirect impacts on increase in road-related contaminants that may wash into Huleia Stream and tributaries of Papakolea Stream.
The impact of the potential increase in road-related contaminants is discussed in section 5.1.4.
4. Note the importance of the waters in the watershed of the Papakolea and Huleia streams to the operations of the Huleia National Wildlife Refuge in the EA.
The importance of these waters to the Wildlife Refuge is noted in section 5.1.4.

Draft Environmental Assessment
USFWS letter of September 23, 1998
February 10, 1999
Page 2 of 2

5. Surveys of the aquatic environment and species within the streams crossed by the project.

The survey of aquatic species is discussed in section 5.2.4 and the report by Michael H. Kido in APPENDIX "D".

6. Measures to minimize the degradation of water quality and impacts to fish and wildlife resources and habitats.

Mitigation measures to minimize the degradation of water quality and impacts to fish and wildlife are presented in sections 8.1, 8.3 and 8.4.

We trust the above addresses your comments satisfactorily. Your review and comments on this advance copy (of the Environmental Assessment) will be appreciated.

Sincerely,

Reginald Suzuki
Vice President
Park Engineering
dba PARK ENGINEERING

Reginald Suzuki
Vice President

cc: DOT- Kauai, attn: Steve Morikawa

TC 26 Folder 595



United States Department of the Interior
FISH AND WILDLIFE SERVICE

Pacific Islands Ecoregion
300 Ala Moana Boulevard, Room 3-122
Box 50088
Honolulu, Hawaii 96850

In Reply Refer To: CAW

Reginald Suzuki
Vice President
Park Engineering
Suite 300, Kawaiahao Plaza
567 South King Street
Honolulu, Hawaii 96813

MAR 11 1999

Re: Draft Environmental Assessment for Improvements to Kaunualii Highway, Lihue to West of Maluhia Road (Project No. 30DE-02-95), Lihue, Kauai, Hawaii

Dear Mr. Suzuki

The U.S. Fish and Wildlife Service (Service) has reviewed your January 1999 Draft Environmental Assessment (DEA) for Improvements to Kaunualii Highway, Lihue to West of Maluhia Road, Lihue, Kauai. The project sponsor is the State of Hawaii's Department of Transportation. The Service offers the following comments for your consideration.

GENERAL COMMENTS:

The Service does not believe that the DEA adequately assesses the potential impacts of the proposed project or addresses the concerns outlined in the Service's letter dated September 23, 1998 (see section 9 of the DEA). The Service believes that the Avifaunal and Feral Mammal Survey, Botanical Resources and Wetlands Assessment, and the Aquatic Species Survey and Biological Assessment Study were adequate and do provide adequate information to determine the existing conditions. However, during our review of the DEA, we found that some of the information contained in the surveys was omitted from relevant sections, making the DEA incomplete or misleading with regard to potential project impacts.

Because of the inadequacy of the DEA the Service is unable to conduct a proper evaluation of potential impacts that may result from the proposed project. Therefore, the Service does not concur with the Negative Declaration determination for the proposed action.

Draft EA
Kaunualii Highway
Page 2 of 3

SPECIFIC COMMENTS:

Page 9: Section 5.2.2

In our Avifaunal and Feral Mammal Report, the federally protected waterbirds, the Hawaiian duck (*Anas wyvilliana*), the Hawaiian stilt (*Himantopus mexicanus knudseni*), the Hawaiian coot (*Fulica alai*), and the Hawaiian moorhen (*Gallinula chloropus sandvicensis*), were not observed at the time of the survey. However, it was stated in the report, and in our letter concurring with the results of the survey, that federally protected waterbirds may occur in any of the wetlands, including the portion of Huleia Stream that crosses the proposed project area and the areas directly downstream from the highway runoff. This information was omitted on pages 9, 17, 20 and 21. As a result of this omission, no potential impacts or loss of habitat of these waterbirds were evaluated or discussed in the DEA. We recommend that the DEA evaluate the potential impacts of the proposed project on these waterbirds.

Page 7: Section 5.1.4

In our September 23 letter, we also requested that the DEA address potential indirect impacts, such as changes in hydrology or potential increases in road-related contaminants (i.e., oil, grease runoff) that may wash into Huleia Stream and tributaries that feed into Papakolea Stream, both of which are important water sources for Huleia National Wildlife Refuge. The responses given in the DEA were as follows:

Page 8: "The increase should be less 'with the project' because the project will reduce traffic congestion and travel time."

Page 20: "The project will only duplicate an existing condition"

Page 21: "Pollutants from agricultural sources will probably remain unchanged or may even decrease while those from motor vehicles are likely to increase with traffic."

The Service finds the last statement to be contradictory with the first two, above. Further information is required to determine the bases of these statements, such as any traffic study that may have been conducted. The Service has found that improvements to roadways, such as those proposed for this project, generally lead to increased traffic and related increased potential for contamination. We do not believe that the DEA has adequately addressed our concerns regarding increased road-related contaminants.

Page 21: Section 6.30

In this section, it is stated that there will be a decrease in contamination, and there will not be a significant effect on the quality of surface water. The Service would like to know what study this statement is based on and how this conclusion was made. This reference should have been included in the DEA.

Draft EA
Kaunualii Highway
Page 3 of 3

Page 21: Section 6.31

In this section, it is stated that the impacts to wetlands are discussed elsewhere in the document. The Service can not find any adequate discussion of wetlands or wetland resources in the DEA. Therefore, Service does not feel that the effects to sensitive areas such as wetlands have been adequately addressed in the DEA.

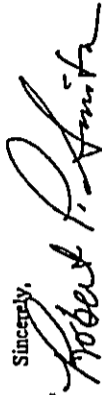
Page 24: Section 8.3

It is stated, "In those instances where the Wetland cannot be avoided, replacing the loss of Wetland with a comparable area of Wetland should be considered."

In order for the Service to concur with a Negative Declaration determination for this project, we apply the federal standards necessary for the issuance of permits under the Clean Water Act. The Service must ensure that its policy of "no net loss of wetland functions and values" has been met. To assist in protecting these important resources, the Service has published a specific policy in the Federal Register (46 FR 7656) that provides guidance on mitigation for wetland impacts. This policy outlines five sequential steps that must be followed in any project development phase that may impact wetlands. These steps are: "...a) Avoid the impact, b) Minimize the impact, c) Rectify the impact, d) Reduce or eliminate the impact over time, and e) Compensate for the impacts..." Based on the information contained in the DEA, the Service does not believe that these steps have been followed. Therefore, we request that the applicant fully address project-related mitigation requirements.

The Service requests that the applicant prepare a revised DEA for review to insure that the potential impacts to federally protected trust resources are satisfactorily addressed. The Service appreciates the opportunity to comment and provide technical assistance in the preparation of the DEA. If you have questions regarding these comments, please contact Fish and Wildlife Biologist Christine Willis at 808/541-3441.

Sincerely,



Robert P. Smith
Pacific Islands Manager

cc: USACOE, Honolulu
DLNR, Hawaii



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
Honolulu, HI 96850
December 5, 1999

DEC - 8 1999

IN REPLY REFER TO
HEC-HI

Mr. Robert P. Smith
Pacific Island Manager
U.S. Department of the Interior
Fish and Wildlife Service
Pacific Islands Ecoregion
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawaii 96850

COPY

In addition, the Service was concerned that the project has the potential to impact aquatic species downstream of the project site.

We ask that the Service review the listing of species above in order to determine whether this information is still current. If you have questions, please do not hesitate to call me at (808) 541-2700 (ext. 305).

Sincerely yours,

Pat V. Phung, P.E.
Transportation Engineer

Dear Mr. Smith:

Subject: Improvements to Kaunualii Highway, Lihue to West of Maluhia Road
Island of Kauai, Hawaii
Project Coordination Under Section 7, Endangered Species Act

Enclosures: U.S. Fish and Wildlife Service letter to Park Engineering (ParEn, Inc.), dated
September 23, 1998
U.S. Fish and Wildlife Service letter to Park Engineering (ParEn, Inc.), dated
March 11, 1999

The U.S. Fish and Wildlife Service (Service) was asked by ParEn, Inc. to review an avifaunal and feral mammal survey, a botanical resources and wetlands assessment, an aquatic species survey and a preliminary draft environmental assessment (pre-draft EA) for the subject project. In the letter dated March 11, 1999 (see enclosure), the Service stated that although the environmental studies provide adequate information to determine existing conditions, the pre-draft EA was "incomplete or misleading with regard to potential project impacts." In addition, the Service asked that pre-draft EA be revised "to ensure that the potential impacts to federally protected trust resources are satisfactorily addressed." Currently, we are in the process of revising the draft EA, and therefore, are working to be compliant with Section 7 of the Endangered Species Act.

cc: Mr. Steve Morikawa, State of Hawaii, Department of Transportation
Mr. Glenn Ikeda, ParEn, Inc.
Mr. Jason Yazawa, Parsons Brinckerhoff Quade & Douglas, Inc.

In the letter of September 23, 1998 (see enclosure), the Service identified the following species:

Endangered waterbirds, which may occur in any of the wetlands and stream crossings in the project area

Hawaiian duck (*Anas wyvilliana*)
Hawaiian stilt (*Himantopus mexicanus*)
Hawaiian coot (*Fulica alai*)
Hawaiian moorhen (*Gallinula chloropus*)

Migrating seabirds that may be affected by highway lighting

Endangered dark-rumped petrel (*Pterodroma phaeopygia sandwichensis*)
Threatened Newell's shearwater (*Puffinus newelli*)



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Ecoregion
300 Ala Moana Boulevard, Room 3-122
Box 50088
Honolulu, Hawaii 96850

RECEIVED
JAN 21 1999
HAWAII OFFICE

In Reply Refer To: LLLW
Mr. Pat V. Phung, P.E.
US Dept. of Transportation
Federal Highway Administration
Hawaii Division
300 Ala Moana Blvd., Rm 3-306
Honolulu, HI 96850

JAN 31 2000

Re: Concurrence of Species List for Improvements to Kaunualii Highway, Lihue to West of Maluhia Road, Kauai, Hawaii

Dear Mr. Phung:

This responds to your December 5, 1999, letter in which you requested that the U.S. Fish and Wildlife Service (Service) review and update a species list for the proposed project to improve Kaunualii Highway from Lihue to West of Maluhia Road, Kauai, Hawaii. The species list you provided included the threatened Newell's shearwater (*Puffinus newelli*), and the endangered Hawaiian duck (*Anas wyvilliana*), Hawaiian gallinule (*Gallinula chloropus sandwicensis*), Hawaiian stilt (*Himantopus mexicanus knudseni*), Hawaiian coot (*Fulica alai*), and Hawaiian (dark-rumped) petrel (*Pterodroma phaeopygia sandwicensis*).

The Service has reviewed the information provided by you and pertinent information in our files, including maps prepared by The Nature Conservancy's Hawaii Natural Heritage Program and information compiled by the Service's Hawaii and Pacific Plant Recovery Coordinating Committee. Based on our review, we concur with the information you provided with the addition of the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) which may also be in the area of the proposed project.

If you have any questions, please contact Fish and Wildlife Biologist Lorena Wada (phone: 808/541-3441; fax: 808/541-3470).

Sincerely,

Paul Henson
Field Supervisor
Ecological Services

RECEIVED
MAR 13 2000
PARTONS BRICKERHOFF
LAW OFFICES
HONOLULU, HAWAII



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
Honolulu, HI 96850
March 10, 2000

BY MAIL DELIVER TO
HEC-HI

Mr. Paul Henson
Field Supervisor
U.S. Fish and Wildlife Service
300 Ala Moana Boulevard, Room 3-122
Box 50088
Honolulu, Hawaii 96850

Dear Mr. Henson:

Subject: Improvements to Kaunualii Highway, Lihue to West of Maluhia Road
Island of Kauai, Hawaii
Project Coordination Under Section 7, Endangered Species Act

In a letter dated January 31, 2000, the U.S. Fish and Wildlife Service (Service) provided a list of Federal Trust species that could potentially be affected by the subject project. In addition, the Service previously commented on the project in letters dated September 23, 1998 and March 11, 1999. The Service stated that the Hawaiian duck (*Anas wyvilliana*), Hawaiian stilt (*Himantopus mexicanus*), Hawaiian coot (*Fulica alai*), Hawaiian moorhen (*Gallinula chloropus*), Hawaiian dark-rumped petrel (*Pterodroma phaeopygia sandwicensis*), Newell's shearwater (*Puffinus newelli*) and the Hawaiian Hoary Bat (*Lasiurus cinereus semotus*) could possibly be in the project area.

The Federal Highway Administration (FHWA) believes that the species listed in the January 31, 2000 letter would not likely be adversely affected by the proposed project. The rationale for this determination is described below.

According to the Service recovery plans for the endangered Hawaiian waterbirds, primary or core wetland habitats near the project area for the Hawaiian waterbirds are in the Koloa area and the Huleia National Wildlife Refuge. These wetland areas are at least two to three miles south of and downstream from the project area. The project will not fill or affect any of these wetlands, nor will it change the drainage patterns of streams and ditches crossing Kaunualii Highway that discharge into the core wetland areas. The only wetland fill proposed by the project will be less than 0.5 acres. The affected wetland is in the west side of Puhii, directly adjacent to Kaunualii Highway. According to a wetland delineation survey conducted by the U.S. Army Corps of Engineers, this wetland does not function as waterbird habitat.

For traffic safety, the project will include highway lamps at locations such as intersections and populated areas. Some of these locations already have highway lamps. Lighting to be provided by the project would be designed to reduce glare and shield light from migrating seabirds

RECEIVED

United States Department of the Interior



FISH AND WILDLIFE SERVICE
Pacific Islands Ecoregion
300 Ala Moana Boulevard, Room 3-122
Box 50088
Honolulu, Hawaii 96850

(Hawaiian dark-rumped petrel and Newell's shearwater), based on guidance in "The Newell's Shearwater Light Attraction Problem, A Guide for Architects, Planners, and Resort Managers."

The recovery plan for the Hawaiian hoary bat stated that this bat prefers roosting locations in open areas near forests, and is rarely found in towns or open fields. The areas that will be used by the project are either open space near urban areas or open fields that were recently used for large-scale agriculture. Therefore, based on the description of preferred habitat types in the recovery plan, the terrain that would be affected by the roadway widening does not appear to be the type of habitat favored by the Hawaiian hoary bat.

Based on the information herein provided, we request that the Service provide written concurrence with the FHWA finding that the proposed project will not likely adversely affect the Federal Trust species listed in the January 31, 2000 Service letter.

If you have questions or require additional information, please do not hesitate to call me at (808) 541-2700 (ext. 305).

Sincerely yours,

Pat V. Phung
Pat V. Phung, P.E.
Transportation Engineer

cc. Mr. Steve Morikawa, HWY-K
Mr. Glenn Ikeda, ParEn, Inc.
Mr. Jason Yazawa, Parsons Brinckerhoff Quade & Douglas, Inc.

APR 11 2000

In Reply Refer To: GCS

Pat V. Phung, P.E.
Transportation Engineer
U.S. Department of Transportation
Federal Highway Administration, Hawaii Division
300 Ala Moana Blvd., Rm. 3-306
Honolulu HI 96850

Re: Informal ESA Section 7 Consultation for the Improvements to Kaunuaui Highway Project, Island of Kauai, Hawaii.

Dear Mr. Phung:

The US Fish and Wildlife Service (Service) has received your letter dated March 10, 2000 requesting our concurrence under section 7 of the Endangered Species Act of 1973, as amended (Act), that the Federal Highway Administration's (FHWA) proposed improvements to Kaunuaui Highway are not likely to adversely affect endangered or threatened species.

The FHWA proposes to widen the roadway from Maluhia Road east to Lihue. In previous correspondence dated September 23, 1998 and March 11, 1999, the Service noted that the following threatened or endangered species are likely to occur in the project area: the Hawaiian duck (*Anas wyvilliana*), Hawaiian coot (*Fulica alai*), the Hawaiian moorhen (*Gallinula chloropus sandwicensis*), Hawaiian stilt (*Himantopus mexicanus*), Hawaiian dark-rumped petrel (*Pterodroma phaeopygia sandwichtenis*), Newell's shearwater (*Puffinus newelli*), and the Hawaiian hoary bat (*Lasiurus cinereus semionus*). The project's potential effects upon these organisms are discussed below:

Endangered Waterbirds

A variety of aquatic habitats are found within the Kaunuaui Highway corridor, including wetlands, intermittent and perennial streams, manmade ponds, reservoirs, and ditches. All of these areas are potential waterbird habitat. However, actual use of the wetlands and other aquatic

Mr. Pat Phung
Page 2

habitats by waterbirds in the project area appears limited. No observations were made of waterbirds in areas potentially affected by the project either by the ornithological consultant retained by the project sponsors (April 15 and 16, 1998) or by Service biologists who participated in the Army Corps of Engineers wetland delineation for the project (Jan 31 to Feb 4, 2000). Considerable effort has been expended to avoid direct impacts to wetlands, and actual fill of wetlands has been reduced to an area of less than 0.5 acres. We believe this proposed filling will result in only temporary displacement of waterbirds and will have no overall adverse effect.

Threatened and Endangered Seabirds

Lighting will be installed at locations along the project corridor such as intersections and populated areas. Threatened or endangered seabirds that nest in inland mountain areas can become disoriented by highway lighting and collide with man-made structures. Injured and disoriented seabirds that are forced to land are at great risk of predation by cats and dogs or of being hit by automobiles. Although there will be an increase in the amount of lighting as a result of the proposed project, the light fixtures utilized for this project will be designed and installed to reduce glare and shield light from migrating seabirds. These design features will be based on guidance in "The Newell's Shearwater Light Attraction Problem, A Guide for Architects, Planners, and Resort Managers."

Hawaiian Hoary Bat

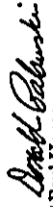
Much of the region surrounding the Kaunualii Highway is adjacent to populated areas. Some of the highway goes through a rural landscape that historically was cleared of most forest cover for sugar cane cultivation. These agricultural areas are in transition from sugar to other types of crops, presently most of these areas lie fallow. Habitat requirements and conservation goals for the Hawaiian Hoary Bat are described in the Recovery Plan for the Hawaiian Hoary Bat. Because the Hawaiian Hoary Bat prefers roosting and foraging habitat in open areas near forests, it is unlikely that the roadway widening project will impact either roosting or foraging habitat for bats.

In consideration of the information presented to the Service with regard to the scope and potential effects of the proposed project, and our evaluation of the habitat requirements of endangered species likely to occur in the area, the Service concurs with your determination that the proposed action is not likely to adversely affect endangered or threatened species under Service jurisdiction. The requirements of section 7 of the Act have been satisfied. However, obligations under section 7 of the Act must be reconsidered if: 1) new information reveals impacts of this defined action that may affect a listed species or critical habitat in a manner that was not previously considered, 2) this action is subsequently modified in a manner not previously considered in this assessment, or 3) a new species is listed or critical habitat determined that may be affected by the identified action.

Mr. Pat Phung
Page 3

Thank you for your interest in protecting endangered species. If you have questions please contact our Program Leader for Vertebrate Listing, Consultation and Recovery, Marlet Zablan or Fish and Wildlife Biologist Gordon Smith at 808/541-3441.

Sincerely,


Paul Henson
Field Supervisor
Ecological Services

BERNARD J. CANTWELL
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

ANDREW B. WELSH, CHAIRMAN
BOARD OF LAND AND NATURAL RESOURCES
OFFICE
1505 KALANIANA'OLE
DRIVE

AGRICULTURE DEVELOPMENT
PROGRAM
AQUATIC RESOURCES
CONSERVATION AND
ADMINISTRATIVE AFFAIRS
CONSERVATION AND
RESOURCES DIVISION
CONVEYANCE
DIVISION
FORESTRY
HISTORIC PRESERVATION
DIVISION
LAND MANAGEMENT
DIVISION
PLANNING
DIVISION
WATER AND LAND DEVELOPMENT

August 24, 1998

Mr. Reginald Suzuka
Park Engineering
Kawaiahaeo Plaza, Suite 300
567 South King Street
Honolulu, Hawaii 96813-3036

LOG NO: 22119
DOC NO: 9808tm09
Architecture

Dear Mr. Suzuka:

SUBJECT: Draft Archaeological Assessment Report
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Project No. 50DE-02-95
Lihue, Kauai

Thank you for transmitting the draft archaeological assessment report of the proposed widening of Kaunualii Highway. We concur with the findings of the archaeological survey. However, we recommend including a map in the final report indicating the location of the historic sites that were found and the proposed width of the highway so that our office can better ascertain its effect.

We concur with the recommendations of the report regarding the Grove Farm office building and the Lihue Public Cemetery. Since both the Lihue Mill Bridge and the Hoomana Overpass Bridge were evaluated to be eligible for nomination to the National Register of Historic Places, we recommend that these structures be retained rather than widened with perhaps another bridge going in the opposite direction next to the existing bridge. Again, it is difficult to make recommendations without indication of land and site constraints.

Thank you for the opportunity to comment. Should you have further questions, please feel free to call Tonia Moy at 587-0005.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

TMjje

cc: Nancy McMahon

August 6, 1998

Mr. Don Hibbard
Administrator
State Historic Preservation Division
33 S. King Street, 6th Floor
Honolulu, Hawaii 96813

Dear Mr. Hibbard:

Re: Draft Archaeological Assessment Report
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

The State Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigation/studies for the design of highway improvements for Kaunualii Highway.

The proposed project is approximately 7.5 miles long, starting at the Lihue Mill and extending to a point about half a mile beyond the junction of Maluhia Road (See enclosed map entitled "Improvements to Kaunualii Highway Lihue to West of Maluhia Road"). The project will widen the existing highway from a two lane to a four lane divided highway. In general, the new highway will follow the existing highway alignment.

An archaeological survey/assessment report has been prepared for this project, a copy of which is enclosed. Your review and comments are requested, if we have inadvertently overlooked an archaeological resource or omitted information we should have included, please so inform us.

Your earliest response on this matter will be appreciated.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President

cc: DOT- Kauai, attn: Steve Monkawa

TC 26 Folder 595

Draft Archaeological Assessment Report
September 9, 1998
Page 2 of 2

September 8, 1998

Mr. Don Hibbard
Administrator
State Historic Preservation Division
33 S. King Street, 6th Floor
Honolulu, Hawaii 96813

Dear Mr. Hibbard:

Re: Draft Archaeological Assessment Report
Improvements to Kaunuaia Highway
Lihue to West of Mahulia Road (Kolea)
Kauai-Environmental Studies
Project No. 50DE-02-95

Thank you for your letter of August 24, 1998 in which you commented on the subject draft report. We will be complying with the recommendations on the Grove Farm office building and the Lihue Public Cemetery. With regard to the existing Lihue Mill Bridge, we feel it is important for you to know the following about this bridge:

1. The overall width of the bridge including railings is approximately 36 feet.
2. The two traffic lanes are each 12 feet wide.
3. There is no shoulder.
4. The two sidewalks are each 4.5 feet wide (One on each side of the bridge)
5. The existing railings are deteriorated and must be replaced. The design of these railings is such that they do not meet current design standard/requirements for vehicle impact.

We are presently working with the State on the design/dimensional requirements for this bridge. ATTACHMENT "A" depicts the most recent discussions with the State on these requirements. The overall width of 55.5 feet will accommodate two traffic lanes, a shoulder/bike lane, pedestrian walkway and space for maintenance personnel. Please note that this design is still preliminary.

The main elements of the new bridge are:

- a. The Existing Bridge Structure- The existing foundation and structural support (beams, girders, etc.) will be retained. The bridge deck and railings will be replaced.
- b. Additional Bridge Foundation and Structural Support - Additional foundation and structural supports will be constructed to accommodate the wider bridge section
- c. New Bridge Deck- A new bridge deck will be designed and constructed to

meet current design standards.

d. New Bridge Railings - New bridge railings that are identical to the existing railings will be constructed. These railings will not/can not be designed to meet current impact design requirements.

e. Concrete Barrier Walls- Concrete barriers will be constructed along both sides of the bridge. These barriers will be designed to meet current design standards/requirements for vehicle impact. The barrier along the edge of the sidewalk will provide protection for pedestrians. It will also provide protection for the bridge railing. The barrier on the opposite side is will shield and protect the bridge railing from vehicular impact damages.

The existing Lihue Mill Bridge will be used by traffic headed in the east bound direction only. A similar new bridge will be constructed for west bound traffic.

As for the existing Hoomana Overpass Bridge, it can no longer be used for automobile traffic because access will be restricted by its proximity to the proposed highway improvements. However, it is possible that this bridge can be used by pedestrians and bicyclists.

Please review and provide us with any comments you may have on the proposed improvements to the Lihue Mill Bridges. Should you have questions concerning the above, please feel free to call us. Your earliest response to this request will be appreciated.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President



cc: DOT- Kauai, attn: Steve Morikawa
TC 26 Folder 595



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
33 SOUTH KING STREET, 6TH FLOOR
HONOLULU, HAWAII 96813

NICHOLE B. WILSON, CELESTION
BOARD OF LAND AND NATURAL RESOURCES
GOVT/20
CELESTION COORDINATOR
AGRICULTURE DEVELOPMENT
PROGRAM
AQUATIC RESOURCES
CONSERVATION AND
ADVANCED RESEARCH
CONSERVATION AND
CONSERVATION
HISTORIC PRESERVATION
DIVISION
LAND PLANNING
WATER AND LAND DEVELOPMENT

LOG NO: 22333
DOC NO: 9810mm03
Architecture

October 9, 1998

Mr. Reginald Suzuka
Park Engineering
Kawaiabao Plaza
567 South King Street, Suite 300
Honolulu, Hawaii 96813-1676

Dear Mr. Suzuka:

SUBJECT: Draft Archaeological Assessment Report
Improvements to Kaunualii Highway
Project 50DE-02-95
Lihue Mill Bridge and Hoomana Overpass Bridge

Thank you for submitting the above project and sending the site plans and sections of the proposed widening of Lihue Mill Bridge. We concur with the concept of utilizing Hoomana Overpass Bridge as pedestrian and bicycle access and thus maintaining the historic bridge. Will the second bridge along the new Kuhio Highway impact Hoomana Overpass Bridge? Plans indicate that the widening will be very close to or may be on top of the bridge.

Regarding Lihue Mill Bridge, we are glad to see current plans call for its retention, however, we do not concur with the replacement of the unique steel railings which is a good part of what makes the bridge significant. We recommend not widening the Mill Bridge and placing bicycle and perhaps pedestrian access on the new bridge.

Thank you for consulting with us while plans are still preliminary. Please call Tonia Moy at 587-0005 with any questions and to set up an appointment to discuss alternatives.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

TMj:jk

c Barnes Riznik

September 24, 1998

Mr. Don Hibbard
Administrator
State Historic Preservation Division
33 S. King Street, 6th Floor
Honolulu, Hawaii 96813

Dear Mr. Hibbard:

Attention: Tonia

Re: Lihue Mill Bridge
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kausi-Environmental Studies
Project No. 50DE-02-95

Per your telephone request this morning, I am transmitting the following:

1. Prints of the preliminary plans (dated August 1998) with information on the existing and new Lihue Mill Bridges. The set (of plans) includes sheets 1, 22, 23 and 29.
2. Two color photos of the existing Mill Bridge
3. Six black and white photos (Nos. 97 thru 102) of the existing Mill Bridge

If I can be of further assistance, please let me know.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President

TC 26 Folder 595

ROYAL L. CANTLAND
GOVERNOR OF HAWAII



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
KALANIANA'OLELE PARKWAY, ROOM 618
HONOLULU, HAWAII 96813

THOMAS E. JENSEL, CHAIRMAN
BOARD OF LAND AND NATURAL RESOURCES

SECRETARY
JANICE E. LUNDGREN

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CONSERVATION AND ACQUISITION
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CONSERVATION
HAWAIIAN MONUMENTS
HISTORIC PRESERVATION
LAND
STATE PARKS
WATER RESOURCES MANAGEMENT

December 28, 1999

Mr. Jason Yazawa
Parsons Brinckerhoff
Fax: (808) 528-2368

Dear Mr. Yazawa:

**SUBJECT: Improvements to Kaunualii Highway
Section 106 Consultation List**

Thank you for transmitting a proposed list for consultation. The list of organizations and agencies that you have compiled seems adequate for consultation. We are pleased to see that you are making this good faith effort to consult the public with this project. If another interested party does arise, we will let you know. Please inform us of any information or comments these organizations have regarding affects to historic properties on the project to widen Kaunualii Highway.

Thank you for your diligence on this project. Please call Tomia Moy at 692-8030 should you have further questions.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

TML:lm

LOG NO: 24648
DOC NO: 9912tml17
Architecture

PHONE (808) 584-1888



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPULANI BOULEVARD, SUITE 630
HONOLULU, HAWAII 96813

FAX (808) 584-1885

RECEIVED
OFFICE OF HAWAIIAN AFFAIRS - KAUAI
2000 JAN 19 A 10:30

January 14, 2000

Ms. Steven M. Kyono, P.E.
District Engineer
Hawaii Department of Transportation
Highways Division, Kauai District
3060 Eiwa Street, Room 205
Lihue, Hawaii 96766

EIS 356

Re: Kaunualii Highway Improvements, Lihue to West of Maluhia Road, Project No. 50DE-02-95, Island of Kauai.

Dear Mr. Kyono:

Thank you for the opportunity to review the archaeological and historical assessment drafted by Cultural Surveys Hawaii for the Kaunualii Highway improvement project. We found the historical information on the establishment of the missionary colony at Koloa and the development of the highway between Koloa and Lihue interesting.

However, the report contains very little information concerning Hawaiian occupation and use of the lands at or between Koloa and Lihue. That seems a critical omission. Hawaiians had a highly structured and thriving culture on the island of Kauai long before the trade/missionary population arrived there. The highway that was finally established in this region, quite likely had its origins in the trail system used by the Hawaiian community. Certainly, there is more information on the nature and use of this trail system than is currently included in the draft report. We suggest that the report should be revised to include this information.

Your letter also indicated that you will be preparing and Environmental (EA) for this project. We would appreciate the opportunity to review both the EA and the final archaeological report before the project is permitted. In addition, if federal money use and historic resources will be

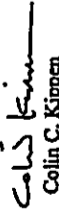
U.S. GOVERNMENT PRINTING OFFICE: 2000 O-488-888

Mr. Steven M. Kyono, P.E.
January 14, 2000
Page two

affected, you will need to consult with the Office of Hawaiian Affairs as required by the Section 106 provisions of the National Historic Preservation Act. Consultation must be initiated by contacting our Honolulu Office.

If you have any questions concerning our comments, please contact Lynn Lee, Policy Analyst/Environmental Planner at 594-1936.

Sincerely,


Colin C. Kippen
Deputy Administrator

cc: OHA Kauai Community Affairs Office.

SEDUWAMEA J. CANTILLANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAAUI DISTRICT
3080 EWA STREET, ROOM 205
LIHUE, HAWAII 96766

February 1, 2000

Mr. Colin C. Kippen
Deputy Administrator
Office of Hawaiian Affairs
State of Hawaii
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaii 96813

Dear Mr. Kippen:

SUBJECT: KAUNUALII HIGHWAY IMPROVEMENTS
LIHUE TO WEST OF MALUHIA ROAD
PROJECT NO. 50DE-02-95

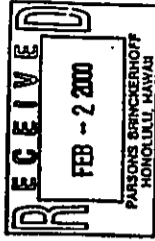
Thank you for your review and comments on the draft archaeological and historical assessment report prepared by Cultural Surveys Hawaii for the subject project. We have carefully considered your suggestion that the report be revised to include research on the Hawaiian occupation and use of lands from Koloa to Lihue beyond what is presented in the report. Although such information, if obtainable, would be interesting, we feel that such research would be beyond the scope of this exercise, which is to make a good faith effort to identify and assess the impact on historic properties in the project's area of potential effect. Unless specific evidence is provided to us that would indicate that research conducted to date has missed a potential historic property, we plan to rely on the results of the report as well as public and agency consultation to identify historic properties.

We will send a copy of the project's Draft environmental assessment to the Office of Hawaiian Affairs (OHA) just prior to the public review period. In addition, the OHA will be consulted further on the "effect" determinations of the identified historic properties in accordance with Section 106 of the National Historic Preservation Act. The effect determinations will be made by the Federal Highway Administration.

KAZUO MATSUDA
DIRECTOR
DEPUTY DIRECTOR
SHUJI K. MINAKI
GLENN M. OKUMOTO

IN REPLY REFER TO:

HWY-KE 4.000088



Mr. Colin C. Kippen
Page 2
February 1, 2000

HWY-KE 4.000088

Again, we thank you for the time and effort expended in helping us plan this project, and we look forward to continuing to work with the OHA to minimize project impacts on historic properties and other important resources. If you have any questions, please call Steve Morikawa at (808)274-3111.

Very truly yours,

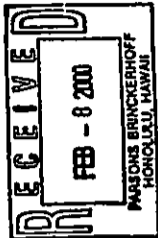


STEVEN M. KYONO, P.E.
District Engineer

SM:es

cc: Tonia Moy, State Historic Preservation Division
Pat Phung, Federal Highway Administration
Glenn Ikeda, ParEn, Inc.

✓ David Atkin, Parsons Brinckerhoff Quade & Douglas, Inc.



COUNTY OF KAUAI
PLANNING DEPARTMENT
4444 RICE STREET, SUITE 473
LIHUE, HAWAII 96766

MEMORANDUM

COPY

Date: February 4, 2000
To: Steve Kiyono, State Highways, District Engineer
From: Kauai Historic Preservation Review Commission
Subject: Project No. 50DE-02-95, Kaunualii Highway Improvements (Lihue to Maluhia)

Thank you for attending the Kauai Historic Preservation Review Commission (KHPRC) meeting on February 2, 2000 and for the informative presentation by your consultants. Based on the KHPRC's understanding of the project, the following comments are offered at this time:

1. With respect to the identification of historic resources which may be impacted by the project, the Lihue Mill and accessory structures, old railroad crossings along the route, the Kiohaha Complex and the adjoining residence (Rapozo house) are historic and perhaps should be recognized in the report (see attached profiles).
2. Attached is a copy of the KHPRC's recommendations to the Lawai Bridge Project. These recommendations should also apply to this project as well as other bridge improvement projects.
3. Excerpts from the Kauai Historic Bridge Inventory pertaining to the Lihue Mill Bridge and the Hoomana Overpass are attached for your information.

Finally, the KHPRC requests to be periodically updated as this project progresses and as more detailed information regarding mitigating actions (set backs from historic resources, preliminary construction designs, etc.) become available.

Please call Rick at the Planning Department should you have any questions regarding this matter.

Mahalo.

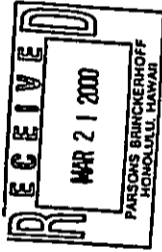
cc: SHPD
Jason Yazawa
Attachments

1

RECEIVED



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3202
Honolulu, HI 96850
March 20, 2000



IN REPLY REFER TO
HEC-HI

Office of Hawaiian Affairs;
State of Hawaii Department of Hawaiian Home Lands;
Historic Hawaii Foundation;
Kauai Historic Preservation Review Commission (KHPRC); and
Kauai Historical Society.

Mr. Timothy E. Johns
Chairperson and State Historic Preservation Officer
State of Hawaii, Department of Land and Natural Resources
601 Kamokila Boulevard, Rm. 555
Kapolei, Hawaii 96707

Attention: Ms. Tonia Moy

Dear Mr. Johns:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
Section 106 of the National Historic Preservation Act
Request for Concurrence on Effect Determinations

In accordance with Section 106 of the National Historic Preservation Act, this letter requests that the State Historic Preservation Officer (SHPO) concur on effect determinations regarding historic properties in the subject project's Area of Potential Effect (APE).

The following historic properties were identified in the APE:

1. Lihue Mill Bridge
2. Hoomana Overpass Bridge
3. Lihue Public Cemetery
4. Grove Farm administrative office building
5. German Hill historic district
6. Lihue Mill
7. Kiloana
8. residence on the Kiloana property

The first four properties were identified in an archaeological and historic assessment report prepared for this project by Cultural Surveys Hawaii. The German Hill historic district was identified by your staff. Subsequent to a consultation meeting held with your staff on November 16, 1999, we submitted the assessment report to the following agencies and organizations who were asked to help identify other potential historic properties in the APE:

In addition, a public meeting was held at Wilcox Elementary School in Lihue in the evening of January 13, 2000, to discuss the project's impacts on historic properties, and a presentation was made at a regular meeting of the KHPRC on February 2, 2000. Historic properties 6 to 8 above were identified by the KHPRC in a letter dated February 4, 2000, to the State of Hawaii Department of Transportation. KHPRC also mentioned the possibility of old railroad crossings along the highway potentially being historic resources. Although the project was able to obtain information on the locations of these crossings, all of the tracks have either been removed or covered so there is no visible evidence that any track is still in existence.

The Federal Highway Administration (FHWA) is rendering "no adverse effect" determinations on Lihue Mill, Lihue Public Cemetery, Kiloana, the residence on the Kiloana property, the Grove Farm administrative office building, Hoomana Overpass Bridge, and the German Hill historic district. The "no adverse effect" determinations for the first five properties are being rendered because the project would widen Kaunualii Highway away from these sites.

Although the project would widen the highway on the side of Hoomana Overpass Bridge, the bridge would not be displaced or altered. It would, however, be closed to vehicular traffic because Hoomana Road would be realigned to maintain access to German Hill. The bridge would remain open for pedestrians and cyclists traveling between German Hill and Kaunualii Highway.

The proposed realignment of Hoomana Road would require the relocation of one residence within the German Hill historic district. Nonetheless, the FHWA determines that the realignment would not affect the historic integrity of the district because the residence is located at the extreme southern edge of the district, and the remaining houses and church would remain a cohesive unit. Based on information obtained from your staff, the residence is not individually historic. In accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act, the owner of the residence would be provided with relocation assistance. However, provided that the house is moveable, the project could relocate the house in the district if suitable property can be found and the owner is agreeable. If the house is razed, the project would provide photo documentation of the house in addition to what currently is in your files.

The FHWA renders an "adverse effect" determination on Lihue Mill Bridge because the project would require the widening of its deck and the removal of its steel railings. The FHWA acknowledges that these railings are part of what makes Lihue Mill Bridge historic. Unfortunately, the removing of the rails is unavoidable, regardless of whether the project proceeds, because they are rusted and decrepit. Replacing the railings with the same or similar type of railings would not meet our highway safety standards.

ENJAMBE L. CAVETANO
GOVERNOR OF HAWAII



TIMOTHY E. JOHNS, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
DEPUTY
JANET L. CARWELL

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION
Kalahele Building, Room 515
611 Kalia Road
Honolulu, Hawaii 96813

If you have questions or require additional information, please do not hesitate to call me at
(808) 541-2700 (ext. 305).

Sincerely yours,

Pat V. Phung, P.E.
Transportation Engineer

cc. State of Hawaii Office of Hawaiian Affairs
Historic Hawaii Foundation
Mr. Steve Morikawa, State of Hawaii, Department of Transportation (w/o enclosures)
Mr. Glenn Ikeda, ParEn, Inc. (w/o enclosures)
✓Mr. Jason Yazawa, Parsons Brinckerhoff Quade & Douglas, Inc. (w/o enclosures)

Enclosures: Letter from ParEn, Inc., to State Historic Preservation Division (SHPD) dated August 6, 1998
Letter from SHPD to ParEn, Inc., dated August 24, 1998
Letter from ParEn, Inc., to SHPD dated September 9, 1998
Letter from ParEn, Inc., to SHPD dated September 24, 1998
Letter from SHPD to ParEn, Inc., dated October 9, 1998
Draft minutes of November 16, 1999, meeting involving SHPD, FHWA, ParEn, Inc., and Parsons Brinckerhoff (PB)
Fax letter from SHPD to PB dated December 28, 1999
Letter from the State of Hawaii Office of Hawaiian Affairs (OHA) to the State of Hawaii Department of Transportation (SDOT) dated January 14, 2000
Letter from SDOT to OHA dated February 1, 2000
Draft summary of a public meeting held on January 13, 2000
Memorandum from the Kaula Historic Preservation Review Commission to SDOT dated February 4, 2000
Draft minutes of a March 9, 2000 meeting involving SHPD, FHWA and PB

March 28, 2000

Mr. Pat V. Phung
U.S. Department of Transportation
Federal Highway Administration
Hawaii Division
300 Ala Moana Blvd., Room 3202
Honolulu, Hawaii 96830

Dear Mr. Phung:

SUBJECT: Section 106 Compliance Improvements to
Kaunualii Highway Lihue to West of Maluhia Road
County of Kauai, Hawaii

Thank you for your transmittal on the proposal to widen Kaunualii Highway and for working with our office throughout the project as well as providing public input documentation. We concur with the determination of "no historic properties adversely affected" regarding Lihue Mill, Lihue Public Cemetery, Kiloahana, the residence on Kiloahana and the Grove Farm Administrative Building, since road widening will occur to the opposite sides of these properties.

Since Hoonanea Overpass Bridge will be retained as a pedestrian bridge, we concur that the road widening will have no adverse effect as long as the bridge is maintained. Regarding the house in German Hill, we concur that the house would not be considered individually eligible since photographs indicate that this simple house has been altered a few times. Also, since the house is at the very edge of the district and the community supports the alternative which requires the removal of the house, we will concur with a "no historic properties adversely affected" with the stipulation that photo-documentation utilizing HABES standards be done if the house is demolished and hope that a relocation plan within the district will be successful. Please provide documentation of the attempts to relocate the house.

We further concur with the "adverse effect" determination for the Lihue Mill Bridge widening and the removal of its steel railings. As you are aware, the Advisory Council needs to be notified of the adverse effect determination and invited to participate in the consultation. If you need an example of a notification letter or if you have further questions, please call Tania Moy at 692-8730. We look forward to working with you on the memorandum of agreement and its stipulations.

Aloha,

TIMOTHY E. JOHNS
State Historic Preservation Officer

TM:gb

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HAWAII DIVISION

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U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moana Blvd., Room 3-306
BOX 50206
Honolulu, HI 96850
June 14, 2000

REPLY REFER TO
HEC-HI

2

- Office of Hawaiian Affairs
- State of Hawaii Department of Hawaiian Home Lands
- Historic Hawaii Foundation
- Kauai Historic Preservation Review Commission (KHPRC)
- Kauai Historical Society

A public meeting was also held on January 13, 2000, to discuss the project's impacts to historic properties and a presentation was made at a regular meeting of the KHPRC on February 2, 2000. An official public hearing for the subject project was held on May 25, 2000.

The draft Memorandum of Agreement (MOA) and the draft environmental assessment are enclosed for the Council's review and comment. The draft MOA outlines the steps to be taken to mitigate the adverse effect. We welcome any comments that the Council may have on the format or the content of the MOA.

Please contact me at (808) 541-2700, extension 305, if there are any questions. Thank you for your assistance and cooperation.

Sincerely yours,

Pat V. Phung
Pat V. Phung, P.E.
Transportation Engineer

Enclosures: Draft environmental assessment
Draft MOA

cc: Mr. Steve Morikawa, HDOT, HWY-K (w/o enclosures)
Mr. Glenn Ikeda, ParEn, Inc. (w/o enclosures)
Mr. Jason Yazawa, PBQD (w/o enclosures)
Ms. Tonia Moy, SHPO (w/o enclosures)

Ms. Mary Ann Naber
Advisory Council on Historic Preservation
The Old Post Office Building
1100 Pennsylvania Avenue, N.W., #809
Washington, D.C. 20004

Dear Ms. Naber:

Subject: Notification of Adverse Effect
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii

In accordance with Section 106 of the National Historic Preservation Act, we are notifying the Council that the Federal Highway Administration (FHWA), in cooperation with the Hawaii Department of Transportation (HDOT), will have an adverse effect on the Lihue Mill Bridge during the construction of the subject project.

The undertaking is a project to widen Kaunualii Highway from Lihue to west of Maluhia Road, a distance of approximately 12 kilometers (7.5 miles). Within these limits, Kaunualii Highway would be converted from a two-lane undivided roadway to a four-lane divided roadway. To avoid and minimize certain resources, the widening would occur alternately on the north or south sides of the existing road.

The FHWA and the HDOT have been coordinating with the State Historic Preservation Officer (SHPO) since late summer 1998. On March 28, 2000, the SHPO concurred with the FHWA that the subject project will have an adverse effect determination on the Lihue Mill Bridge because the build alternative would widen the bridge deck and replace its steel railings with new railings. For additional background, coordination letters with SHPO are located in Appendix B of the enclosed draft environmental assessment.

Additionally, we consulted with the following agencies to assist the FHWA and the HDOT in identifying other potential historic properties in the Area of Potential Effect (APE):

**Advisory
Council On
Historic
Preservation**

RECEIVED
JUN 27 2000
HAWAII DIVISION

The Old Post Office Building
1100 Pennsylvania Avenue, NW, #809
Washington, DC 20004

Pat V. Phung, P.E.
Federal Highway Administration, Hawaii Division
300 Ala Moana Blvd., Room 3-306
Box 50206
Honolulu, HI 96850

JUN 22 2000

RE: Improvements to Kaunualii Highway
Kauai County, Hawaii

Dear Mr. Phung:

On June 16, 2000, we received your notification and supporting documentation regarding the adverse effects of the proposed construction on Lihue Mill Bridge, a property eligible for inclusion in the National Register of Historic Places. Based upon the information you provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, of our regulations, "Protection of Historic Properties" (36 CFR Part 800) does not apply to this undertaking. Accordingly, we do not believe that our participation in the consultation to resolve adverse effects is needed. However, should circumstances change and you determine that our participation is required, please notify us.

Pursuant to 36 CFR 800.6(b)(iv), you will need to file the final Memorandum of Agreement (MOA), developed in consultation with the Hawaii State Historic Preservation Officer (SHPO), and related documentation at the conclusion of the consultation process. The filing of this MOA with the Council is required in order for FHWA to complete its compliance responsibilities under Section 106 of the National Historic Preservation Act.

Thank you for providing us with your notification of adverse effect. If you have any questions or require the further assistance of the Council, please contact MaryAnn Naber at 202/606-8505 or via eMail at manber@achp.gov.

Sincerely,

Charlene Dawn Vanden
for
Don L. Klima
Director

Office of Planning and Review

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02 22 JUN 2000 10 10 AM '00

MEMORANDUM OF AGREEMENT

Among the

**FEDERAL HIGHWAY ADMINISTRATION and the
HAWAII STATE HISTORIC PRESERVATION OFFICER**

Regarding the Replacement of the Steel Railings on Lihue Mill Bridge
for the Improvements to Kaunualii Highway, Lihue to West of Maluhia Road
Project No. 50DE-02-95

WHEREAS, the Federal Highway Administration (FHWA) has determined that Lihue Mill Bridge located on Kaunualii Highway over Nawiliwili Stream in the Lihue District on the island of Kauai is eligible for inclusion in the National Register of Historic Places (NRHP), and that the replacement of its substandard steel railings with railings that meet current safety standards and the widening of its bridge deck will have an adverse effect and FHWA has consulted with the Hawaii State Historic Preservation Officer (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) participated in the consultation and has been invited to concur in this Memorandum of Agreement (MOA); and

WHEREAS, the FHWA, the Hawaii SHPO, and the HDOT have agreed that alternatives to the replacement of the railings have been considered and found neither feasible nor prudent.

NOW, THEREFORE, the FHWA and the Hawaii SHPO agree that the replacement of the railings and the widening of the bridge deck shall be implemented in accordance with the following stipulations in order to take into account such action's effect on historic properties.

STIPULATIONS

FHWA will ensure that the following measures are implemented.

1. Prior to the replacement of the steel railings and the widening of the bridge deck of Lihue Mill Bridge (the undertaking), the HDOT shall submit photo-documentation and written documentation of the bridge using Historic American Building Survey (HABS) standards, Documentation Level III to the following agencies: (1) Hawaii SHPO; and (2) FHWA Hawaii Division.
2. The stipulated photographic documentation shall consist of photographs produced on 8" x 10" fiber-based paper prints from 4" x 5" Tri-X negatives. Both negatives and prints shall be processed with archival quality control methods. The photographic documentation shall be coordinated with SHPO.
3. The FHWA shall submit a copy of the executed MOA to the Council with the appropriate documentation pursuant to 36 CFR Section 800.11 prior to the undertaking.
4. The Kauai Historic Preservation Review Commission shall be given the opportunity to provide comments on the design of the undertaking at the preliminary and pre-final stages, and shall be asked to concur on the design during these stages.

5. Should a party to this agreement object within 30 days to any items submitted 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 request comments of the Council pursuant to 36 CFR Section 800.9. Any Council comment provided in response to such a request will be taken into account by the FHWA with reference only to the subject of the dispute; the FHWA's responsibility to carry out all actions under this agreement that are not the subjects of the dispute will remain unchanged.

6. Any party to this MOA may request that it be amended, whereupon the parties shall consult in accordance with 36 CFR Section 800 to consider such amendment.

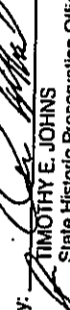
7. Should the undertaking not take place within five (5) years of the executed MOA, the parties shall consult in accordance with 36 CFR Section 800 to determine whether amendments should be considered.

Execution of this MOA by the FHWA and the Hawaii SHPO, and implementation of its terms shall be evidence that FHWA has afforded the Council the opportunity to comment on the project entitled, "Improvements to Kaunualii Highway, Lihue to West of Maluhia Road, Project No. 50DE-02-95" and its effects on historic properties, and that FHWA has taken into account the effects of the undertaking on Lihue Mill Bridge.

FEDERAL HIGHWAY ADMINISTRATION

By: 
ABRAHAM WONG
Division Administrator Date: 7/10/00

HAWAII STATE HISTORIC PRESERVATION OFFICER

By: 
TIMOTHY E. JOHNS
State Historic Preservation Officer Date: 7/10/00

CONCURRED BY:

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION

By: 
KAZU HAYASHIDA
Director of Transportation Date: 7/10/00



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96839-5440

REPLY TO
ATTENTION OF

February 23, 1999

Operations Branch

February 10, 1999

Mr. George P. Young, Chief
Operations Branch, Building 230
U.S. Army Engineer District, Honolulu
Department of the Army
Fort Shafter, Hawaii 96858-5400

Dear Mr. Young:

Re: Draft Environmental Assessment
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road (Koloa)
Kauai-Environmental Studies
Project No. 50DE-02-95

The State Department of Transportation has engaged Park Engineering to conduct preliminary engineering investigation/studies for the design of highway improvements for Kaunualii Highway. This work also includes the preparation of an environmental assessment. An advance copy of this assessment is transmitted herewith.

Your review and comments are requested. Your earliest attention and response will be appreciated.

Sincerely,

ParEn, Inc.
dba PARK ENGINEERING

Reginald Suzuka
Vice President

cc: DOT- Kauai, attn: Steve Morikawa

TC 26 Folder 595

Mr. Reginald Suzuka
Park Engineering
Kawaihāo Plaza
567 South King Street, Suite 300
Honolulu, Hawaii 96813-3036

Dear Mr. Suzuka:

This is in response to your letter dated February 10, 1999, requesting comments on the draft environmental assessment (EA) for Improvements to Kaunualii Highway. Based on the information contained in the EA, I have determined that a Department of the Army permit will be required for the project.

If you have any questions concerning this determination, please contact Mr. William Lennan of my staff at 438-9258 extension 13, and reference File No. 990000177.

Sincerely,


George P. Young, P.E.
Chief, Operations Branch



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Hawaii Division
300 Ala Moan Blvd., Room 3306
Honolulu, HI 96850
December 16, 1999

DEC 24 1999
MAIL ROOM TO
HEC-HI

Mr. George Young
U.S. Army Corps of Engineers
Honolulu Engineer District
Building 230
Fort Shafter, HI 96858

Attn: Mr. Farley Watanabe

Dear Mr. Young,

Subject: Kaunualii Highway, Lihue to West of Maluhia Road
Request to be a Cooperating Agency

The Federal Highway Administration (FHWA) in cooperation with the Hawaii Department of Transportation (HDOT) is initiating an environmental assessment (EA) for the proposed widening of Kaunualii Highway located on the island of Kauai. Since the project will require a Section 404 permit and because of the Corps's legal jurisdiction over such permits, we are requesting the Corps to be a cooperating agency.

The proposed improvements will include the widening of Kaunualii Highway from the existing two (2) lane undivided highway to a four (4) lane divided highway. The project limits extend from the intersection of Kubio Highway and Rice Street (Lihue) to west of Maluhia Road (Koloa). The project length is about 7.5 miles. The proposed alignment will generally follow the existing alignment and the widening will be only be limited to one side of the existing highway.

The Corps's involvement should only entail those areas under its jurisdiction. The following activities may occur to maximize interagency cooperation:

- The Corps will be invited to coordination meetings and field reviews.
- The Corps will be invited to assist the FHWA and the HDOT during the development of the project purpose and need.
- The Corps will be invited to assist in determining appropriate and practicable mitigation, including "all practicable measures to minimize harm."
- The FHWA and the HDOT will consult with the Corps on any relevant technical studies that will be required for the project.
- The Corps may be asked to assist the FHWA and the HDOT in identifying interest groups.
- The FHWA and the HDOT will provide the Corps with project information.
- The Corps may be asked to review the pre-draft and pre-final environmental assessment and

ensuring that the FHWA and the HDOT are informed of any changes needed to reflect the views and concerns of the cooperating agency.

- The Corps will be asked to adopt the final environmental assessment if, after an independent review, the Corps concludes that the environmental assessment satisfies NEPA and other relevant requirements.

We look forward to the Corps's response to this request and the Corps's role as a cooperating agency on this project. Please contact me at (808) 541-2700 ext. 305 if there are any questions.

Sincerely yours,

Pat V. Phung, P.E.
Transportation Engineer

cc: Mr. Steve Morikawa, HWY-K
Mr. Glenn Ikeda, ParEn, Inc.
Mr. Jason Yazawa, Parsons Brinckerhoff Quade & Douglas, Inc.

COPY



Parsons
Brinckerhoff

Pacific Tower, Suite 3000
1007 Bishop Street
Honolulu, HI 96813
808-531-7054
FAC: 808-531-2369



Mr. Saku Nakamura
Natural Resources Conservation Service
Page 2

January 31, 2000

Mr. Saku Nakamura
Soil Scientist
Natural Resources Conservation Services
U.S. Department of Agriculture
P.O. Box 50004
Honolulu, Hawaii 96850

Subject: Improvements to Kaunuaʻali Highway
Lihue to West of Māhūia Road
Farmland Protection Policy Act, Form AD-1006

Dear Mr. Nakamura:

The State of Hawaiʻi Department of Transportation, Highways Division, in cooperation with the Federal Highway Administration, is proposing to widen Kaunuaʻali Highway from a two-lane undivided roadway to a four-lane divided roadway from its intersection with Kuhio Highway in Lihue to approximately 4400 feet west of Māhūia Road. The total length of the project is approximately 7.5 miles. To be in compliance with the Farmland Protection Policy Act, we need Farmland Conversion Impact Ratings for our two current alternatives.

The first alternative would widen the highway along the entire project limits. The side of the widening would vary north or south as indicated below (see enclosed project location map):

Segment	Proposed
Lihue to Nawiliwili Road	North
Nawiliwili Road to Nani Street	South
Nani Street to Kipu Road	North
Kipu Road to vicinity of Knudsen Gap	South
Knudsen Gap to west end of project	Undetermined

The second alternative is the same as the first from Lihue to Knudsen Gap. Instead of widening on the north or south side of the highway from Knudsen Gap to the west end, the second alternative would abandon the existing Kaunuaʻali Highway route for new alignment to the north (see enclosed project location map). The reason the proposed widening in this section is undetermined under the first alternative is because a north side widening would fill wetlands, and a south side widening would displace trees that are part of the Māhūia Road tree tunnel, which is designated as "exceptional" by the County. The second alternative would avoid both resources. I am also enclosing soils maps with these alternatives.

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Engineering Excellence

The first alternative is estimated to require 86 acres of additional right-of-way. The second alternative is estimated to require 116 acres of additional right-of-way, which includes the additional right-of-way needed from Lihue to Knudsen Gap.

We would appreciate if you can provide completed Parts II through V of Form AD-1006 as soon as possible. If you have any questions, please feel free to call me at 556-2235 or e-mail at yazawa@pbworld.com.

Sincerely yours,

JASON YAZAWA
Parsons Brinckerhoff Quade & Douglas, Inc.

Enclosures: 1. Project location map with alternatives
2. Soils map with alternatives

cc. Mr. Steve Morikawa, State Department of Transportation, Highways Division (w/o attachments)
Mr. Pat Phung, Federal Highway Administration (w/o attachments)
Mr. Glenn Ikeda, ParEn, Inc. (w/o attachments)





United States
Department of
Agriculture
Natural
Resources
Conservation
Service
P.O. Box 50004
Honolulu, HI
96850

Our People...Our Islands...In Harmony

February 17, 2000

Mr. Jason Yazawa
Parsons Brinckerhoff Quade
& Douglas, Inc.
Pacific Tower, Suite 3000
1001 Bishop Street
Honolulu, HI 96813

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Farmland Protection Policy Act, Form AD-1006

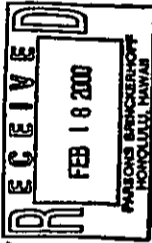
Dear Mr. Yazawa:

Enclosed is the Farmland Conversion Impact Rating (Form AD-1006) for the Kaunualii Highway improvement. We completed Parts II, IV and V.

Please call me at 541-2600 ext 133 if you have questions.

Sincerely,

Saku Nakamura
Saku Nakamura
SOIL SCIENTIST



The Natural Resources Conservation Service works hand-in-hand with the American people to conserve natural resources on private lands.

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U.S. GOVERNMENT PRINTING OFFICE: 1984-41139-124

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request		Feb 2, 2000
Name Of Project	Improvements to Kaunualii Highway	Federal Agency Involved	Federal Highway Administration	
Processed Land Use	Highway	County And State	Kauai, Hawaii	
PART II (To be completed by SCS)		Date Request Received By SCS	2/1/00	
Does the site contain prime, unique, statewide or local important farmland? (If no, the FPPA does not apply - do not complete additional parts of this form.)				
Yes	No	Average Farm Size		
		Acres	48,217	421 ac
Name Of Applicant				
Sugarcane Coffee Company				
Acres: 98,000 % 26				
Name Of Local Site Assessment System				
State of Hawaii LESA				
Date Land Evaluation Received By SCS				
2/1/00				
Alternative Site Rating				
Site A	Site B	Site C	Site D	
86	116			
PART III (To be completed by Federal Agency)				
A. Total Acres To Be Converted Directly	86			
B. Total Acres To Be Converted Indirectly	86			
C. Total Acres In Site	116			
PART IV (To be completed by SCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	39.4			
B. Total Acres Statewide And Local Important Farmland	4.6			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	20.47			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	2.2			
PART V (To be completed by SCS) Land Evaluation Criticism				
Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)				
66				
PART VI (To be completed by Federal Agency)				
Site Assessment Criteria (These criteria are established in 7 CFR 658.51b)				
1. Area In Nonurban Use	Maximum Points	15	15	
2. Perimeter In Nonurban Use	8	8		
3. Percent Of Site Being Farmed	20	0		
4. Protection Provided By State And Local Government	20	20		
5. Distance From Urban Builtup Area	NA	NA		
6. Distance To Urban Support Services	NA	NA		
7. Site Of Present Farm Unit Compared To Average	10	10		
8. Creation Of Nonfarmable Farmland	25	0		
9. Availability Of Farm Support Services	5	5		
10. On-Farm Investments	20	10		
11. Effect Of Conversion On Farm Support Services	25	0		
12. Compatibility With Existing Agricultural Use	10	0		
TOTAL SITE ASSESSMENT POINTS				
160				
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 POINTS (Total of above 2 lines)				
260				
Site Selected:				
Date Of Selection				
Reason For Selection:				
Was A Local Site Assessment Used?				
Yes <input type="checkbox"/> No <input type="checkbox"/>				

HAWAII DIVISION
FEDERAL HIGHWAY ADMINISTRATION
PROGRAMMATIC SECTION 4(f) DETERMINATION AND APPROVAL

UNDER THE
NATIONWIDE PROGRAMMATIC SECTION 4(f) EVALUATION
AND APPROVAL FOR FHWA PROJECTS THAT NECESSITATE
THE USE OF HISTORIC BRIDGES
(JULY 5, 1983)

PROJECT NUMBER: 50DE-02-95
BRIDGE NAME: Lihue Hill Bridge BRIDGE ID: 007000500403271
ROUTE: 50 MILEPOST: 0.19 to 0.25 COUNTY: Kauai

Instructions: Consult the Nationwide Section 4(f) Evaluation as it relates to the following items. Complete all items. Any response in a shaded box requires additional information prior to approval. This Section 4(f) determination will be attached to the applicable EA, FONSI, or Categorical Exclusion.

Eligibility Criteria	Yes	No
1. Will the bridge be replaced or rehabilitated with Federal Funds?	X	
2. Will the project require the "use" of a historic structure which is on, or eligible for listing on, the National Register of Historic Places?	X	
3. Has the bridge been determined to be a National Historic Landmark?		X
4. Is the environmental documentation an Environmental Impact Statement?		X

Alternatives Considered	Yes	No
5. Have all of the following alternatives, to avoid any use of the historic bridge been evaluated? A. Has the "Do Nothing" alternative been studied and been determined, for reasons of maintenance and safety, not to be feasible and prudent? B. Has the "Build on New Location Without Using the Old Bridge Alternate" been studied and been determined, for reasons of terrain, and/or adverse social, economic or environmental effects, and/or engineering and economy, and/or preservation of the old bridge, not to be feasible and prudent? C. Has rehabilitation of the existing bridge without affecting the historic integrity of the bridge been studied and has it been determined, for reasons of structural deficiency and/or geometrics, that rehabilitation is not feasible and prudent?	X X X	

Measures to Minimize Harm <small>When an item does not apply indicate with N/A</small>	Yes	No
6. Has the project included all possible planning to minimize harm, including the following: A. For bridges that are adversely affected; have the FHWA, SHPO, and ACHP reached agreement [Memorandum of Agreement (MOA)] through the Section 106 process, and this MOA includes stipulations which amount to Measures to Minimize Harm, and those measures will be incorporated in the project? B. For bridges that are to be rehabilitated to the point that the historic integrity is affected or that are to be moved or demolished have fully adequate records been made of the bridge in accordance with the Historic American Engineering Record (HAER) or other suitable means developed through the Section 106 consultation? C. For bridges that are to be replaced; has the existing bridge been made available for an alternate use, provided a responsible party agrees to maintain and preserve the bridge? <i>(If the project is a rehabilitation project, write N/A for this question.)</i> D. For bridges that are to be rehabilitated and there is an "Adverse Effect" on the historic integrity of the bridge, is the historic integrity preserved to the greatest extent possible, and consistent with unavoidable transportation needs, safety, and load requirements? <i>(If the project is a replacement project, write N/A for this question.)</i>	X	
	N/A	
	X	

Notes
1. Definition of Use: The action will impair the historic integrity of the bridge either by rehabilitation or demolition. Where the definition of impair is to diminish the qualities that made it eligible for the National Register of Historic Places. (Federal Register, Vol 48, No. 163, dated Monday, August 22, 1983)
2. Consult the Nationwide Programmatic Section 4(f) Evaluation for the generic (not prudent and feasible) reasons that might be addressed. (Federal Register, Vol 48, No. 163, dated Monday, August 22, 1983) The evaluation of alternatives for the subject project, however, must quantify those reasons as applicable and be supported by the circumstances of the project.
3. This criterion will require the advertisement and marketing of the bridge in accordance with FHWA requirements. Marketing will be addressed in programmatic Section 4(f) Evaluation and by appropriate provisions in the Memorandum of Agreement entered into between the State or local agency, FHWA, the SHPO, and the ACHP. Refer to Mr. Leathers' July 22, 1987, memorandum on the applicable requirements for preservation and marketing. Copies of the advertisement and results of marketing efforts must be furnished to FHWA prior to replacement of the historic bridge.
4. When it has been determined by FHWA in consultation with the SHPO and ACHP that the rehabilitation work will result in "No Effect" or "No Adverse Effect" on the historic integrity of the structure, the provisions of Section 4(f) Evaluation do not apply.

DETERMINATION AND APPROVAL:

Based on the environmental documentation and analysis, the results of public and agency consultation and coordination, the FHWA has determined that:

The project meets the applicability criteria set forth in the Nationwide Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges dated July 5, 1983;

All of the alternatives set forth in the Findings section of the above Nationwide Section 4(f) Evaluation have been fully evaluated. Based on the Findings, it is determined there is no feasible and prudent alternatives to the use of the Historic Bridge; and

The project complies with the Measures to Minimize Harm Section of the Nationwide Section 4(f) Evaluation; and agreement between FHWA, SHPO and ACHP has been reached.

Accordingly, the FHWA approves the proposed use of the historic bridge for construction under the above Nationwide Section 4(f) Evaluation issued on July 5, 1983.

7-31-83
Date Approved

Sgt V. Phung
Federal Highway Administration

**HAWAII DIVISION
FEDERAL HIGHWAY ADMINISTRATION
PROGRAMMATIC SECTION 4(F) DETERMINATION AND APPROVAL
UNDER THE
NATIONWIDE PROGRAMMATIC SECTION 4(F) EVALUATION
AND APPROVAL FOR FHWA PROJECTS THAT NECESSITATE
THE USE OF HISTORIC BRIDGES
(JULY 5, 1983)**

SECTION 4(F) USE OF LIHUE MILL BRIDGE

Additional Information for "No" Response in Item 6B
In accordance with the Memorandum of Agreement regarding the replacement of the steel railings of Lihue Mill Bridge, the State of Hawaii Department of Transportation has committed to photographic and written documentation of Lihue Mill Bridge using the Historic American Building Survey standards. This work will be conducted during the design phase of the project or prior to construction.

DETERMINATION AND APPROVAL:

Based on the environmental documentation and analysis, the results of public and agency consultation and coordination, the FHWA has determined that:

The project meets the applicability criteria set forth in the Nationwide Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges dated July 5, 1983;

All of the alternatives set forth in the Findings section of the above Nationwide Section 4(f) Evaluation have been fully evaluated. Based on the Findings, it is determined there is no feasible and prudent alternatives to the use of the Historic Bridge; and

The project complies with the Measures to Minimize Harm Section of the Nationwide Section 4(f) Evaluation; and agreement between FHWA, SHPO and ACHP has been reached.

Accordingly, the FHWA approves the proposed use of the historic bridge for construction under the above Nationwide Section 4(f) Evaluation issued on July 5, 1983.

7-31-83

Date Approved

Pat V. Shumy
Federal Highway Administration

**HAWAII DIVISION
FEDERAL HIGHWAY ADMINISTRATION AND APPROVAL
PROGRAMMATIC SECTION 4(F) DETERMINATION AND APPROVAL
UNDER THE
NATIONWIDE PROGRAMMATIC SECTION 4(F) EVALUATION
AND APPROVAL FOR FHWA PROJECTS THAT NECESSITATE
THE USE OF HISTORIC BRIDGES
(JULY 5, 1983)**

SECTION 4(F) USE OF LIHUE MILL BRIDGE

Additional information for "No" Response in Item 68 in accordance with the Memorandum of Agreement regarding the replacement of the steel railings of Lihue Mill Bridge, the State of Hawaii Department of Transportation has committed to photographic and written documentation of Lihue Mill Bridge using the Historic American Building Survey standards. This work will be conducted during the design phase of the project or prior to construction.

APPENDIX C

Traffic Assessment Report

Vehicle Incident Statistics

**KAUMUALII HIGHWAY IMPROVEMENTS
LIHUE TO WEST OF MALUHIA ROAD
PROJECT NO. 50DE-02-95
TRAFFIC ASSESSMENT REPORT
KAUAI, HAWAII**

May 2000

Prepared for:
ParEn, Inc.



Austin, Tsutsumi & Associates, Inc.
Civil Engineers • Surveyors
501 Summer Street, Suite 521
Honolulu, Hawaii 96817-5031
Telephone: (808) 533-3646
Facsimile: (808) 526-1267
Honolulu • Waikaha, Hawaii

**KAUMUALII HIGHWAY IMPROVEMENTS
LIHUE TO WEST OF MALUHIA ROAD
PROJECT NO. 50DE-02-95
TRAFFIC ASSESSMENT REPORT
KAUAI, HAWAII**

Prepared for
ParEn, Inc.

Prepared by
Austin, Tsutsumi & Associates, Inc.
Engineers • Surveyors
Honolulu, Hawaii

May 2000

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(continued)

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**TRAFFIC ASSESSMENT REPORT FOR
KAUMUALII HIGHWAY IMPROVEMENTS
LIHUE TO WEST OF MALUHIA ROAD
KAUAI, HAWAII
PROJECT NO. 50DE-02-95**

I. INTRODUCTION

Kaumualii Highway is a 33-mile long primary State arterial highway, designated as Route 50. It serves the south and west communities of the Island of Kauai, from Lihue to Mana. These communities include Poipu, Koloa, Lawai, Kalaheo, Eleele, Port Allen, Hanapepe, Waimea, Kekaha, Mana and the Pacific Missile Range at Barking Sands.

The Hawaii Department of Transportation (HDOT) has proposed to widen Kaumualii Highway from a 2-lane highway to a 4-lane divided highway between Lihue and west of Maluhia Road because of increased traffic and associated traffic congestion.

For the purposes of this report, Kaumualii Highway will be described as an east-west highway, with the east direction being to Lihue and the west direction being to the Lawai/Kalaheo area. Figure 1 shows the project location.

A. Purpose and Scope

The purpose of this study is to evaluate the existing traffic impacts and operating conditions on the existing 2-lane roadway section, and its future Year 2020 traffic impacts and operating conditions on the 2-lane and proposed 4-lane divided roadway sections of Kaumualii Highway between Rice Street and west of Maluhia Road. Only the existing conditions and the conditions in the Year 2020 without and with the proposed 4-lane highway widening will be examined; no other alternatives were considered.

B. Project Description

HDOT proposes to widen Kaunuauli Highway from a 2-lane highway to a 4-lane divided highway between Rice Street in Lihue and west of Maluhia Road, a distance of approximately 7.5 miles.

In the rural areas, the proposed widening will provide a 4-lane divided highway with two 12-foot lanes in each direction, a 40-foot median which includes a 12-foot left-turn storage lane and a 4-foot paved left shoulder, a 10-foot paved right shoulder which includes a 5-foot bikeway, modifying or installing traffic signal systems, paved gutters, guardrails, and other improvements.

In urban areas, the proposed widening is modified by providing an 8-foot paved right shoulder, curbs and gutters, a 26.5 to 32-foot curbed median which includes a 12-foot left-turn storage lane, a 10-foot bikeway and walkway, modifying traffic signal systems and other improvements.

The major intersections which will be affected are Nawiliwili Road, Kalepa Street, the new Nuhou Street, Quarry Road at Huleia, Puhi Road, and Maluhia Road. Other minor street intersections will also be affected.

Alternative alignment studies have been conducted to determine how the widened highway will be constructed in relation to the existing highway alignment. Alternatives include adding the additional lanes on the mauka or mauka side of the existing highway. Depending on topographical and geographical requirements, it is likely than an alignment that combines mauka and makai improvements will be selected.

II. TRAFFIC ANALYSIS

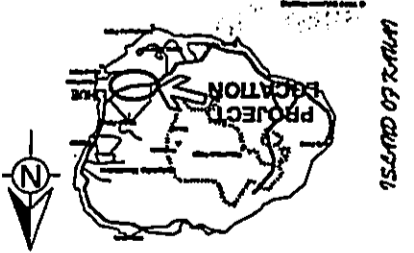
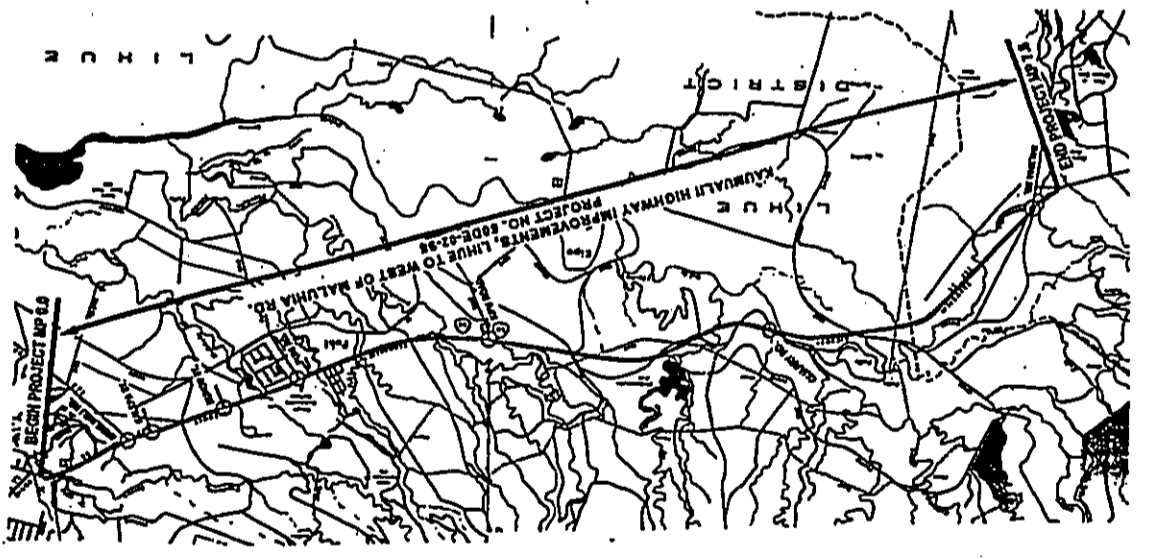
Existing traffic conditions were analyzed based on field counts taken on March 31 and April 1, 1998 and traffic survey data from HDOT's publication, "Traffic Survey Data Island of Kauai 1997."


HDOT's publication, "Kauai Long-Range Land Transportation Plan," (LRLTP) May 1997, was reviewed for future conditions along this route.

A. Existing Conditions

1. Roadway System

Kaunuauli Highway, Route 50, is a primary State arterial, running east-west between Lihue and west Kauai. The highway is the primary, and only, access route between Lihue and the west Kauai communities of Poipu, Koloa, Lawai, Kalaheo, Hanapepe, Eleele, Port Allen, Waimea, Kekaha, Mana and the Pacific Missile Range at Barking Sands.



 AUSTIN, TSUTSUMI & ASSOC., INC. ENGINEERS • SURVEYORS	TRAFFIC ASSESSMENT REPORT KAUNUAULI HIGHWAY IMPROVEMENTS LIHUE TO WEST OF MALUHIA ROAD PROJECT LOCATION	FIGURE 1
	2	

2. Traffic Volumes

a. Traffic Data

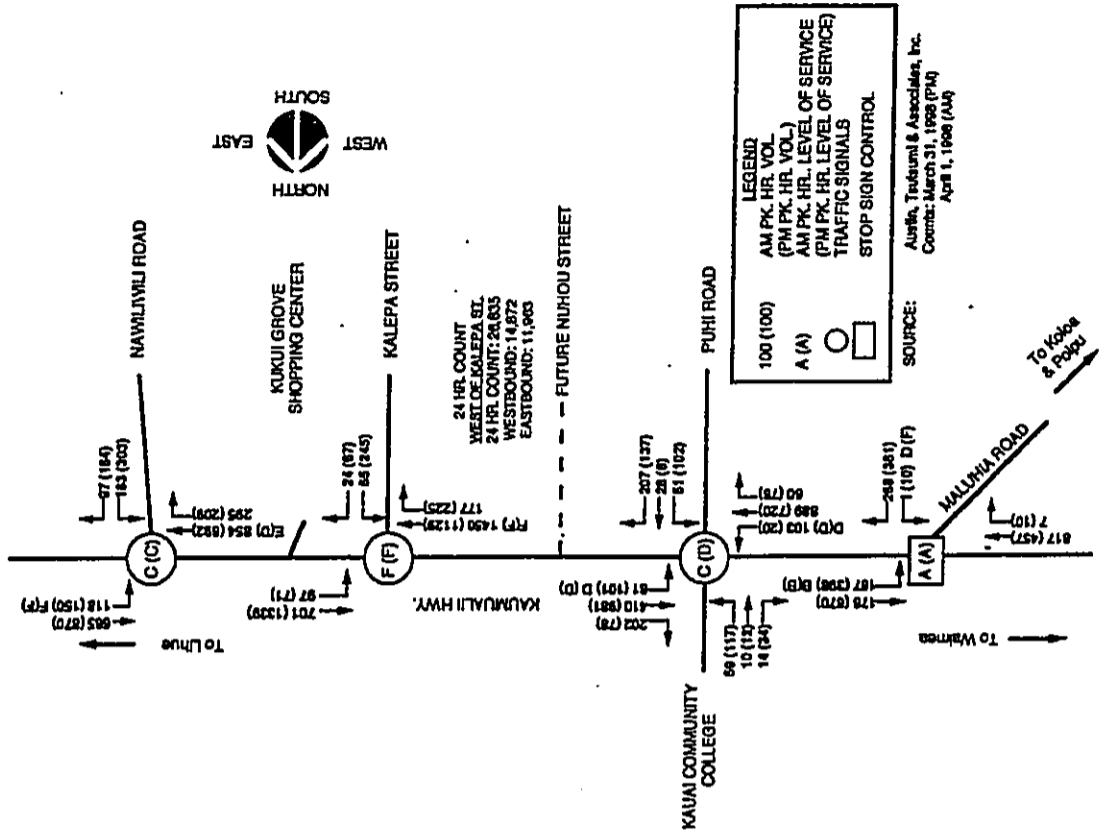
Traffic turning movement counts were obtained during the AM and PM peak period of traffic on March 31 and April 1, 1998 at the following intersections: Nawiliwili Road, Kalepa Street, Puhi Road and Maluhia Road. In addition, a 24-hour mechanical count was taken at a location just west of the intersection of Kalepa Street on the same dates. Figure 2 shows the traffic count and Figure 2a schematically shows the traffic lane configuration at the major intersections.

b. Kaunuaʻi Highway

The LRLTP determined that traffic on Kaunuaʻi Highway east of Maluhia Road increased by 26% from 1988 to 1994 and that the highway is operating at Level of Service (LOS) F. The report indicated that average daily two-way traffic volume on Kaunuaʻi Highway near Puhi was 28,143 vehicles per day (vpd) in 1995; traffic counts taken over a 24-hour period from March 31 to April 1, 1998 at a location just west of Kalepa Street counted 26,835 vehicles. The difference in counts is less than 5% and is probably due to seasonal and daily variations in traffic flow.

Analysis of the existing AM and PM peak hours of traffic indicates that the section of Kaunuaʻi Highway between Lihue and Puhi operates at LOS F, confirming the conclusion of the LRLTP and on-site observations. Field observations confirmed that there is a heavy volume of eastbound vehicles during the AM peak period of traffic from the vicinity of Huleia Bridge to Lihue. The PM peak period of traffic congestion is primarily at the Kalepa Street, Nawiliwili Road, and at Puhi Road signalized intersections.

Because of this heavy traffic, and often congested conditions from Puhi to Lihue, the State Highways Division and the County of Kauai paved a series of local and agricultural roads from Kipu Road to Kalepa Street and Nawiliwili Road, to serve as a bypass to Lihue during periods of extreme highway congestion. Because the Puhi Bypass is a narrow, winding and longer route, it is not used much by commuters except during such conditions.



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IBAEFC ASSESSMENT REPORT
KAUNUAʻI HIGHWAY WIDENING

EXISTING TRAFFIC CONDITIONS

FIGURE 2

3. Major Intersection Traffic Conditions
a. Kaunuaʻali Highway at Nawiliwili Road

Nawiliwili Road is a minor State arterial road between Kaunuaʻali Highway and the Nawiliwili Harbor area. It is also the major access to the Kukui Grove Shopping Center, located on an adjacent property on the south side of Kaunuaʻali Highway. It is a 4-lane divided road from Kaunuaʻali Highway to Pikeake Street; thereafter and to Waapa Road, it is a 2-lane, undivided road.

The intersection of Kaunuaʻali Highway at Nawiliwili Road is a T-intersection with a 3-phase traffic signal system that is interconnected to the traffic signal system at the intersection of Kaunuaʻali Highway and Kalepa Street, approximately 800 feet west. The Kaunuaʻali Highway and Nawiliwili Road intersection presently operates at LOS D during the AM and PM peak hours of traffic.

The traffic signal system provides a protected left-turn phase for westbound Kaunuaʻali Highway left turns onto Nawiliwili Road.

In the Lhuē-bound direction, an auxiliary lane between Kalepa Street and Nawiliwili Road is provided on Kaunuaʻali Highway. At the Nawiliwili Road intersection, the auxiliary lane is forced to make a right turn.

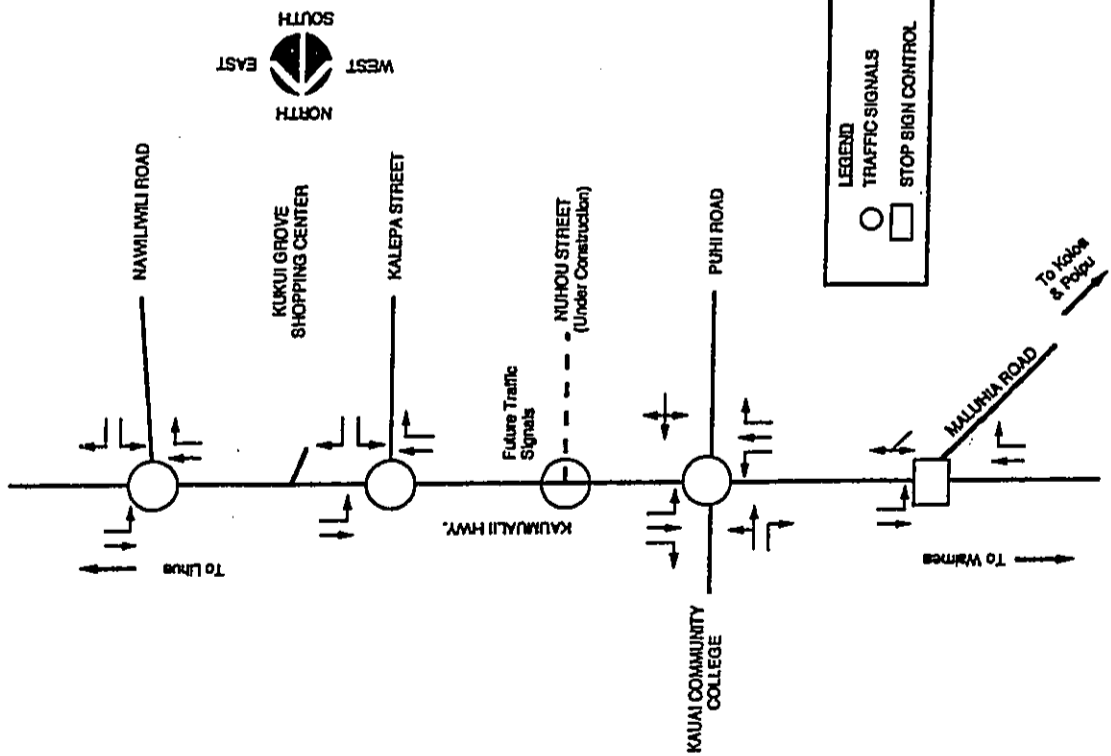
Observations of the traffic flow on Kaunuaʻali Highway from Nawiliwili Road to Kalepa Street indicate that there is a need to optimize the operation and coordination of these two traffic signals. The signal phasing and timing appear to interrupt the smooth flow of traffic on Kaunuaʻali Highway and thus cause backups, particularly during the AM and PM peak periods.

b. Kaunuaʻali Highway at Kalepa Street

Kalepa Street is a 4-lane, undivided County collector road servicing residential and commercial areas makai of Kaunuaʻali Highway. The Kukui Grove Shopping Center also has access on Kalepa Street.

The intersection of Kaunuaʻali Highway at Kalepa Street is a T-intersection with a 3-phase traffic signal system. The intersection presently operates at LOS F during the AM and PM peak hours of traffic.

The traffic signal system provides a protected left-turn phase for westbound Kaunuaʻali Highway, onto Kalepa Street. As previously mentioned, the traffic signal systems at this intersection and Nawiliwili Road need to be optimized.



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TRAFFIC ASSESSMENT REPORT
KAUNUAʻALI HIGHWAY WIDENING
EXISTING TRAFFIC LANES

FIGURE
2a

c. Kaunualii Highway at Puhi Road/Kaual Community College

The Kaunualii Highway, Puhi Road and Kaual Community College (KCC) intersection is a 4-legged intersection, with Puhi Road being the south leg and the KCC access road being the north leg. There are left-turn storage lanes and right-turn deceleration lanes for Kaunualii Highway traffic turning into side streets.

A 3-phase traffic signal system is provided at this intersection. Protected left turns from Kaunualii Highway into Puhi Road and into KCC are provided.

The traffic signal at this intersection should be optimized. The intersection operates at LOS D during the AM and PM peak hours of traffic.

d. Kaunualii Highway at Maluhia Road

The Kaunualii Highway at Maluhia Road intersection is a T-intersection with a STOP sign control for Maluhia Road traffic. Maluhia Road is an arterial County collector road providing access to the communities of Koloa and Poipu. Maluhia Road is known locally as the "tree tunnel road" because of the swamp mahogany trees that line both sides of the road at this intersection.

Maluhia Road intersects Kaunualii Highway at an approximately 30 degree acute angle. All approaches to the intersection are channelized and the westbound Kaunualii Highway traffic has a left-turn storage lane for motorists turning into Maluhia Road.

A 1997 State Highways Division traffic count indicates that 8,420 vpd utilize Maluhia Road. The intersection operates at LOS A during the AM and PM peak hours of traffic.

4. Other Intersections

a. Kaunualii Highway at Hoomana Road

Hoomana Road and an access road to Lihue Plantation's mauka mill site are located on the Lihue side of the Lihue Plantation bridge on Kaunualii Highway near the beginning of this project. Hoomana Road is a private road serving approximately 23 residences and a church; the Lihue Plantation mill road provides access to its mauka mill facilities.

b. Quarry Road at Huleia Bridge

The Quarry Road at Huleia Bridge is a private road providing access to a rock quarry and batching plant. While no traffic counts were taken at this intersection, the quarry and batching plant operations are still active at the time of this writing.

c. Kaunualii Highway at Kipu Road

Portions of Kipu Road, Hulemalu Road and Halehaku Road, which have been improved and paved, provides a bypass route (temporary Puhi Bypass) to Nawiliwili Road and Lihue. This roadway is relatively narrow and winding; therefore, it is primarily utilized during the AM peak hour of traffic when Kaunualii Highway is heavily congested.

Traffic counts taken by the HDOT indicate that the route is lightly used under normal conditions.

d. Other Accesses

There are a number of other private accesses, such as driveways, haul cane roads, etc. which access the highway. These accesses may range from infrequent use, such as haul cane roads, to frequent use, such as the access road to Kiohaha Museum and Gaylord's Restaurant.

The new Nuhou Street intersection between Puhi Road and Kalepa Street is currently under construction. This new street is planned to be completed in the Year 2000 and will provide access to the Improved Nuhou Street being constructed by Grove Farm Properties, Inc. (GFP).

B. Future Conditions

1. Introduction

Traffic projections for the Design Year (Year 2020) are based on the Kauai LRLTP prepared by Austin, Trutman & Associates, Inc. This study was a complete update of the previous study prepared in 1991.

As described in the report, "The transportation plan was developed through the Countywide Transportation Planning Process (CTPP), a cooperative, comprehensive and continuing transportation planning effort involving the State of Hawaii and the...counties. The participating agencies include the State Department of Transportation, County of Kauai Department of Public Works and the County of Kauai Planning Department." In addition, community and other agencies participated in the preparation of the report. Therefore, the Kauai LRLTP stands as a comprehensive document for the land transportation needs of the County of Kauai.

The County of Kauai suffered severe damages from Hurricane Iniki in September 1992. As a result of the damages caused by the hurricane, there was a resultant dislocation in population and employment. Kauai has been in the process of recovery

for the past several years. This recovery process and continued growth in areas such as Popou, Kotoa and other west Kauai areas will create increased demands on Kaunuaui Highway.

Grove Farm Properties, Inc. is developing a large 596-acre area between Puhi and Nawiliwili. Pacific Planning & Engineering, Inc. prepared a traffic impact assessment report for GFP in 1994 to examine the impacts of the development of GFP's Lihue/Puhi Project District. The study examined the effects of, among other items, the construction of new roads within the development, the construction of a new intersection connecting the future Nuhoou Street with Kaunuaui Highway and other traffic impacts on existing roadways within the study area. The report projected completion of the development in Year 2000; however, the status of total development is not known at this time.

Figure 3 shows the LOS for the Year 2020 without the highway improvements.

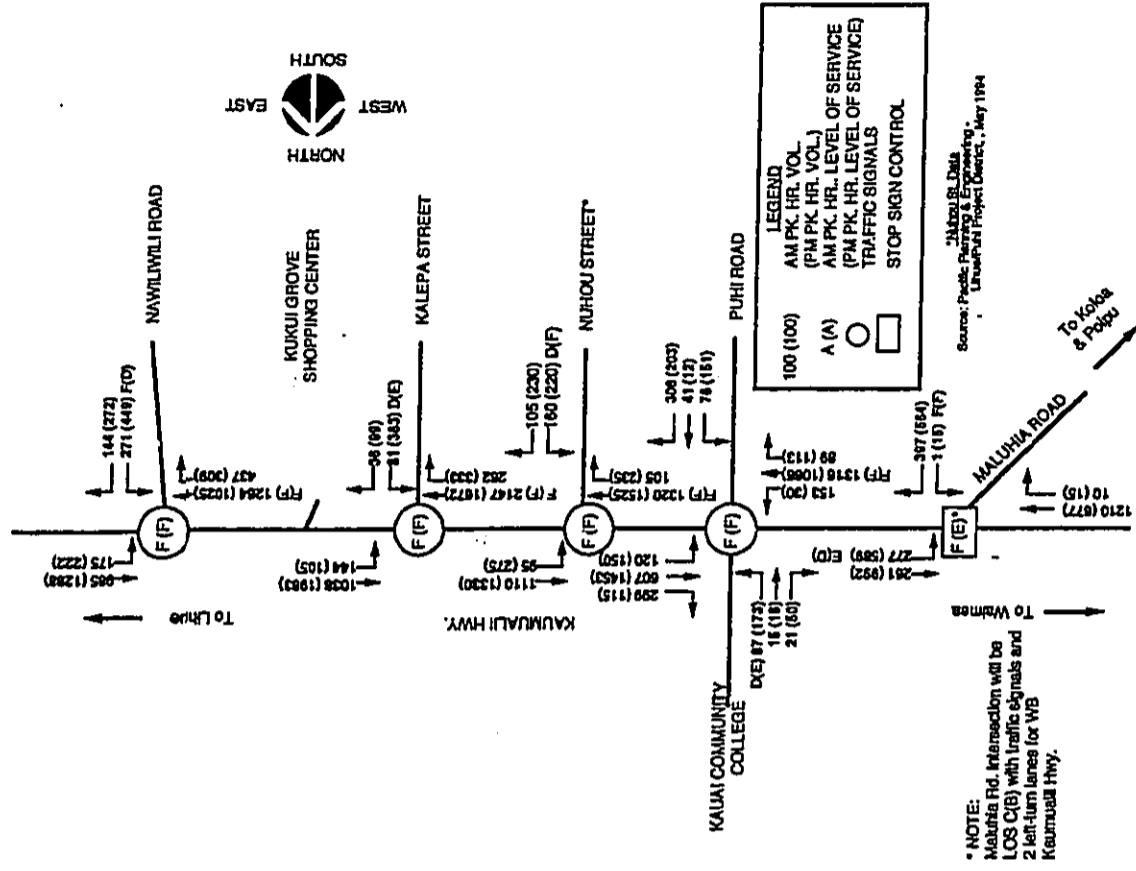
2. Future Traffic Volumes and Levels of Service

a. Kaunuaui Highway

The LRLTP concluded that traffic deficiencies for the Year 2020 on Kauai would primarily occur between Waimea on the west and Kapaa on the east. Kaunuaui Highway is already operating at over capacity and traffic is forecasted to increase to an average daily traffic (ADT) volume of approximately 37,600 vpd by Year 2020. The LRLTP recommended improvements to Kaunuaui Highway and its major intersections as high priority. Table 1 shows the Base Years levels of service:

Table 1
Kaunuaui Highway West of Kalepa Street
Base Years Levels of Service (LOS)
No Improvements

Time	Base Year 1998 Two Lanes	Base Year 2020 Two Lanes
AM Peak Hour of Traffic	F	F
PM Peak Hour of Traffic	F	F



* NOTE: Mokuia Rd. Intersection will be LOS C(B) with traffic signals and 2 left-turn lanes for WB Kaunuaui Hwy.

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TRAFFIC ASSESSMENT REPORT
KAUNUAUI HIGHWAY WIDENING
YEAR 2020 TRAFFIC CONDITIONS
WITHOUT IMPROVEMENTS

FIGURE
3

b. Nawiliwili Road Intersection

Nawiliwili Road will continue to be a minor arterial connecting Nawiliwili Bay and Kaunuaia Highway in this area. Most of the adjacent areas are developed or are in the process of being developed. GFP's Puhi project will involve extensive development along the west side of Nawiliwili Road.

c. Kalepa Street Intersection

The area served by Kalepa Street is presently only partially built and will continue to grow as additional residential and commercial areas are developed. Its intersection with Kaunuaia Highway is already signalized and coordinated with the traffic signal system at Nawiliwili Road; future improvements should include improving the timing and optimization of the traffic signal system with Nawiliwili Road.

d. Maluhia Road Intersection

Maluhia Road serves the major resort area of Poipu. As the major link between Poipu and Kaunuaia Highway for travel to and from the Lihue area, traffic will continue to increase as the resort area grows. Traffic is projected to increase to 24,300 vpd in Year 2020. Maluhia Road is recommended to be widened to a 4-lane undivided highway. Without the widening, the road is projected to operate at LOS "F".

The increased traffic on Maluhia Road will warrant the installation of a traffic signal system at its intersection with Kaunuaia Highway, particularly with the heavy left-turn demand from westbound Kaunuaia Highway into Maluhia Road.

e. Other Intersections

1) New Nuhou Street Connection

Construction of the new Nuhou Street connection on Kaunuaia Highway, between Puhi Road and Kalepa Street, is presently planned for completion in 2000. The connector road will provide access to GFP's developments between Puhi and Nawiliwili Road and will eventually provide an alternate route between Puhi and Lihue.

A temporary span-wire traffic signal system is being installed at the new intersection with Kaunuaia Highway.

2) Quarry Road

The Quarry Road adjacent to Huleia Stream will continue to be used in the near future. Because the road serves a quarry and concrete batching

plant, it is expected that heavy concrete mixers and aggregate trucks will continue to require access on Kaunuaia Highway. Therefore, acceleration and deceleration lanes should be provided for both directions of travel on Kaunuaia Highway. Because the highway grade in the Lihue-bound direction is 3.05%, a median acceleration lane should be provided for Lihue-bound trucks. Even then, these heavily loaded trucks may not be able to accelerate to highway speeds on the uphill grade and will have to merge into traffic and move to the right lane. Due to the 3.74% grade on Kaunuaia Highway, the truck-climbing lane in the westbound direction should be retained.

3. Proposed Highway Improvements

The following are recommended improvements for the proposed project:

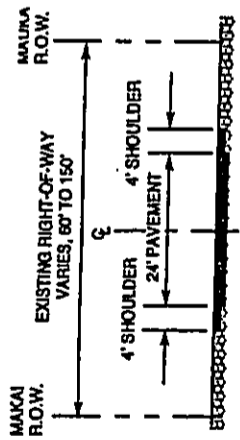
a. Kaunuaia Highway

The LRLTP concluded that Kaunuaia Highway should be widened to a 4-lane divided highway, with the possibility for a 6-lane divided highway in selected segments, depending on whether other proposed roadway improvements are implemented. Initial improvements should be to construct a 4-lane divided highway.

The proposed widening under this project will provide a 4-lane divided highway consisting of two 12-foot lanes in each direction, a 40-foot wide median and 10-foot paved right shoulders. Figure 4 shows the typical roadway sections and Figure 5 shows the levels of service at the major intersections with the recommended improvements. Table 2 shows the level of service for Kaunuaia Highway with the highway improvements.

Table 2
Kaunuaia Highway
Year 2020 Levels of Service (LOS)
With Widening to 4-Lane Divided Highway

Time	Year 2020 Eastbound	Year 2020 Westbound
AM Peak Hour of Traffic	B	A
PM Peak Hour of Traffic	B	B



EXISTING HIGHWAY TYPICAL SECTION NO SCALE

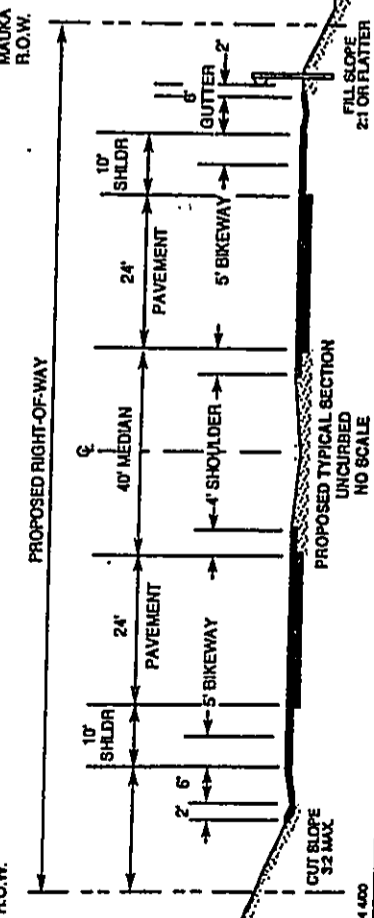
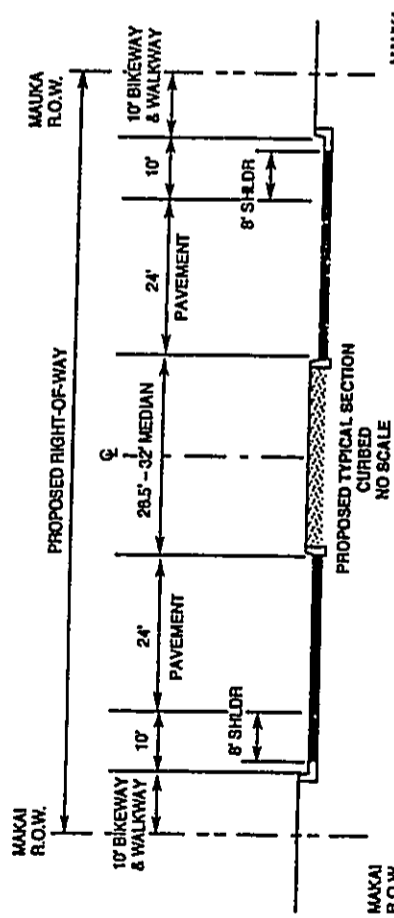
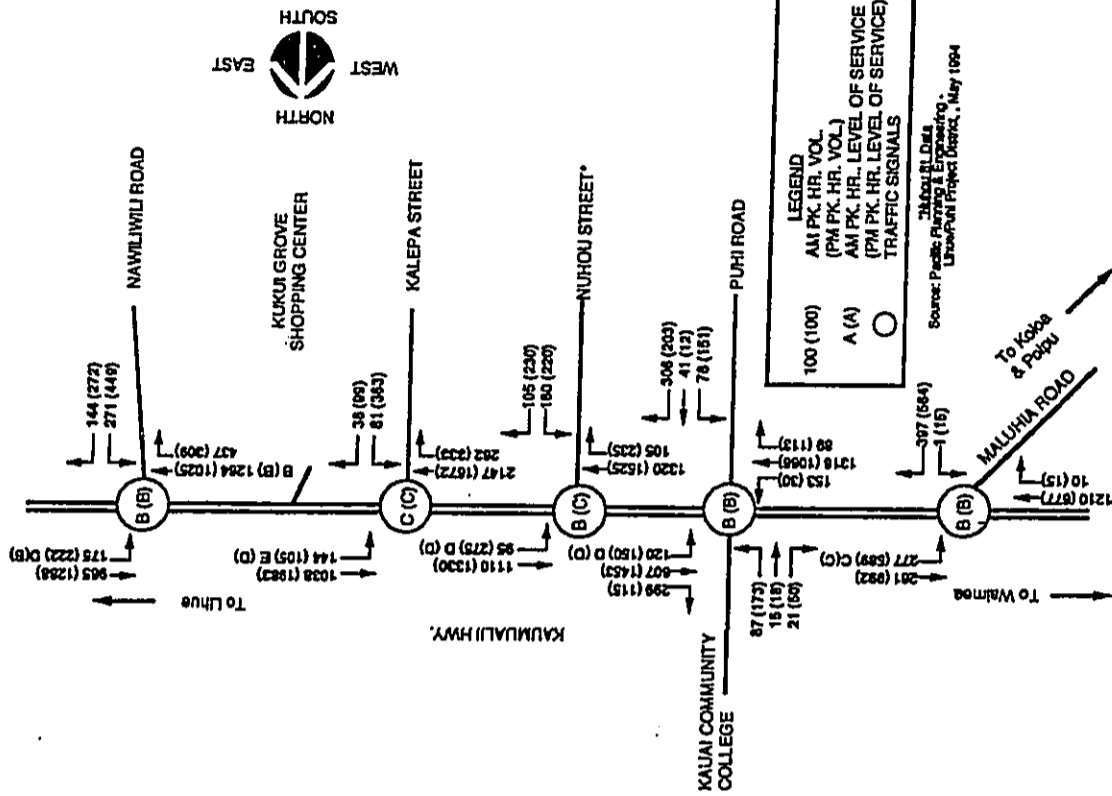


FIG. 4-400

	AUSTIN, ISHITSUMI & ASSOC., INC. ENGINEERS • SURVEYORS	TRAFFIC ASSESSMENT REPORT KAUMUALI HIGHWAY WIDENING TYPICAL SECTIONS	4
	TRAFFIC ASSESSMENT REPORT KAUMUALI HIGHWAY WIDENING		FIGURE



LEGEND

- 100 (100) AM PK. HR. VOL. (PM PK. HR. VOL.)
- A (A) AM PK. HR. LEVEL OF SERVICE (PM PK. HR. LEVEL OF SERVICE)
- TRAFFIC SIGNALS

Source: Public Works Planning & Engineering, Department of Public Works, May 1994

	AUSTIN, ISHITSUMI & ASSOC., INC. ENGINEERS • SURVEYORS	TRAFFIC ASSESSMENT REPORT KAUMUALI HIGHWAY WIDENING YEAR 2020 TRAFFIC CONDITIONS WITH IMPROVEMENTS	5
	TRAFFIC ASSESSMENT REPORT KAUMUALI HIGHWAY WIDENING		FIGURE

b. Major Intersections

All major intersections will be channelized, with median deceleration and left-turn storage lanes, and right-turn in deceleration and right-turn out acceleration lanes. All speed change lanes shall have a 180-foot taper. For purposes of this report, the length of the speed change lanes shall include the 180-foot taper.

At signalized intersections, a 180-foot taper should be provided for side street traffic turning right into Kaunuaia Highway.

Table 3 summarizes the intersection LOS for the major intersections for 1998 traffic conditions, 2020 traffic conditions without improvements and 2020 traffic conditions with the highway widening and intersection improvements.

Table 3
 Summary of Intersection Levels of Service (LOS)

INTERSECTING STREET	1998 Existing		2020 With No Improvements		2020 With Improvements	
	AM	PM	AM	PM	AM	PM
Nawiliwili Road	C	C	F	F	B	B
Kalepa Street	F	F	F	F	C	C
Nuhou Street (New)	N/A	N/A	F	F	B	C
Puhi Road/KCC	C	D	F	F	B	B
Maluhia Road	A	A	F	E	B	B

1) Nawiliwili Road

Nawiliwili Road will remain classified as a minor arterial connecting Kaunuaia Highway to the Nawiliwili Bay area. It also continues to serve as a major access route to the Kukui Grove Shopping Center.

The existing traffic signal system will require reconstruction due to the road widening. The traffic signal system must be inter-connected with the Kalepa Street traffic signal system. The present interconnection is on overhead wires attached to existing utility poles; the interconnect cable should be installed underground.

The present interconnected traffic signal system consists of the intersections of Nawiliwili Road/Kaunuaia Highway and Kalepa Street/Kaunuaia Highway. The master controller is located on Kalepa Street. The new Nuhou Street traffic signal system will be inter-connected to the master controller to provide coordinated traffic signal operation on Kaunuaia Highway.

A 500-foot long left-turn storage and deceleration lane is recommended for westbound vehicles on Kaunuaia Highway turning left into Nawiliwili Road. Double left-turn lanes should be provided for northbound Nawiliwili Road motorists going west on Kaunuaia Highway and a separate right-turn lane for motorists proceeding east on Kaunuaia Highway.

A double left-turn lane for westbound Kaunuaia Highway left turns into Nawiliwili Road will be necessary when the GFP Puhi development is built out. Therefore, space should be allotted in the median or in the highway right-of-way for the additional lane in the future. Figure 6 shows a proposed layout.

2) Kalepa Street

Recommended improvements at the Kalepa Street intersection are similar to the recommendations for Nawiliwili Road. The traffic signal system at this intersection will require reconstruction and interconnection with the Nawiliwili Road traffic signal system. Additionally, a 500-foot right-turn deceleration lane is recommended for eastbound Kaunuaia Highway traffic turning into Kalepa Street.

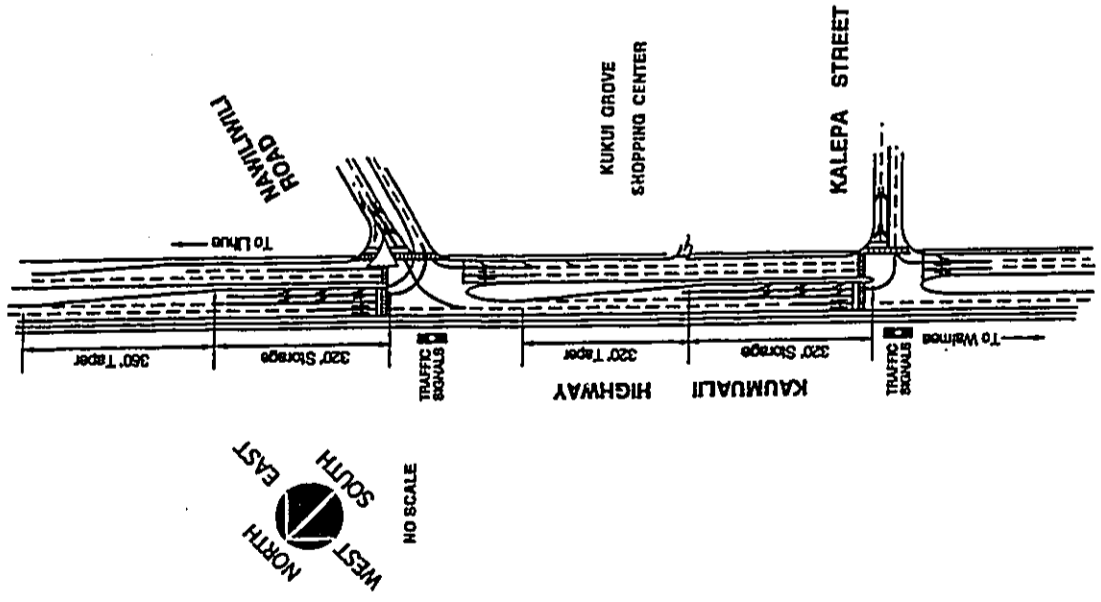
This road also serves the Kukui Grove Shopping Center, although to a lesser degree than the Nawiliwili Road accesses. Multi- and single-family residential areas are also located off Kalepa Street.

The Kalepa Street northbound approach to the Kaunuaia Highway intersection should be designed as a 2-lane approach to Kaunuaia Highway, with one lane for left turns into westbound Kaunuaia Highway and one right-turn lane into Kaunuaia Highway eastbound. The intersection should be designed to accommodate possible future double left-turn lanes from Kalepa Street onto Kaunuaia Highway.

A double left-turn lane for westbound Kaunuaia Highway into Kalepa Street will be necessary when the GFP Puhi development is built out. Therefore, space should be allotted in the median or in the highway right-of-way for the additional lane in the future. Figure 6 shows a proposed layout.

3) Nuhou Street

The new Nuhou Street will be available for traffic in late 2000. The roadway will connect to Kaunuaia Highway at a T-intersection between Nani Street and Kalepa Street. Nuhou Street will be a 4-lane undivided county collector



street serving Grove Farm's approximately 600-acre Lihue/Puhi Development.

Grove Farm is constructing a new temporary span-wire traffic signal system at this intersection. The traffic signals will have to be reconstructed to a permanent underground system when Kaunualii Highway is widened.

4) Puhi Road

The improvements should include providing left-turn storage lanes for each approach on Kaunualii Highway as well as right-turn deceleration lanes. Kauai Community College's exit roadway should be reconstructed to provide a longer 2-lane storage for exiting traffic.

5) Quarry Road


The following are alternatives for the Quarry Road and Kaunualii Highway intersection:

a) Alternate 1

Trucks turning left from Quarry Road going in the Lihue direction will be climbing a 1,000-foot grade of 3.05%. The AASHTO "Green Book" estimates that a typical heavy truck would attain a speed of about 24 miles per hour at this grade and distance and about another 1,500 feet at near level grade to attain a final speed of 40 mph. Since the truck is merging into the left, or fast, lane of the highway, it is especially critical that the merging speed of the truck be at nearly the speed of mainline traffic. It may be necessary to construct a 2,000-foot median acceleration/truck-climbing lane. Estimated cost for constructing the median acceleration lane is \$300,000.

b) Alternate 2

A second alternative is to realign the southbound access of Quarry Road to Kaunualii Highway, Lihue-bound, by reconstructing the existing old roadway on the east bank of Huleia Stream under Huleia Bridge and constructing an on-ramp to the eastbound lanes of the new Kaunualii Highway. Construction of a retaining wall on the stream side of the road will probably be required to accommodate the heavy traffic loads. This alternative permits the slow-moving, heavy trucks to merge into the right, or slow, lane of the highway. This alternative is estimated to cost about \$1.0 million.

 AUSTIN, TEJEDA & ASSOCIATES, INC. ENGINEERS & SURVEYORS	TRAFFIC ASSESSMENT REPORT KAUNUALII HIGHWAY IMPROVEMENTS PROPOSED DOUBLE LEFT TURNS AT NAWILIWILI RD. AND AT KALEPA ST.	FIGURE 6
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An advantage to this alternative is that the reconstructed roadway can serve as a grade-separated roadway connecting areas on both sides of the highway if there are future uses in the area.

c) **Alternate 3**

A third alternative is to install a traffic actuated signal system at the intersection to control traffic movements in and out of Quarry Road. Although there are no traffic signal warrants in the Manual on Uniform Traffic Control Devices (MUTCD) based on probable safety hazards, it may be possible to justify the signals due to heavy, slow-moving trucks turning left from Quarry Road having to merge into the fast traffic lane on an upgrade, and merging again into the slower right traffic lane. Safety considerations have been used to justify installation of traffic signals at major haul cane crossings where there is fast traffic, such as on Haleakala Highway on Maui. The traffic signal system should be a 3-phase, traffic-actuated signal to allow protected left turns into and out of Quarry Road. It is anticipated that delays to highway traffic would be minimal, with proper timing for the left-turning traffic, and would permit trucks exiting Quarry Road to merge immediately into the right lane of Kaunuaui Highway. Estimated cost for a traffic signal system is \$170,000.

6) **Kipu Bypass**

The Kipu Bypass presently serves as a "safety valve" to permit Lihue-bound traffic to bypass severe congestion, which may occur on Kaunuaui Highway between Puhi and Lihue. The need for this road will be diminished with the implementation of this widening project.

It is anticipated that the Kipu Bypass and Kipu Road will revert to their previous function as rural roads providing access to the mostly agricultural Kipu area.

7) **Maluhia Road**

The T-intersection of Kaunuaui Highway at Maluhia Road should be redesigned to provide an approximately 90-degree angle of intersection. The intersection design should be sensitive to the community's desire that the

"tree tunnel" effect on Maluhia Road be preserved. The LRLTP forecasts that Maluhia Road traffic will increase by the Year 2020 to warrant its widening to a 4-lane road.

Traffic volumes for left turns from westbound Kaunuaui Highway into southbound Maluhia Road are projected to exceed 600 vehicles per hour in the PM peak hour of traffic in 2020; therefore, traffic signals are warranted and should be installed. The intersection should be improved by constructing a 480-foot long double left-turn deceleration/storage lane plus taper for westbound Kaunuaui Highway.

Eastbound Kaunuaui Highway should have right-turn deceleration and acceleration lanes at Maluhia Road.

Sirealights are recommended to illuminate the intersection at night, due to its location on a horizontal curve and at the crest of a grade. Maluhia Road is also the main entry to the Koba/Poipu resort areas, a major tourist destination, and many drivers may be unfamiliar with the area when driving at night.

8) **Minor Intersections**

Most of the minor intersections serve small residential areas, cane haul roads, or other light traffic generators. Most are also T-intersections. These intersections should have median left-turn deceleration/storage lanes and median left-turn acceleration lanes.

In the more rural segments of the highway, the number of accesses should be limited and opportunities for median U-turns can be incorporated in the design to provide access to adjacent private roads and driveways.

III. **CONCLUSIONS**

The traffic projections indicate that improvements are needed for this segment of Kaunuaui Highway. The improvements should include widening the highway and retiming traffic signals for more efficient operations.

The "Kauai Long-Range Land Transportation Plan", May 1997, has identified the improvement of Kaunuaui Highway from Maluhia Road to Lihue as a high priority project.

IV. RECOMMENDATIONS

The following highway intersection improvements are recommended for implementation, based on the assumption that Kaunuaʻii Highway is widened to a 4-lane divided highway and as resources become available:

A. Reconstruct the Nawiliwili Road Intersection

1. Reconstruct existing traffic signal system to accommodate new intersection design.
2. Construct median left-turn storage lane for westbound Kaunuaʻii Highway traffic turning into Nawiliwili Road.
3. Construct acceleration lane on Kaunuaʻii Highway for right turns from Nawiliwili Road.

B. Reconstruct the Kalepa Street Intersection

1. Replace span-wire traffic signal system with a new traffic signal system with underground wiring. Interconnect system with Nawiliwili Road and Nuhou Street traffic signal systems.
2. Construct median left-turn storage lane for westbound Kaunuaʻii Highway traffic turning into Kalepa Street. Provide right-of-way to accommodate an additional left-turn lane in the future.
3. Construct deceleration lane on Kaunuaʻii Highway for right turns into Kalepa Street.

C. Reconstruct the Nuhou Street/Kaunuaʻii Highway Intersection

1. Replace the existing span-wire traffic signal system with a new traffic signal system, traffic signal standards and underground wiring. Interconnect the traffic signal system with Kalepa Street.
2. Construct median left-turn storage lane for westbound Kaunuaʻii Highway traffic turning into Nuhou Street.
3. Construct deceleration and acceleration lanes on Kaunuaʻii Highway at Nuhou Street.

D. Reconstruct the Puhī Road/Kaunuaʻii Community College (KCC) Intersection and Traffic Signal System

1. Construct left-turn storage lanes in the median for traffic on Kaunuaʻii Highway.
2. Widen the Puhī Road approach to the intersection to provide 2 approach lanes at the intersection.
3. Redesign the KCC access road to provide 3 lanes approaching the traffic signals – a left-turn lane, a through lane and a right-turn lane. Widen the exit road to 2 lanes and lengthen it to provide additional storage for exiting traffic.

4. Construct right-turn deceleration and acceleration lanes on Kaunuaʻii Highway for Puhī Road and the KCC access road.

E. Reconstruct the Quarry Road Intersection

The alternatives for reconstructing the intersection are:

Alternative 1: Construct at-grade intersection with median left-turn storage/deceleration lane for eastbound vehicles turning left into Quarry Road. Construct a 2000-foot long median truck-climbing and acceleration lane for southbound left turns into eastbound Kaunuaʻii Highway. Estimated construction cost is \$300,000.

Alternative 2: Reconstruct and improve the roadway under the Huleia Stream Bridge of Kaunuaʻii Highway to support truck traffic and construct an on-ramp to the eastbound lanes of the highway. The roadway improvements may require the construction/reconstruction of retaining walls along the stream embankment fronting the roadway. Estimated construction cost is \$1.0 million.

Alternative 3: Construct an at-grade intersection with 3-phase traffic-actuated traffic signals with eastbound median left-turn storage/deceleration lane. Estimated construction cost is \$170,000.

The selection of the improvement alternative may be dependent on available funding, the expected operating life of the existing quarry and batching plant, and future use of the areas served by this intersection.

In addition to the above alternatives, the following improvements are recommended for all alternatives:

1. Channelize the Quarry Road side of the intersection to provide easier right turns from Quarry Road into Kaunuaʻii Highway.
2. Construct a deceleration and acceleration lane on Kaunuaʻii Highway for traffic turning right at Quarry Road.

F. Reconstruct the Maluhia Road Intersection

1. Realign the Maluhia Road approach to Kaunuaʻii Highway to improve the angle of intersection to approximately 90 degrees.
2. Install a 3-phase traffic signal system.
3. Construct double left-turn deceleration/storage lanes for westbound Kaunuaʻii Highway traffic turning left into Maluhia Road.

4. Construct right-turn deceleration and acceleration lanes on eastbound Kaunualii Highway at Matuhia Road.
5. Install street lights at intersection.
6. Design improvements at this intersection, and particularly on Maluhia Road, with consideration of the community's desire to retain the appearance of the area as much as possible.

G. Construct Minor Street Intersections to Provide Access to/from Kaunualii Highway, as follows:

1. Humane Society Road: Full access
2. Anonui Street: Full access
3. Nani Street: Full access
4. Uaui Road: Full access
5. Hoomana Road: Full access
6. Hala Street: Left turn in, right turn in and out
7. Driveway to Kiihona Museum and Gaylord's Restaurant: Full access

Full access provides for all turning movements into and out of the side streets at their intersections with Kaunualii Highway.

- H. Construct haul cane road accesses and crossings as required. The accesses should be designed to accommodate expected traffic. In most cases, the haul cane road accesses will be used infrequently, therefore, 40-foot wide median openings without deceleration and acceleration lanes, similar to a U-turn design, will be appropriate.**

During periods of heavy use, such as harvesting, the plantations should install temporary warning signs on all highway approaches and control traffic with off-duty police officers.

1. Construct 40-foot wide median U-turns at approximately 1/2 to 1-mile intervals, where required, to provide access to minor driveways and accesses. These U-turns could be coordinated and provided at haul cane road accesses.

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Highway Capacity Manual, Special Report 209, 3rd Edition, Transportation Research Board, National Research Council, 1994.

Manual on Uniform Traffic Control Devices for Streets and Highways, Federal Highway Administration, Department of Transportation, 1988.

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Appendices are not included. They can be reviewed at the State of Hawaii
Department of Transportation, Highway Division, Kaula District office.

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Appendix C VEHICLE INCIDENT STATISTICS

Year	Type of Incident		Total incidents
	Major	Minor	
Kaunualii Highway from 0 to 11 kilometer (7 mile) marker			
1995	9	13	22
1996	5	8	13
1997	8	25	33
1998	8	24	32
1999	15	13	28
2000*	5	8	13
Kuhio Highway from 0 to 16 kilometer (10 mile) marker			
1995	76	224	300
1996	97	225	322
1997	87	249	336
1998	100	223	323
1999	100	233	333
2000*	56	143	199

Note: *As of July 3, 2000.

Source: County of Kauai Police Department

APPENDIX D

Air Quality Analysis Report

**AIR QUALITY STUDY
FOR THE PROPOSED
IMPROVEMENTS TO KAUMUALII HIGHWAY
LIHUE TO WEST OF MALUHIA ROAD**

KAUAI, HAWAII

Prepared for:

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1.0 SUMMARY

The Hawaii Department of Transportation, Highways Division, is proposing to improve Kaunualii Highway on the island of Kauai from Lihue and to approximately 4,400 feet west of Maluhia Road. The proposed project would widen this section of Kaunualii Highway from two lanes to four lanes to help alleviate traffic congestion in the area. This study examines the potential short- and long-term air quality impacts that could occur as a result of construction and use of the proposed facilities and suggests mitigative measures to reduce any potential air quality impacts where possible and appropriate.

Both federal and state standards have been established to maintain ambient air quality. At the present time, seven parameters are regulated including: particulate matter, sulfur dioxide, hydrogen sulfide, nitrogen dioxide, carbon monoxide, ozone and lead. Hawaii air quality standards are more stringent than the comparable national standards except for those for sulfur dioxide and for particulate matter.

Regional and local climate together with the amount and type of human activity generally dictate the air quality of a given location. The climate of the project area is very much affected by its windward and coastal situation. Winds are predominantly trade winds from the northeast except for occasional periods when kona storms may generate strong winds from the south or when the trade winds are weak and landbreeze-seabreeze circulations may develop. Wind speeds typically vary between about 5 and 15 miles per hour providing relatively good ventilation much of the time. Temperatures in the windward Kauai area are generally very moderate with average daily temperatures ranging from about 65°F

to 85°F. The extreme minimum temperature recorded at nearby Lihue is 50°F, while the extreme maximum temperature is 90°F. Monthly rainfall has been measured to vary from as little as a trace to as much as 25 inches or more. Average annual rainfall amounts to about 43 inches with summer months being the driest.

Except for occasional dust and smoke from nearby agricultural operations, the present air quality of the project area is relatively good. Air quality data from the nearby Lihue monitoring station operated by the state indicate that both state and national air quality standards for particulate matter, the sole pollutant measured there, are currently being met. It is likely, however, that carbon monoxide concentrations may occasionally exceed the more stringent state standards near traffic-congested areas.

If the proposed project is given the necessary approvals to proceed, it may be inevitable that some short- and long-term impacts on air quality will occur either directly or indirectly as a consequence of project construction and use. Short-term impacts from fugitive dust will likely occur during the project construction phase. To a lesser extent, exhaust emissions from stationary and mobile construction equipment, from the disruption of traffic, and from workers' vehicles may also affect air quality during the period of construction. State air pollution control regulations require that there be no visible fugitive dust emissions at the property line. Hence, an effective dust control plan must be implemented to ensure compliance with state regulations. Fugitive dust emissions can be controlled to a large extent by watering of active work areas, using wind screens, keeping adjacent paved roads clean, and by covering of open-bodied trucks. Other dust control measures could include limiting the area that can be disturbed at any given time and/or mulching or chemically

stabilizing inactive areas that have been worked. Paving and landscaping of project areas early in the construction schedule will also reduce dust emissions. Monitoring dust during the period of construction could be considered as a means to evaluate the effectiveness of the project dust control program. Exhaust emissions can be mitigated by moving construction equipment and workers to and from the project site during off-peak traffic hours and by keeping road closures during peak-traffic hours to a minimum.

After construction, the widened roadway will improve traffic flow in the area, which should reduce traffic-related air pollution emissions, but the widened roadway will tend to concentrate more traffic near intersections along the project corridor. To assess the impact of the roadway widening project, an air quality modeling study was undertaken to estimate current ambient concentrations of carbon monoxide at four intersections in the project corridor and to predict future levels both with and without the proposed project at the same four intersections. During worst-case conditions, model results indicated that present 1-hour and 8-hour carbon monoxide concentrations are probably well within the national ambient air quality standards but that slight exceedances of the more stringent state standards are possible at the three signalized intersections (Nawiliwili Road, Kalepa Street and Puhi Road). The highest concentrations were predicted to occur near Puhi Road.

In the year 2020 without the project, carbon monoxide concentrations were predicted to increase at all four locations studied, particularly at the intersection of Kaunualii Highway and Maluhia Road. Similar to the existing case, the location with the highest worst-case concentration was the intersection of Kaunualii Highway and Puhi Road. In this scenario, all four

locations studied were predicted to exceed the state standards but comply with the national standards.

With the project in the year 2020, worst-case carbon monoxide concentrations within the project corridor were predicted to decrease at all four locations studied compared to the without-project case. The predicted decrease was especially pronounced at the intersection of Kaunualii Highway and Maluhia Road. The location with the highest concentration continued to be the intersection of Kaunualii Highway and Puhi Road. Worst-case concentrations near this intersection as well as at two of the other three locations evaluated exceeded the allowable concentrations specified in the state standards. All locations studied were found to meet the less stringent national standards.

It should be noted that, because the state standards for carbon monoxide are set at such stringent levels, it is likely that the standards are currently exceeded at many locations in the state that have even moderate traffic volumes.

Options available to mitigate long-term, traffic-related air pollution are generally to further improve roadways, to reduce individual vehicular emissions or to reduce traffic. However, in some cases, improving roadways may actually result in reduced air quality at some locations. Reducing individual vehicular emissions is probably beyond the scope of the proposed project. Attempting to reduce traffic volumes through the promotion of bus service and carpooling and by staggering local school and business hours could serve to reduce air quality impacts, but this mitigation measure is generally only partially successful. Another potential mitigation measure might be to provide added buffer zones between new walkways and roadways where space is

available. Technically, however, the public would have to somehow be excluded from the buffer zones.

In view of the fact that the predicted worst-case carbon monoxide concentrations with the project are well within the national ambient air quality standards, that concentrations will be reduced with the project (i.e., air quality will improve), and that the more stringent state standards are probably currently exceeded near many roadway intersections in the state where traffic volumes are moderate to high, implementing air quality mitigation measures for long-term traffic-related impacts from the proposed project is probably unnecessary and unwarranted.

2.0 INTRODUCTION AND PROJECT DESCRIPTION

The Hawaii Department of Transportation, Highways Division (HDOT), is proposing to improve an approximately 7.5-mile section of Kaunualii Highway on the island of Kauai from Lihue to approximately 4,400 feet west of Maluhia Road (see in Figure 1). Kaunualii Highway is a major State primary arterial, designated Route 50, running east-west between Lihue and West Kauai. The highway is the only, or primary, access route between Lihue and the west Kauai communities of Poipu, Koloa, Lawai, Eleele, Port Allen, Hanapepe, Kalaeo, Waimea, Kekaha, Mana and the Pacific Missile Range at Barking Sands.

Presently, Kaunualii Highway between Lihue and Maluhia Road is a two-lane roadway. During the past ten years, traffic volumes on Kaunualii Highway have increased substantially, and major intersections operate at over or near capacity during peak traffic periods. Congested traffic conditions are expected to grow worse during the next several years.

To help alleviate the congested traffic conditions, HDOT is proposing to widen Kaunualii Highway to four lanes. The improved roadway would become a four-lane divided highway with 12-foot lanes, 10-foot right-side shoulders, 40-foot median, 12-foot median left-turn storage and acceleration lanes, and right-turn deceleration and acceleration lanes at major intersections.

The purpose of this study is to describe existing air quality in the project area and to assess the potential short-term and long-term air quality impacts that could result from construction and use of the proposed facilities. Measures to mitigate these impacts are suggested where possible and appropriate.

3.0 AMBIENT AIR QUALITY STANDARDS

Ambient concentrations of air pollution are regulated by both national and state ambient air quality standards (AAQS). National AAQS are specified in Section 40, Part 50 of the Code of Federal Regulations (CFR), while State of Hawaii AAQS are defined in Chapter 11-59 of the Hawaii Administrative Rules. Table 1 summarizes both the national and the state AAQS that are specified in the cited documents. As indicated in the table, national and state AAQS have been established for particulate matter, sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone and lead. The state has also set a standard for hydrogen sulfide. National AAQS are stated in terms of both primary and secondary standards for most of the regulated air pollutants. National primary standards are designed to protect the public health with an "adequate margin of safety". National secondary standards, on the other hand, define levels of air quality necessary to protect the public welfare from "any known or anticipated adverse effects

of a pollutant". Secondary public welfare impacts may include such effects as decreased visibility, diminished comfort levels, or other potential injury to the natural or man-made environment, e.g., soiling of materials, damage to vegetation or other economic damage. In contrast to the national AAQS, Hawaii State AAQS are given in terms of a single standard that is designed "to protect public health and welfare and to prevent the significant deterioration of air quality".

Each of the regulated air pollutants has the potential to create or exacerbate some form of adverse health effect or to produce environmental degradation when present in sufficiently high concentration for prolonged periods of time. The AAQS specify a maximum allowable concentration for a given air pollutant for one or more averaging times to prevent harmful effects. Averaging times vary from one hour to one year depending on the pollutant and type of exposure necessary to cause adverse effects. In the case of the short-term (i.e., 1- to 24-hour) AAQS, both national and state standards allow a specified number of exceedances each year.

The Hawaii AAQS are in some cases considerably more stringent than the comparable national AAQS. In particular, the Hawaii 1-hour AAQS for carbon monoxide is four times more stringent than the comparable national limit, and the state 1-hour limit for ozone is more than two times as stringent as the national 1-hour standard. The national 1-hour ozone standard will be phased out (pending court appeal) the next few years in favor of the new (and more stringent) 8-hour standard.

The Hawaii AAQS for sulfur dioxide were relaxed in 1986 to make the state standards essentially the same as the national limits.

In 1993, the state also revised its particulate standards to follow those set by the federal government. During 1997, the federal government again revised its standards for particulate, but the new standards have been challenged in federal court. To date, the Hawaii Department of Health has not updated the state particulate standards.

4.0 REGIONAL AND LOCAL CLIMATOLOGY

Regional and local climatology significantly affect the air quality of a given location. Wind, temperature, atmospheric turbulence, mixing height and rainfall all influence air quality. Although the climate of Hawaii is relatively moderate throughout most of the state, significant differences in these parameters may occur from one location to another. Most differences in regional and local climates within the state are caused by the mountainous topography.

Hawaii lies well within the belt of northeasterly trade winds generated by the semi-permanent Pacific high pressure cell to the north and east of the islands. These tradewinds are one of the outstanding features of Kauai's climate along with equable temperatures from day to day and season to season and the marked variation in rainfall from the wet to the dry season and from place to place.

The nearest long-term wind data available for the project area are collected at the Lihue Airport located about 4 miles to the east of the project area. These data are probably at least semi-representative of the project corridor. As indicated in Table 2, Lihue Airport has a mean annual wind speed of 12.3 mph and a

northeast annual prevailing wind direction [1]. Monthly wind speeds and directions are similar to the annual averages. Winds from the south are infrequent occurring only a few days during the year and mostly in winter in association with kona storms.

Air pollution emissions from motor vehicles, the formation of photochemical smog and smoke plume rise all depend in part on air temperature. Colder temperatures tend to result in higher emissions of contaminants from automobiles but lower concentrations of photochemical smog and ground-level concentrations of air pollution from stack sources. In Hawaii, the annual and daily variation of temperature depend to a large degree on elevation above sea level, distance inland and exposure to the trade winds. Average temperatures at locations near sea level generally are warmer than those at higher elevations. Areas exposed to the trade winds tend to have the least temperature variation, while inland and leeward areas often have the most. At nearby Lihue Airport, average annual daily minimum and maximum temperatures are 68°F and 81°F, respectively. The extreme minimum temperature on record is 50°F, and the extreme maximum is 90°F [1]. Temperatures along the project corridor are probably very similar.

Small scale, random motions in the atmosphere (turbulence) cause air pollutants to be dispersed as a function of distance or time from the point of emission. Turbulence is caused by both mechanical and thermal forces in the atmosphere. It is often measured and described in terms of Pasquill-Gifford stability class. Stability class 1 is the most turbulent and class 6 the least. Thus, air pollution dissipates the best during stability class 1 conditions and the worst when stability class 6 prevails. In the eastern Kauai area, stability classes 5 or 6 occasionally occur,

developing during clear, calm nighttime or early morning hours when temperature inversions form due to radiational cooling or to drainage flow from the mountainous interior of the island. Stability classes 1 through 4 occur during the daytime, depending mainly on the amount of cloud cover and incoming solar radiation and the onset and extent of the sea breeze.

Mixing height is defined as the height above the surface through which relatively vigorous vertical mixing occurs. Low mixing heights can result in high ground-level air pollution concentrations because contaminants emitted from or near the surface can become trapped within the mixing layer. In Hawaii, minimum mixing heights tend to be high because of mechanical mixing caused by the trade winds and because of the temperature moderating effect of the surrounding ocean. Low mixing heights may sometimes occur, however, at inland locations and even at times along coastal areas early in the morning following a clear, cool, windless night. Coastal areas also may experience low mixing levels during sea breeze conditions when cooler ocean air rushes in over warmer land. Mixing heights in Hawaii typically are above 3000 feet (1000 meters).

Rainfall can have a beneficial effect on the air quality of an area in that it helps to suppress fugitive dust emissions, and it also may "washout" gaseous contaminants that are water soluble. Rainfall in Hawaii is highly variable depending on elevation and on location with respect to the trade wind. The Lihue area has a moderately wet climate. Normal annual rainfall for Lihue Airport is about 43 inches [1]. Three-fourths of this total, on the average, falls during the wet season of October through April. Widespread rainstorms, which account for much of the

precipitation, occur most frequently during this period. January is the wettest month, averaging over six inches.

5.0 PRESENT AIR QUALITY

Present air quality in the project area is mostly affected by air pollutants from vehicular, industrial, natural and/or agricultural sources. Table 3 presents an air pollutant emission summary for the island of Kauai for calendar year 1993. The emission rates shown in the table pertain to manmade emissions only, i.e., emissions from natural sources are not included. As suggested in the table, much of the particulate emissions on Kauai originate from area sources, such as the mineral products industry and agriculture. Sulfur oxides are emitted almost exclusively by point sources, such as power plants and other fuel-burning industries. Nitrogen oxides emissions emanate predominantly from area sources (mostly motor vehicle traffic), but industrial point sources also contribute a significant share. The majority of carbon monoxide emissions occur from area sources (motor vehicle traffic), while hydrocarbons are emitted mainly from point sources.

The State Department of Health (DOH) operates a network of air quality monitoring stations at various locations around the state. Each station, however, typically does not monitor the full complement of air quality parameters. Very little data are available for the island of Kauai. The DOH monitoring station closest to the project corridor is located at Lihue. PM-10 (particulate matter less than or equal to 10 microns in diameter) is the only pollutant monitored at this location. The annual maximum 24-hour average PM-10 concentrations monitored at Lihue ranged from 31 to 41 $\mu\text{g}/\text{m}^3$ between 1994 and 1998 [2]. Average

annual concentrations for this period were approximately 20 $\mu\text{g}/\text{m}^3$. All values reported were well within the state and national AAQS.

Although very little ambient air quality data are available to characterize existing conditions, due to the relatively small number of emission sources in the project area, it is likely that all ambient air quality standards are currently being met except perhaps for some areas near agricultural sources or near traffic congested locations. Present worst-case concentrations of carbon monoxide due to traffic-related emissions in the project area are estimated later in this study using computerized emissions and atmospheric dispersion models.

6.0 SHORT-TERM IMPACTS OF PROJECT

Almost any type of development may involve short-term direct and indirect impacts on air quality during project construction. For a project of this nature, there are two potential types of air pollution emissions that could directly result in short-term air quality impacts during construction: (1) fugitive dust from vehicle movement and soil excavation; and (2) exhaust emissions from on-site construction equipment. Indirectly, there also could be short-term impacts from slow-moving construction equipment traveling to and from the project site and from the disruption of normal traffic flow caused by roadway closures.

Fugitive dust emissions may arise from the grading and dirt-moving activities associated with land clearing and preparation work. The emission rate for fugitive dust emissions from construction activities is difficult to estimate accurately because of its elusive nature of emission and because the potential for its generation varies greatly depending upon the

type of soil at the construction site, the amount and type of dirt-disturbing activity taking place, the moisture content of exposed soil in work areas, and the wind speed. The EPA [3] has provided a rough estimate for uncontrolled fugitive dust emissions from construction activity of 1.2 tons per acre per month under conditions of "medium" activity, moderate soil silt content (30%), and precipitation/evaporation (P/E) index of 50. Uncontrolled fugitive dust emissions in the project area would likely be somewhere near this level. In any case, State of Hawaii Air Pollution Control Regulations [4] prohibit visible emissions of fugitive dust. Thus, an effective dust control plan for the project construction phase is essential.

Adequate control of fugitive dust in active construction areas can usually be accomplished by the establishment of a frequent watering program. In sensitive or dust-prone areas, limiting the area that can be disturbed at any given time and/or using wind screens may also be required. Wind erosion of inactive areas can be controlled by mulching or by the use of chemical soil stabilizers. Haul trucks tracking dirt onto paved streets from unpaved areas is oftentimes a significant source of dust in construction areas. Some means to alleviate this problem, such as tire washing or road cleaning, may be appropriate. Control regulations further stipulate that open-bodied trucks be covered at all times when in motion if they are transporting wind-erodible materials. Establishment of landscaping as early in the construction schedule as possible can also lower the potential for fugitive dust emissions.

On-site mobile and stationary construction equipment also will emit air pollutants from engine exhausts. The largest of this equipment is usually diesel-powered. Nitrogen oxides emissions from diesel engines can be relatively high compared to gasoline-

powered equipment, but the standard for nitrogen dioxide is set on an annual basis and is not likely to be violated by short-term construction equipment emissions. Carbon monoxide emissions from diesel engines, on the other hand, are low and should be relatively insignificant compared to vehicular emissions on nearby roadways.

Project construction activities at times will also likely obstruct the normal flow of traffic causing overall vehicular emissions in the project area to be increased. The only means to alleviate this problem will be to attempt to keep roadways open during peak traffic hours and to move heavy construction equipment to and from construction areas during periods of low traffic volume.

7.0 LONG-TERM IMPACTS OF PROJECT

After construction is completed, the proposed roadway improvements should result in a more efficient flow of motor vehicle traffic in the project vicinity and, in general, bring about favorable long-term impacts on ambient air quality at most locations in the immediate area. Potential microscale air quality impacts may occur, however, at locations where roadways have been widened or traffic signals have been installed. In most traffic-related air quality assessments, roadway intersections are one of the primary concerns because of traffic congestion and because of the increase in vehicular emissions associated with traffic queuing. To investigate potential air quality impacts near roadway intersections within the project area, microscale analyses were performed for selected locations using computerized emission and atmospheric dispersion models to estimate worst-case ambient carbon monoxide concentrations. Carbon monoxide was selected for the microscale analyses because it is both the most stable and the

most abundant of the pollutants generated by motor vehicles. Furthermore, carbon monoxide air pollution is generally considered to be a microscale problem that can be addressed locally to some extent, whereas other air pollutants most often are regional issues that cannot be addressed by a single roadway improvement project.

For this project, three scenarios were selected for the carbon monoxide modeling study: (1) year 1998 with present conditions, (2) year 2020 (the project planning year) without the project, and (3) year 2020 with the project. To begin the modeling study, critical receptor areas in the vicinity of the project were identified for analysis. Generally speaking, roadway intersections are the primary concern because of traffic congestion and because of the increase in vehicular emissions associated with traffic queuing. For this study, four key intersections identified by the project traffic engineers were selected for air quality analysis. These included the following:

- Kaunualii Highway at Nawiliwili Road
- Kaunualii Highway at Kalepa Street
- Kaunualii Highway at Puhi Road
- Kaunualii Highway at Maluhia Road

Intersection configurations and traffic conditions at each of these locations are detailed in the traffic impact report for the project [5].

The main objective of the modeling study was to estimate maximum 1-hour average carbon monoxide concentrations for each of the three scenarios studied. To evaluate the significance of the estimated concentrations, a comparison of the predicted values for

each scenario can be made. Comparison of the estimated values to the national and state AAQS was also used to provide another measure of significance.

Maximum carbon monoxide concentrations typically coincide with peak traffic periods. The traffic impact assessment report evaluated morning and afternoon peak traffic periods. These same periods were evaluated in the air quality impact assessment.

The EPA computer model MOBILE5A [6] was used to calculate vehicular carbon monoxide emissions for each year studied. One of the key inputs to MOBILE5A is vehicle mix. Unless very detailed information is available, national average values are typically assumed, which is what was used for the present study. Based on national average vehicle mix figures, the present vehicle mix in the project area was estimated to be 62.2% light-duty gasoline-powered automobiles, 27.2% light-duty gasoline-powered trucks and vans, 3.1% heavy-duty gasoline-powered vehicles, 0.3% light-duty diesel-powered vehicles, 6.5% heavy-duty diesel-powered trucks and buses, and 0.7% motorcycles. For the future scenarios studied, the estimated national average vehicle mix percentages were substantially the same except that light-duty gasoline-powered automobiles decreased by about 5% while light-duty gasoline-powered trucks and vans increased by about the same amount.

Other key inputs to the MOBILE5A emission model are the cold/hot start fractions. Motor vehicles operating in a cold- or hot-start mode emit excess air pollution. Typically, motor vehicles reach stabilized operating temperatures after about 4 miles of driving. For traffic operating on surface roadways within the project area, it was assumed that about 21 percent of all vehicles would be operating in the cold-start mode and that about 27 percent would

be operating in the hot-start mode. These are typical default (national average) values.

Ambient temperatures of 59 and 68 degrees F were used for morning and afternoon peak-hour emission computations, respectively. These are conservative assumptions since morning/afternoon ambient temperatures will generally be warmer than this, and emission estimates given by MOBILE5A are inversely proportional to the ambient temperature.

After computing vehicular carbon monoxide emissions through the use of MOBILE5A, these data were then input to an atmospheric dispersion model. EPA air quality modeling guidelines [7] currently recommend that the computer model CAL3QHC [8] be used to assess carbon monoxide concentrations at roadway intersections, or in areas where its use has previously been established, CALINE4 [9] may be used. Until about two years ago, CALINE4 was used extensively in Hawaii to assess air quality impacts at roadway intersections. In December 1997, the California Department of Transportation recommended that the intersection mode of CALINE4 no longer be used because it was thought the model has become outdated. Studies have shown that CALINE4 may tend to over-predict maximum concentrations in some situations. Because of this, CAL3QHC was used for the subject analysis.

CAL3QHC was developed for the U.S. EPA to simulate vehicular movement, vehicle queuing and atmospheric dispersion of vehicular emissions near roadway intersections. It is designed to predict 1-hour average pollutant concentrations near roadway intersections based on input traffic and emission data, roadway/receptor geometry and meteorological conditions.

Although CAL3QHC is intended primarily for assessing atmospheric dispersion near signalized roadway intersections, it can also be used to evaluate unsignalized intersections. This is accomplished by manually estimating queue lengths and then applying the same techniques used by the model for signalized intersections. Currently, three of the four study intersections are signalized, and all four intersections were assumed to be signalized for the future with-project scenario.

Input peak-hour traffic data were obtained from the traffic study cited previously. This included vehicle approach volumes, saturation capacity estimates, intersection laneage and signal timings. All emission factors that were input to CAL3QHC for free-flow traffic on area roadways were obtained from MOBILE5A based on assumed free-flow vehicle speeds of 25 to 45 mph, depending on location.

Model roadways were set up to reflect roadway geometry, physical dimensions and operating characteristics. Sidewalks currently exist only near some of the roadway intersections studied. Concentrations predicted by air quality models generally are not considered valid within the roadway mixing zone. The roadway mixing zone is usually taken to include 3 meters on either side of the traveled portion of the roadway and the turbulent area within 10 meters of a cross street. Model receptor sites were thus located at the edges of the mixing zones near all intersections that were studied (whether or not sidewalks currently exist). All receptor heights were placed at 1.8 meters above ground to simulate levels within the normal human breathing zone.

Input meteorological conditions for this study were defined to provide "worst-case" results. One of the key meteorological inputs is atmospheric stability category. For these analyses, atmospheric stability category 6 was assumed for the morning case, and stability category 4 was assumed for the afternoon case. These are the most conservative stability categories that are generally used for estimating worst-case pollutant dispersion within suburban or rural areas for these periods. A surface roughness length of 100 cm and a mixing height of 1000 meters were used in all cases. Worst-case wind conditions were defined as a wind speed of 1 meter per second with a wind direction resulting in the highest predicted concentration. Concentration estimates were calculated at wind directions of every 5 degrees.

Existing background concentrations of carbon monoxide in the project vicinity are believed to be at relatively low levels. Thus, background contributions of carbon monoxide from sources or roadways not directly considered in the analysis were accounted for by adding a background concentration of 0.5 ppm to all predicted concentrations for 1998. Although increased traffic is expected to occur within the project area within the next several years with or without the project, background carbon monoxide concentrations may not change significantly since individual emissions from motor vehicles are forecast to decrease with time. Hence, a background value of 0.5 ppm was assumed to persist for the future scenarios studied.

Predicted Worst-Case 1-Hour Concentrations

Table 4 summarizes the final results of the modeling study in the form of the estimated worst-case 1-hour morning and afternoon ambient carbon monoxide concentrations. These results can be compared directly to the state and the national AAQS. Estimated

worst-case carbon monoxide concentrations are presented in the table for three scenarios: year 1998 with existing traffic, year 2020 without the project and year 2020 with the project. The locations of these estimated worst-case 1-hour concentrations all occurred at or very near the indicated intersections.

As indicated in the table, the highest estimated 1-hour concentration within the project vicinity for the present (1998) case was 11.7 mg/m³. This was projected to occur during the morning peak-traffic hour near the intersection of Kaunualii Highway and Puhi Road. The next highest value, 11.0 mg/m³, was estimated to occur during the morning peak-traffic hour at the intersection of Kaunualii Highway and Kalepa Street. Concentrations at other locations and times studied ranged between about 3 and 10 mg/m³. All predicted worst-case 1-hour concentrations for the 1998 scenario were well within the national AAQS of 40 mg/m³, but concentrations at three of the four intersections studied either equaled or slightly exceeded the more stringent state standard (which is set at 10 mg/m³). It should be noted that because the state 1-hour carbon monoxide standard is set at such a stringent level, it is likely that it is currently exceeded at many locations in the state that have even moderate traffic volumes.

In the year 2020 without the proposed project, a worst-case 1-hour concentration of 13.5 mg/m³ was predicted to occur during the morning peak-traffic hour near the intersection of Kaunualii Highway and Puhi Road. The next highest value for the project area was 12.3 mg/m³ and occurred during the morning near the intersection of Kaunualii Highway and Nawiliwili Road. Peak-hour worst-case values at the other locations and times studied for the 2020 without-project scenario ranged between about 7 and 12 mg/m³. Similar to the existing case, predicted worst-case 1-hour concentrations for the 2020 without-project scenario were within

the national AAQS, but concentrations were estimated to exceed the state AAQS at all four of the locations that were studied. The predicted concentrations at all locations were higher compared to the 1998 scenario, particularly at the intersection of Kaunualii Highway and Maluhia Road. Very long traffic queues would occur at this location because of over capacity conditions.

Predicted 1-hour worst-case concentrations for the 2020 without-project scenario ranged from 4.7 mg/m³ during the afternoon at the Kaunualii Highway/Maluhia Road intersection to 12.6 mg/m³ during the morning at the Kaunualii Highway/Puhi Road intersection. Compared to the 2020 without project case, predicted worst-case concentrations for 2020 with the project were either lower or about the same except at the intersection of Kaunualii Highway and Kalepa Street where a slight increase was predicted during the afternoon. Substantial improvement was predicted for the area near the intersection of Kaunualii Highway and Maluhia Road. All of the locations studied were predicted to meet the national AAQS, but locations near three of the four intersections modeled were predicted to potentially exceed the more stringent state standard.

Predicted Worst-Case 8-Hour Concentrations

Worst-case 8-hour carbon monoxide concentrations were estimated by multiplying the worst-case 1-hour values by a persistence factor of 0.5. This accounts for two factors: (1) traffic volumes averaged over eight hours are lower than peak 1-hour values, and (2) meteorological conditions are more variable (and hence more favorable for dispersion) over an 8-hour period than they are for a single hour. Based on monitoring data, 1-hour to 8-hour persistence factors for most locations generally vary from 0.4 to 0.8 with 0.6 being the most typical. One recent study based on modeling [10] concluded that 1-hour to 8-hour persistence factors

could typically be expected to range from 0.4 to 0.5. EPA guidelines (11) recommend using a value of 0.7 unless a locally derived persistence factor is available. Although there is no data for Kauai, recent monitoring data for locations on Oahu reported by the Department of Health (2) suggest that this factor may range between about 0.2 and 0.6 depending on location and traffic variability. Considering the location of the project and the traffic pattern for the area, a 1-hour to 8-hour persistence factor of 0.5 will likely yield reasonable estimates of worst-case 8-hour concentrations.

The resulting estimated worst-case 8-hour concentrations are indicated in Table 5. For the 1998 scenario, the estimated worst-case 8-hour carbon monoxide concentrations for the locations studied ranged from 2.5 to 5.8 mg/m³. The estimated worst-case concentrations either equaled or slightly exceeded the state standard of 5 mg/m³ at three of the four locations studied but remained well within the national limit of 10 mg/m³.

For the year 2020 without-project scenario, the estimated worst-case concentrations ranged between 5.8 and 6.8 mg/m³. All locations were predicted to experience increased concentrations compared to the existing case, and a substantial increase was indicated at the intersection of Kaunualii Highway at Maluhia Road. The worst-case concentration estimates for all locations studied met the national 8-hour standard but exceeded the state 8-hour standard.

For the 2020 with-project scenario, the predicted worst-case concentrations ranged from 3.4 to 6.3 mg/m³. Worst-case concentrations at all locations studied were predicted to decrease compared to the without-project scenario. Similar to the without-

project scenario, all predicted 8-hour concentrations for this scenario were within the national AAQS, but three of the four locations studied exceeded the more stringent state AAQS.

Again, it should be noted that, because the state 8-hour carbon monoxide standard is set at such a stringent level, it is likely that it is currently exceeded at many locations in the state that have even moderate traffic volumes.

Conservativeness of Estimates

The results of this study reflect several assumptions that were made concerning both traffic movement and worst-case meteorological conditions. One such assumption concerning worst-case meteorological conditions is that a wind speed of 1 meter per second with a steady direction for 1 hour will occur. A steady wind of 1 meter per second blowing from a single direction for an hour is extremely unlikely and may occur only once a year or less. With wind speeds of 2 meters per second, for example, computed carbon monoxide concentrations would be only about half the values given above. The 8-hour estimates are also conservative in that it is unlikely that anyone would occupy the assumed receptor sites (within 3 m of the roadways) for a period of 8 hours.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Air quality in the project area is currently relatively good except possibly for occasional dust and smoke from nearby agricultural activities. Based on air quality modeling results, the state standards for carbon monoxide may also occasionally be

exceeded in small hot-spot areas near traffic-congested intersections along Kaunualii Highway at the present time.

The major potential short-term impact of the project on air quality will occur from the emission of fugitive dust during construction. Uncontrolled fugitive dust emissions from construction activities are estimated to amount to about 1.2 tons per acre per month or more, depending on rainfall. To control dust, active work areas and any temporary unpaved work roads should be watered at least twice daily on days without rainfall. Use of wind screens in sensitive areas and/or limiting the area that is disturbed at any given time will also help to contain fugitive dust emissions. Wind erosion of inactive areas of the project that have been disturbed could be controlled by mulching or chemical stabilization. Dirt-hauling trucks should be covered when traveling on roadways to prevent windage. A routine road cleaning and/or tire washing program will also help to reduce fugitive dust emissions that may occur as a result of trucks tracking dirt onto paved roadways in the project area. Establishment of landscaping early in the construction schedule will also help to control dust.

During construction phases, emissions from engine exhausts (primarily consisting of carbon monoxide and nitrogen oxides) will also occur from on-site construction equipment, from vehicles used by construction workers and from trucks traveling to and from the project. Disruption of traffic due to road closures may also increase tailpipe emissions. Increased vehicular emissions due to the disruption of traffic by construction activities should be mitigated by moving equipment and personnel to the site during off-peak traffic hours and by minimizing road closures during peak-traffic periods.

Assuming the proposed project is built, carbon monoxide concentrations near roadway intersections in the project area will likely decrease and air quality will improve compared to the without-project case, particularly at the intersection of Kaunualii Highway and Maluhia Road. However, worst-case carbon monoxide concentrations may continue to exceed the state standards with or without the project. All locations should meet the less stringent national standards with or without the project.

Due to the low levels at which the state carbon monoxide standards are set, it may not be possible to achieve continuous compliance with the standards, at least within some small hot-spot areas near high-volume intersections in the project area. Because the state standards are set at such stringent levels, it is likely that the standards are currently exceeded at many locations in the state that have even moderate traffic volumes.

Options available to mitigate long-term, traffic-related air pollution are generally to further improve roadways, to reduce individual vehicular emissions or to reduce traffic volumes. Further improvement of roadways may not always provide reductions in maximum carbon monoxide concentrations. In some cases, roadway improvements may actually result in higher maximum concentrations when, for example, traffic lanes are added and more traffic becomes concentrated near an intersection. Reduction of emissions from individual vehicles would have to be achieved through the promulgation of local, state or federal air pollution control regulations. Currently, the state standards for tailpipe emissions are not commensurate with the stringent state air quality standards. Also, Hawaii currently does not require annual

inspections of motor vehicle air pollution control equipment, which would likely provide reduced emissions and improved air quality. Reducing traffic volumes could conceivably be achieved by promoting bus service and carpooling and by staggering local school and business hours to begin and end during off-peak traffic periods.

Another potential mitigation measure might be to provide added buffer zones between new walkways and roadways where possible, although technically, the public would have to somehow be excluded from the buffer zones. The predicted worst-case concentrations in this report are based on a separation distance of 3 m (10 ft) between walkways and roadways. Doubling this distance to about 6 m (20 ft) would reduce maximum concentrations by about 10 to 15 percent.

Given that the predicted worst-case carbon monoxide concentrations are well within the national ambient air quality standards, that the more stringent state standards are probably currently exceeded near many roadway intersections in the state where traffic volumes are moderate to high, and that the proposed project would result in a slight to moderate improvement in carbon monoxide levels, implementing air quality mitigation measures for long-term traffic-related impacts is probably unnecessary and unwarranted.

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Figure 1 - PROJECT LOCATION MAP

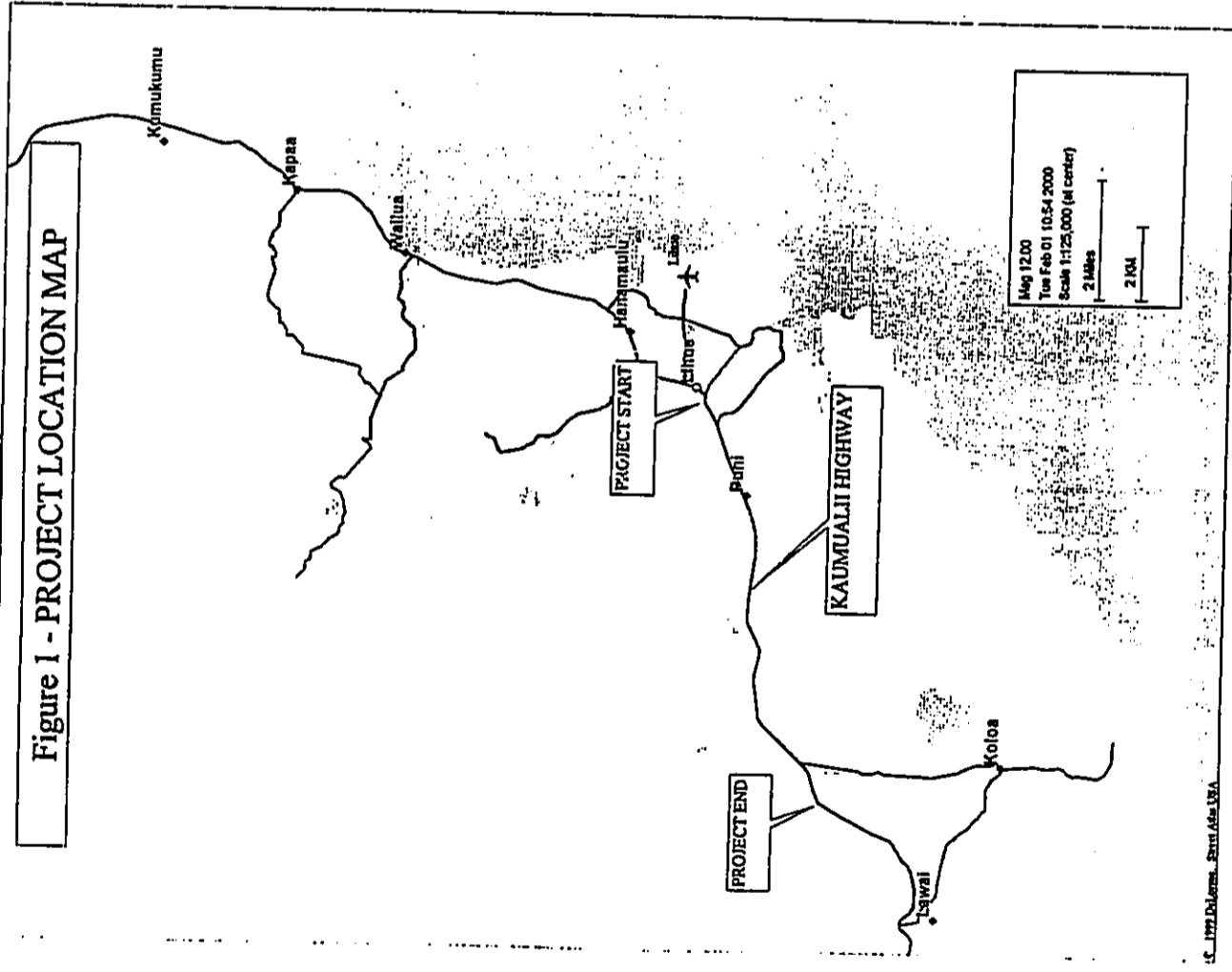


Table 1

SUMMARY OF STATE OF HAWAII AND NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Units	Averaging Time	Maximum Allowable Concentration		
			National Primary	National Secondary	State of Hawaii
Particulate Matter (<10 microns)	µg/m ³	Annual 24 Hours	50 ^a	50 ^a	50
			150 ^b	150 ^b	150 ^c
Particulate Matter (<2.5 microns)	µg/m ³	Annual 24 Hours	15 ^a	15 ^a	-
			65 ^d	65 ^d	-
Sulfur Dioxide	µg/m ³	Annual 24 Hours 3 Hours	80	-	80
			365 ^e	-	365 ^e
			-	1300 ^f	1300 ^f
Nitrogen Dioxide	µg/m ³	Annual	100	100	70
Carbon Monoxide	ppm	8 Hours	10 ^g	-	5 ^g
		1 Hour	40 ^g	-	10 ^g
Ozone	µg/m ³	8 Hours	157 ^h	157 ^h	-
		1 Hour	235 ⁱ	235 ⁱ	100 ^c
Lead	µg/m ³	Calendar Quarter	1.5	1.5	1.5
Hydrogen Sulfide	µg/m ³	1 Hour	-	-	35 ^j

^a Three-year average of annual arithmetic mean.
^b 99th percentile value averaged over three years.
^c Not to be exceeded more than once per year.
^d 98th percentile value averaged over three years.
^e Three-year average of fourth-highest daily 8-hour maximum.
^f Standard is attained when the expected number of exceedances is less than or equal to 1.
^g Note: Standards for particulate matter (<2.5 microns) and for 8-hour ozone are subject to court appeal.

Table 2
 MEAN WIND SPEED AND PREVAILING DIRECTION
 FOR LIHUE AIRPORT, KAUAI

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Speed (mph)	11.0	11.5	12.6	13.2	12.6	13.0	13.6	13.0	11.6	11.4	12.2	11.7	12.3
Direction	ESE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE

Source: "Local Climatological Data, Annual Summary With Comparative Data, Lihue, Hawaii, 1992", U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Environmental Data Service, National Climatic Center, Asheville, NC.

Table 3
 AIR POLLUTION EMISSIONS INVENTORY FOR
 ISLAND OF KAUAI, 1993

Air Pollutant	Point Sources (tons/year)	Area Sources (tons/year)	Total (tons/year)
Particulate	614	4,817	5,431
Sulfur Oxides	703	nil	703
Nitrogen Oxides	4,072	7,054	11,126
Carbon Monoxide	2,315	11,974	14,289
Hydrocarbons	859	224	1,083

Source: Final Report, "Review, Revise and Update of the Hawaii Emissions Inventory Systems for the State of Hawaii", prepared for Hawaii Department of Health by J.L. Shoemaker & Associates, Inc., 1996

Table 4

ESTIMATED WORST-CASE 1-HOUR CARBON MONOXIDE CONCENTRATIONS
AT SELECTED INTERSECTIONS ALONG KAUNALIHI HIGHWAY
(milligrams per cubic meter)

Roadway Intersection	Year/Scenario					
	1998/Present		2020/Without Project		2020/With Project	
	AM	PM	AM	PM	AM	PM
Kaunalihi Highway at Hawiliwili Road	10.0	7.0	12.3	8.3	12.0	8.4
Kaunalihi Highway at Kalepa Street	11.0	6.9	11.6	6.7	10.7	8.0
Kaunalihi Highway at Puhi Road	11.7	6.9	13.5	7.0	12.6	7.2
Kaunalihi Highway at Maluhia Road	5.0	3.0	11.7	7.7	6.8	4.7

Hawaii State AAQS: 10
National AAQS: 40

Table 5

ESTIMATED WORST-CASE 8-HOUR CARBON MONOXIDE CONCENTRATIONS
AT SELECTED INTERSECTIONS ALONG KAUNALIHI HIGHWAY
(milligrams per cubic meter)

Roadway Intersection	Year/Scenario		
	1998/Present	2020/Without Project	2020/With Project
Kaunalihi Highway at Hawiliwili Road	5.0	6.2	6.0
Kaunalihi Highway at Kalepa Street	5.5	5.8	5.4
Kaunalihi Highway at Puhi Road	5.8	6.8	6.3
Kaunalihi Highway at Maluhia Road	2.5	5.8	3.4

Hawaii State AAQS: 5
National AAQS: 10

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

APPENDIX E

Noise Analysis Report



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DARBY & ASSOCIATES
ACOUSTICAL CONSULTANTS

Project No. 99-66

ENVIRONMENTAL NOISE ASSESSMENT STUDY
KAUMUALII HIGHWAY WIDENING
KAUAI, HAWAII

February, 2000

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1.0 SUMMARY

- 1.1 A traffic noise assessment for two noise sensitive locations along Kaunualii Highway was conducted. Existing noise measurements were taken and future traffic noise levels were predicted based on traffic data provided by Austin, Tsutsumi & Associates, Inc.
- 1.2 No existing noise sensitive areas in the project area are expected to be impacted by future traffic noise levels. In fact, decreases in traffic noise levels are expected due to the physical realignment of the existing Kaunualii Highway.
- 1.3 The dominant noise sources during project construction will probably be earth moving equipment, such as bulldozers and diesel powered trucks. The noise from construction activities could impact nearby residences. Noise from construction activities should be short term and must comply with State Department of Health noise regulations.

2.0 PROJECT DESCRIPTION

The proposed project, shown in Figure 1, is located on the island of Kauai and involves the widening of Kaunualii Highway from a two lane to a four lane roadway. Re-alignments of the Kaunualii Highway are also included in the project, which involves improvements along 6.8 miles of existing roadway from Lihue to Mahulia Road. Noise sensitive land uses near the project which may be impacted by the project include the residential properties along Welau Street and Anonui Street.

3.0 NOISE STANDARDS AND GUIDELINES

Various local and federal agencies have established guidelines and standards for assessing environmental noise impacts and set noise limits as a function of land use. A brief description of common acoustic terminology used in these guidelines and standards is presented in Appendix A.

3.1 U.S. Federal Highway Administration (FHWA)

The current FHWA procedures for highway traffic noise analysis and abatement are contained in 23 CFR 772 [Reference 1]. These procedures specify the requirements that State highway agencies must meet when using Federal-aid funds for highway projects. FHWA noise abatement criteria, as a function of land use activity categories, are given in these procedures. The maximum hourly equivalent sound levels, L_{eq} , for traffic noise exposure for corresponding land use categories are listed in Table 1.

3.2 U.S. Environmental Protection Agency (EPA)

The U.S. EPA has identified a range of yearly day-night equivalent sound levels, L_{dn} , sufficient to protect public health and welfare from the effects of environmental noise [Reference 2]. The EPA has established a goal to reduce exterior environmental noise to an L_{dn} not exceeding 65 dBA and a future goal to further reduce exterior environmental noise to an L_{dn} not exceeding 55 dBA. Additionally, the EPA states that these goals are not intended as regulations as it has no authority to regulate noise levels, but rather they are intended to be viewed as levels below which the general population will not be at risk from any of the identified effects of noise.

3.3 Hawaii Department of Transportation (HDOT)

The HDOT has adopted FHWA's design goals for traffic noise exposure in its noise analysis and abatement policy [Reference 3]. According to the policy, a traffic noise impact occurs when the predicted traffic noise levels "approach" or exceed FHWA's design goals or when the predicted traffic noise levels "substantially exceed the existing noise levels." The policy also states that "approach" means at least 1 dB less than FHWA's design goals and "substantially exceed the existing noise levels" means an increase of at least 15 dB.

3.4 State Department of Health (DOH)

The State Department of Health defines a heavy vehicle as a vehicle which has a manufacturer's gross vehicular weight rating of ten thousand pounds or greater. Such vehicles shall not be operated on any trafficway in such a manner that it emits noise in excess of the limits specified in Reference 4. If these limits will be exceeded a permit from the DOH director is required.

3.5 U.S. Department of Housing and Urban Development (HUD)

HUD's environmental noise criteria and standards in 24 CFR 51 [Reference 5] were established for determining housing project site acceptability. These standards are based on day-night equivalent sound levels, L_{dn} , and are not limited to traffic noise exposure. However, for project sites in the vicinity of highways, the L_{dn} may be estimated to be equal to the design hour L_{eq} , provided "heavy trucks (vehicles with three or more axles) do not exceed 10 percent of the total traffic flow in vehicles per 24 hours and the traffic flow between 10:00 p.m. and 7:00 a.m. does not exceed 15 percent of the average daily traffic flow in vehicles per 24 hours." For these same conditions, L_{dn} may also be estimated as 3 dB less than the design hour L_{eq} .

HUD site acceptability criteria rank sites as Acceptable, Normally Unacceptable, or Unacceptable. "Acceptable" sites are those where exterior noise levels do not exceed an L_{50} of 65 dBA. Proposed housing projects on "Acceptable" sites do not require additional noise attenuation other than that provided by customary building techniques. "Normally Unacceptable" sites are those where the L_{50} is above 65 dBA, but does not exceed 75 dBA. Housing on "Normally Unacceptable" sites requires some form of noise abatement, either at the property line or in the building construction, to ensure the interior noise levels are acceptable. "Unacceptable" sites are those where the L_{50} is 75 dBA or higher. The term "Unacceptable" does not necessarily mean that housing cannot be built on those sites. It means that more sophisticated sound attenuation will likely be needed.

4.0 EXISTING ACOUSTICAL ENVIRONMENT

Existing peak hour noise levels were measured at two locations in the vicinity of the project site on Tuesday, February 1, 2000 and Wednesday, February 2, 2000. The measurements were obtained using Larson-Davis Laboratories, Models 800B and 700, sound level meters. The weather during the measurements was partly sunny skies with temperatures in the low 80's and trade winds blowing 5 to 10 miles per hour. The results of the measurements are presented in Table 2 and the measurement locations are shown in Figure 2. The dominant noise source at these locations was traffic.

In addition to noise levels, vehicle counts and classification, i.e., number of automobiles, vehicles with two axles and six wheels (medium trucks) and vehicles with three or more axles (heavy trucks) were made during the measurements. This information was then used in conjunction with the FHWA's Traffic Noise Prediction Model (TNM) to calculate existing and future noise levels.

5.0 POTENTIAL NOISE IMPACT DUE TO THE PROJECT AND NOISE MITIGATION

5.1 Project Generated Traffic Noise

FHWA's Traffic Noise Prediction Model, TNM Version 1.0b, and the traffic data provided by others [Reference 6] were used to calculate the existing and future year 2020 "no-build" and "build" traffic noise levels during morning and afternoon peak-traffic hours. The noise levels were calculated at the following noise sensitive locations.

- 1 - 225 feet from the proposed Kaunualii Highway alignment, which is the approximate location of the closest residential homes on Welau Street.

- 2 - 82 feet from the proposed Kaunualii Highway alignment on the east side of Anonui Street, which is the nearest buildable lot to Kaunualii Highway.

The calculated existing and future peak hour noise levels are presented in table 3. From these results, future AM and PM peak hour traffic noise level changes were determined and are presented in Table 4.

It is important to note that the difference between the Future No-Build and the Build traffic noise levels are due to the physical differences between the existing roadways and the proposed widened roadways, and not due to changes in traffic volumes.

As can be seen in Table 3, the project is not anticipated to result in increased traffic noise levels at the noise sensitive assessment locations. In addition, the resulting traffic noise levels with the project will be below the FHWA's traffic noise abatement criteria (Table 1).

5.2 Project Construction Noise

Development of project areas will involve excavation and grading. The various construction phases of the project may generate significant amounts of noise, which may impact residences and other noise sensitive areas. The actual noise levels produced will be a function of the methods employed during each stage of the construction process. Typical ranges of construction equipment noise are shown in Figure 5. Earth moving equipment, e.g., bulldozers and diesel-powered trucks, will probably be the loudest equipment used during construction.

In cases where construction noise exceeds, or is expected to exceed the State DOH's "maximum permissible" property line noise levels [Reference 7], a permit must be obtained from the DOH to allow the operation of vehicles, construction equipment, power tools, etc., which emit noise levels in excess of the "maximum permissible levels." Specific permit restrictions for construction activities are:

"No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels... before 7:00 a.m. and after 6:00 p.m. of the same day, Monday through Friday."

"No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels... before 9:00 a.m. and after 6:00 p.m. on Saturday."

"No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels on Sundays and on holidays."

In addition, construction equipment and on-site vehicles or devices whose operations involve the exhausting of gas or air, excluding pile hammers and pneumatic hand tools weighing less than 15 pounds, must be equipped with mufflers, and construction vehicles using trafficways must satisfy the DOH's vehicular noise requirements [Reference 7].

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TABLE 1
FHWA NOISE ABATEMENT CRITERIA

Activity Category	L_{eq}^* (in dBA)	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 above.
D	--	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

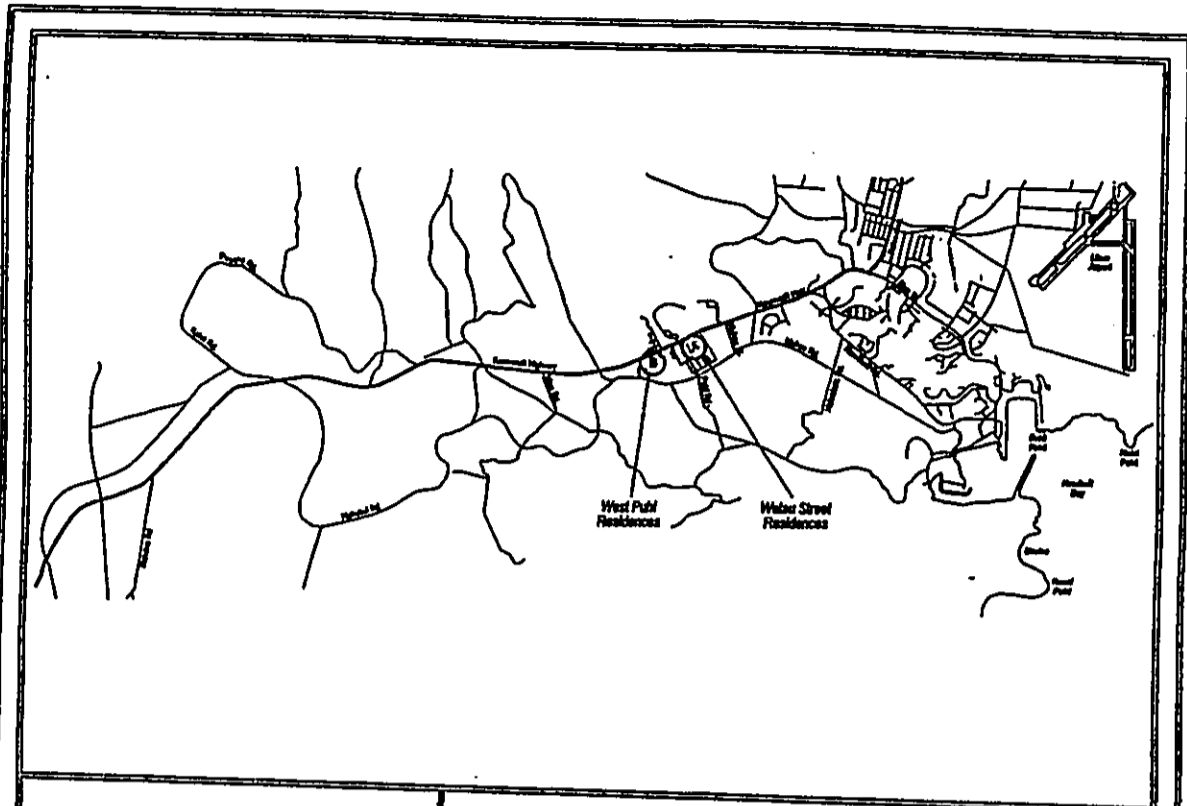
* L_{eq}^* is the hourly equivalent sound level that represents a constant level of sound having the same total acoustic energy as that contained in the actual time-varying sound measured during the one-hour period.

TABLE 2
NOISE MEASUREMENT RESULTS

Measurement Location*	Start Time/ Date	Measured L_{eq}^{**} (in dBA)	Duration of Measurement
A	7:00 am 2/2/00	69.4	60 min
	4:00 pm 2/1/00	69.5	60 min
B	7:00 am 2/2/00	69.3	60 min
	4:00 pm 2/1/00	68.4	60 min

* Location A was approximately 25 feet from the existing Kaunuaui Highway right-of-way and approximately 150 feet to the west of Nani Street. Location B was approximately 25 feet from the existing Kaunuaui Highway right-of-way and approximately 100 feet east of Anonui Street.

** L_{eq} is the equivalent sound level that represents a constant level of sound having the same total acoustic energy as that contained in the actual time-varying sound measured over a specific time period.




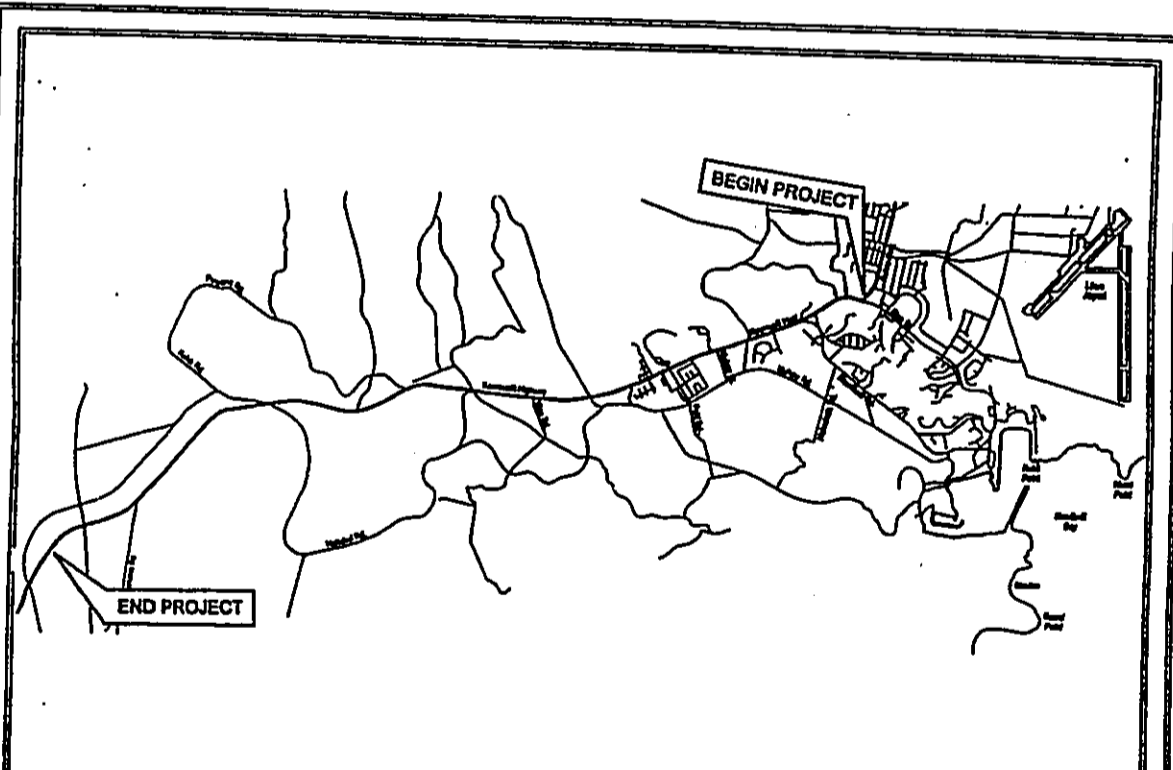

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FIGURE 2 - NOISE MEASUREMENT AND NOISE ASSESSMENT LOCATIONS





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FIGURE 1 - PROJECT LOCATION AND STUDY AREA

APPENDIX A

ACOUSTICAL TERMINOLOGY

Sound Pressure Level

Sound or noise consists of minute fluctuations in atmospheric pressure capable of evoking the sense of hearing. It is measured in terms of decibels (dB) using precision instruments known as sound level meters. Noise is defined as "unwanted" sound.

Technically, sound pressure level (SPL) is defined as:

$$SPL = 20 \log (P/P_{ref}) \text{ dB}$$

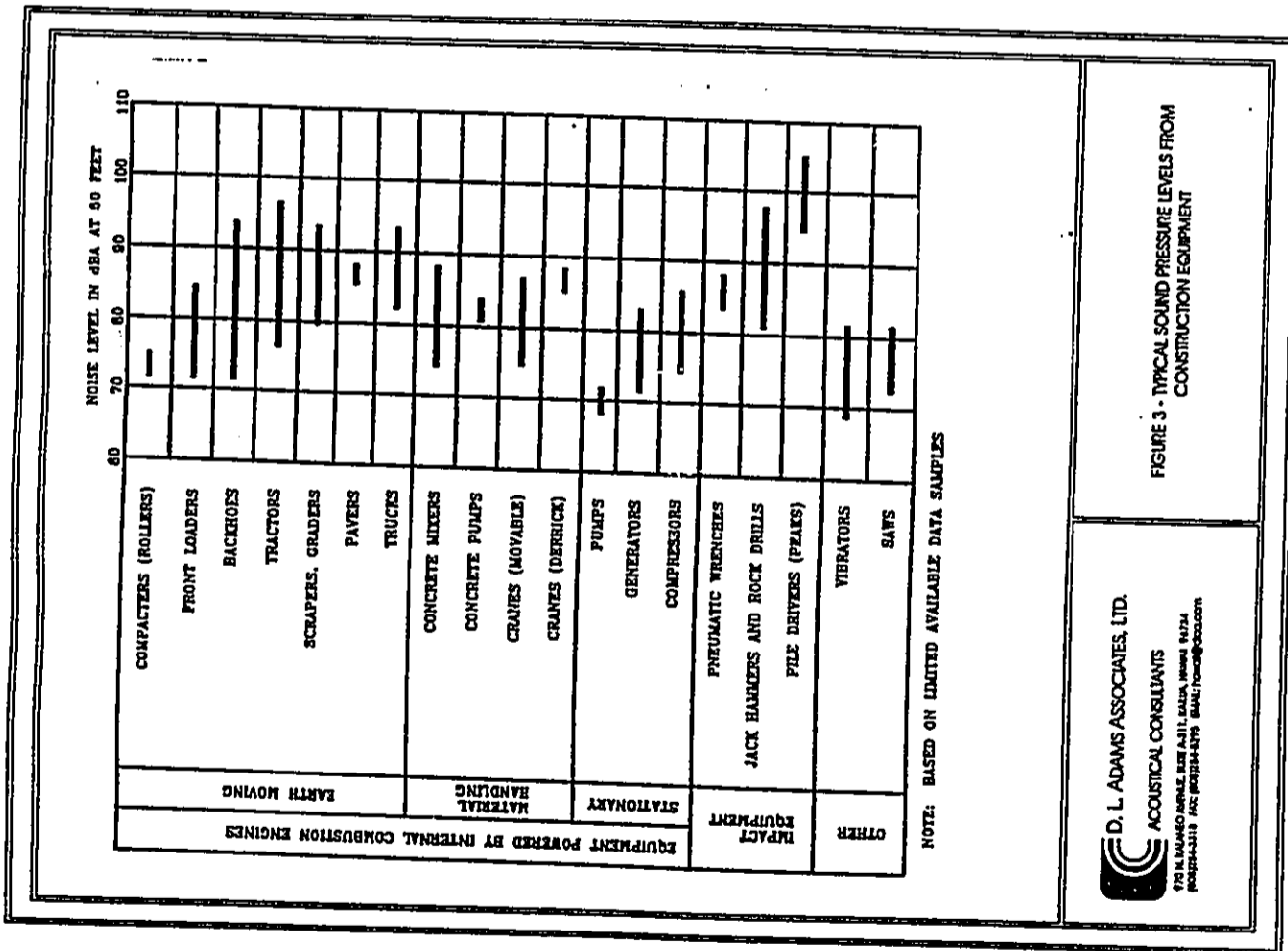
where P is the sound pressure fluctuation (above or below atmospheric pressure) and P_{ref} is the reference pressure, 20 micropascals, which is approximately the lowest sound pressure that can be detected by the human ear. For example, if P is 20 micropascals, then SPL = 0 dB, or if P is 200 micropascals, then SPL = 20 dB. The relation between sound pressure in micropascals and sound pressure level in decibels (dB) is shown in Figure A-1.

The sound pressure level that results from a combination of noise sources is not the arithmetic sum of the individual sound levels, but rather the logarithmic sum. For example, two sound levels of 50 dB produce a combined level of 53 dB, not 100 dB; two sound levels of 40 and 50 dB produce a combined level of 50.4 dB.

Human sensitivity to changes in sound pressure level is highly individualized. Sensitivity to sound depends on frequency content, time of occurrence, duration, and psychological factors such as emotions and expectations. However, in general, a change of 1 or 2 dB in the level of a sound is difficult for most people to detect. A 3 dB change is commonly taken as the smallest perceptible change and a 5 dB change corresponds to a noticeable change in loudness. A 10 dB increase or decrease in sound level corresponds to an approximate doubling or halving of loudness, respectively.

A-Weighted Sound Level

The human ear is more sensitive to sound in the frequency range of 250 Hertz (Hz) and higher, than in frequencies below 250 Hz. Due to this type of frequency response, a frequency weighting system, was developed to emulate the frequency response of the human ear. This system expresses sound levels in units of A-weighted decibels (dBA). A-weighted sound levels de-emphasizes the low frequency portion of the spectrum of a signal. The A-weighted level of a sound is a good measure of the loudness of that sound. Different sounds having the same A-weighted sound level are perceived as being about equally loud. Typical values of the A-weighted sound level of various noise sources are shown in Figure A-1.



NOTE: BASED ON LIMITED AVAILABLE DATA SAMPLES

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FIGURE 3 - TYPICAL SOUND PRESSURE LEVELS FROM CONSTRUCTION EQUIPMENT

Appendix A
Acoustical Terminology (Continued)

Statistical Sound Levels

The sound levels of long-term noise producing activities, such as traffic movement, aircraft operations, etc., can vary considerably with time. In order to obtain a single number rating of such a noise source, a statistically-based method of expressing sound or noise levels developed. It is known as the Exceedence Level, L_x . The Exceedence Level, L_x , represents the sound level which is exceeded for $x\%$ of the measurement time period. For example, $L_{10} = 60$ dBA indicates that for the duration of the measurement period, the sound level exceeded 60 dBA 10% of the time. Commonly used Exceedence Levels include L_1 , L_{10} , L_{50} , and L_{90} , which are widely used to assess community and environmental noise. Figure A-2 illustrates the relationship between selected statistical noise levels.

Equivalent Sound Level

The Equivalent Sound Level, L_{eq} , represents a constant level of sound having the same total acoustic energy as that contained in the actual time-varying sound being measured over a specific time period. L_{eq} is commonly used to describe community noise, traffic noise, and hearing damage potential. It has units of dBA and is illustrated in Figure A-2.

Day-Night Equivalent Sound Level

The Day-Night Equivalent Sound Level, L_{dn} , is the Equivalent Sound Level, L_{eq} , measured over a 24-hour period. However, a 10 dB penalty is added to the noise levels recorded between 10 pm and 7 am to account for people's higher sensitivity to noise at night when the background noise level is typically lower. The L_{dn} is a commonly used noise descriptor in assessing land use compatibility, and is widely used by federal and local agencies and standards organizations. Qualitative descriptions, as well as local examples of L_{dn} , are shown in Figure A-3.

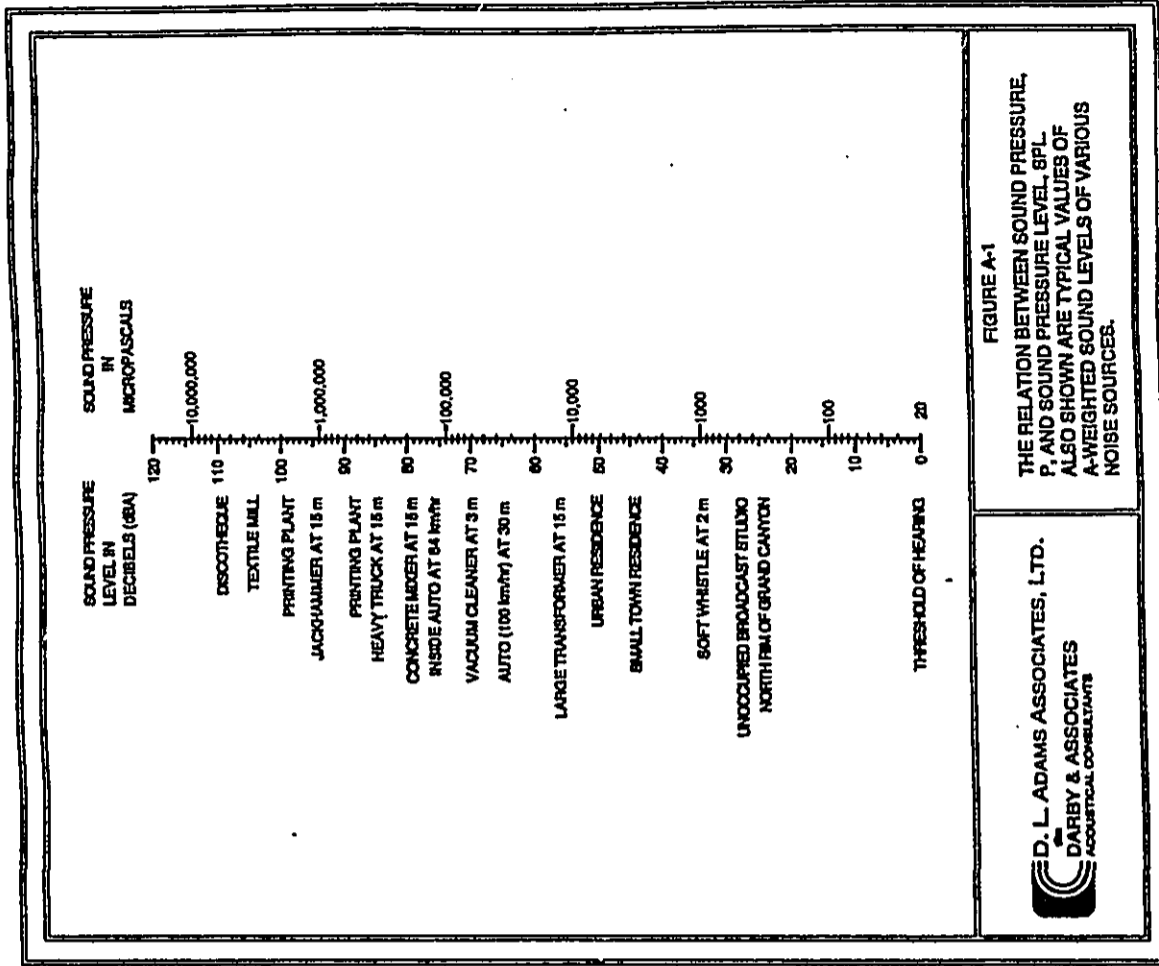
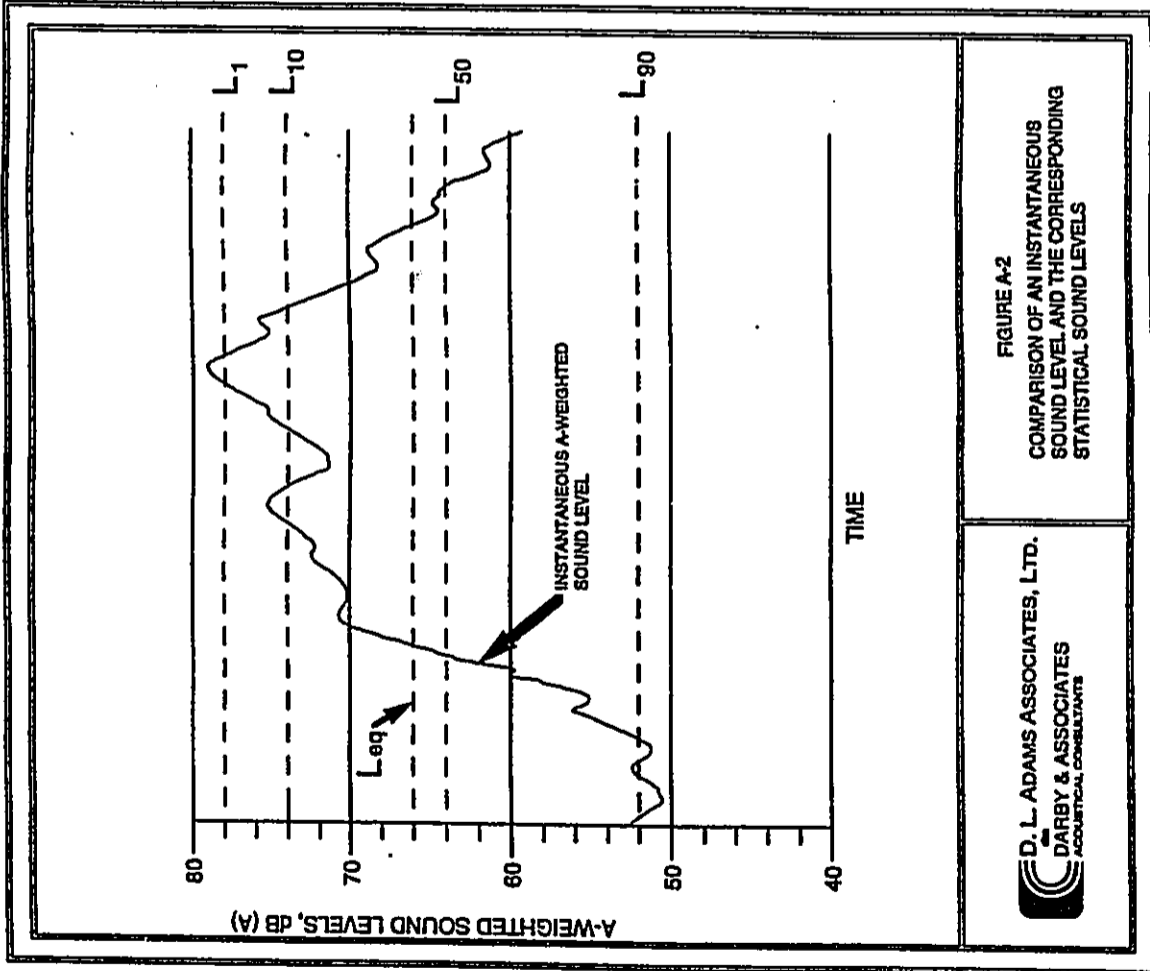


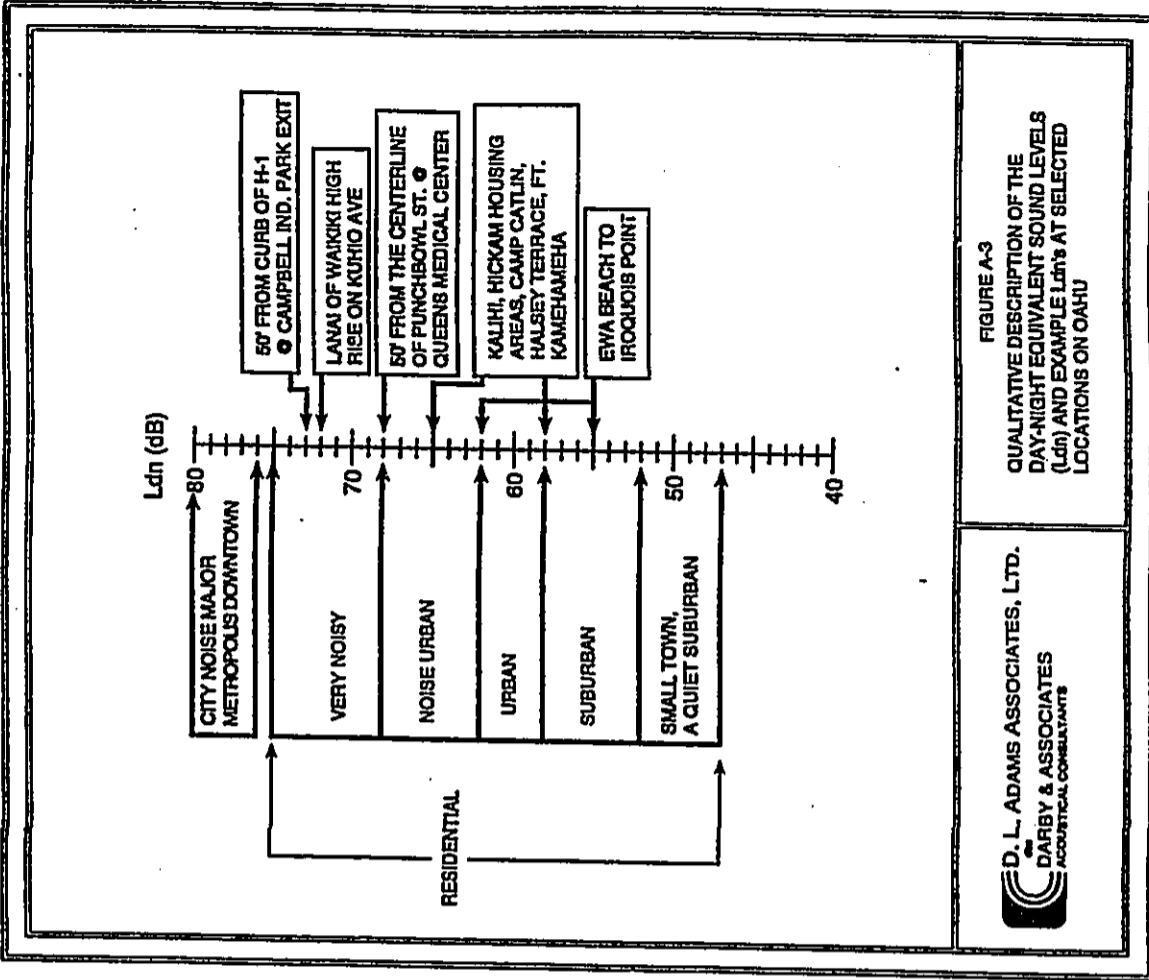
FIGURE A-1
THE RELATION BETWEEN SOUND PRESSURE, P, AND SOUND PRESSURE LEVEL, SPL. ALSO SHOWN ARE TYPICAL VALUES OF A-WEIGHTED SOUND LEVELS OF VARIOUS NOISE SOURCES.

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FIGURE A-2
COMPARISON OF AN INSTANTANEOUS
SOUND LEVEL AND THE CORRESPONDING
STATISTICAL SOUND LEVELS



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FIGURE A-3
QUALITATIVE DESCRIPTION OF THE
DAY-NIGHT EQUIVALENT SOUND LEVELS
(Ldn) AND EXAMPLE Ldn's AT SELECTED
LOCATIONS ON OAHU

APPENDIX F

Wetland Delineation Report

WETLAND DELINEATION

FOR THE

KAUMUALII HIGHWAY IMPROVEMENT PROJECT, ISLAND OF KAUAI, HAWAII

FINAL SUBMITTAL May 2000

U.S. Army Corps of Engineers
Honolulu District



Final
May 2000



Wetland Mapping, Kaumualii Highway Improvement, Lihue to West of Maluhia Road
Island of Kauai, Hawaii
U.S. Army Engineer District, Honolulu
Manuscript/1000.DOC

EXECUTIVE SUMMARY

Lihue is the County seat and the business center for Kauai. Kauai's main airport is located in Lihue as well as Kauai's principal harbor (Nawiliwili Harbor). Kaumualii Highway is the main road artery between Lihue and western Kauai. The proposed Kaumualii Highway improvement project would increase the vehicular capacity of a 7.5 mile stretch between Maluhia Road near Koloa and Rice Street in Lihue.

The Honolulu District, U.S. Army Corps of Engineers has been tasked with delineating wetlands and identifying the waters of the U.S. within the project boundaries. Wetland delineations and field surveys were conducted jointly by representatives from the State Department of Transportation (DOT) Highways Division, Federal Highway Administration (FHWA), U.S. Environmental Protection Agency (USEPA), U.S. Fish and Wildlife Service (USFWS), and U.S. Army Corps of Engineers (Corps) during the week of January 31 through February 4, 2000. This report documents the wetland delineation and assembles the information on this project related to wetlands and waters of the U.S. The delineations were performed in accordance with the Corps of Engineers 1987 Wetland Delineation Manual and were certified for regulatory purposes by the Corps Honolulu District for five years.

Wetlands are dynamic in nature and their characteristics and size vary with changes in land use, hydrology patterns and other natural and human actions. This report and its contents are a snapshot of the wetlands that will surely change over time. It is intended that the research, mapping, and data that has been accomplished for this effort be put in a format that can be used for future updates. Geographic Information Systems (GIS) and Global Positioning System (GPS) techniques were used to provide a layer of information of present wetland conditions and forms a basis for collecting comparative data in the future.

A digital wetland map is included in a CD that is part of this report. The report and a copy of the draft Environmental Assessment are also included in the project CD. Text documents were scanned in Adobe Acrobat PDF format. A foldout map showing the waters of the U.S. is also a part of this report.

A total of 2 wetlands and 10 waters of the U.S. were found within the project corridor. This report will be provided to the State DOT Highways Division for use in determining the amount of wetland impact.

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Chapter 1 - Introduction

1.1 Study Purpose

The purpose of this project was to map wetlands within the existing alignment of the Kamehameha Highway improvement project. Several meetings were held between DOT, FHWA, ParEn Inc. (engineering consultant to DOT), Parsons Brinkerhoff Quade and Douglas (environmental consultant to DOT), and the Corps to discuss the project and determine the scope of work. Based on these meetings and a subsequent public hearing, it was determined that the objectives of the project are to: (1) provide certified delineations of wetlands within the project alignment; (2) provide a map showing waters of the U.S. including wetlands; (3) provide a report describing the wetlands; (4) include an alternative alignment; and (5) provide recommendations to minimize wetland impacts. The project limits and pertinent landmarks are shown in figure 1.

1.2 Wetland Functions and Values

In the past, wetlands were called swamps and treated accordingly. People had visions of mosquitoes and considered the swamps as convenient places for dumps and places to build facilities that were unwanted in their neighborhoods. Kawai Nui Marsh on Oahu was used as a sewage disposal area and partially filled with construction debris and other industrial, commercial, and personal waste. Waikiki and Ala Moana were formerly marshes that were dredged and filled to reclaim land. Prior to human alterations, all three of these areas historically functioned as sediment basins, stormwater retention areas, nurseries for fish, and prime nesting areas for currently endangered waterbirds.

Wetlands can be productive natural ecosystems for fish and wildlife. In the main Hawaiian islands, there are four endangered waterbirds: the *Koioa maoli* or Hawaiian Duck (*Anas wyvilliana*); the Hawaiian Silt (*Himantopus mexicanus knudseni*); the Hawaiian moorhen (*Gallinula chloropus sandvicensis*); and the Hawaiian Coot (*Fulica alai*). For the island of Kauai, the *Hawaiian Waterbird Recovery Plan* (USFWS, 1977) designated Waita Reservoir and settling basins in the Koioa area as primary habitat for these endangered waterbirds. Primary habitat provide all of the requirements for completion of the annual life cycle for a significant number of birds in a region. Secondary habitat are of lesser importance and support a small number of birds. Areas downstream of the project identified as secondary habitat by the plan are Alokoko Pond (Menehune Fishpond), Kipu Reservoir, Huleia National Wildlife Refuge, and a sugar settling basin at Koioa. The Draft Revised Recovery Plan for Hawaiian Waterbirds, Second Revision (USFWS, 1999) is less specific. While it recognizes Huleia National Wildlife Refuge as an important managed wetland, it is silent on the other regional reservoirs. Figure 6 of this report is a large scale map which circles a broad area indicating that the "Koioa reservoirs" are one of nine core wetland localities on the island of Kauai.

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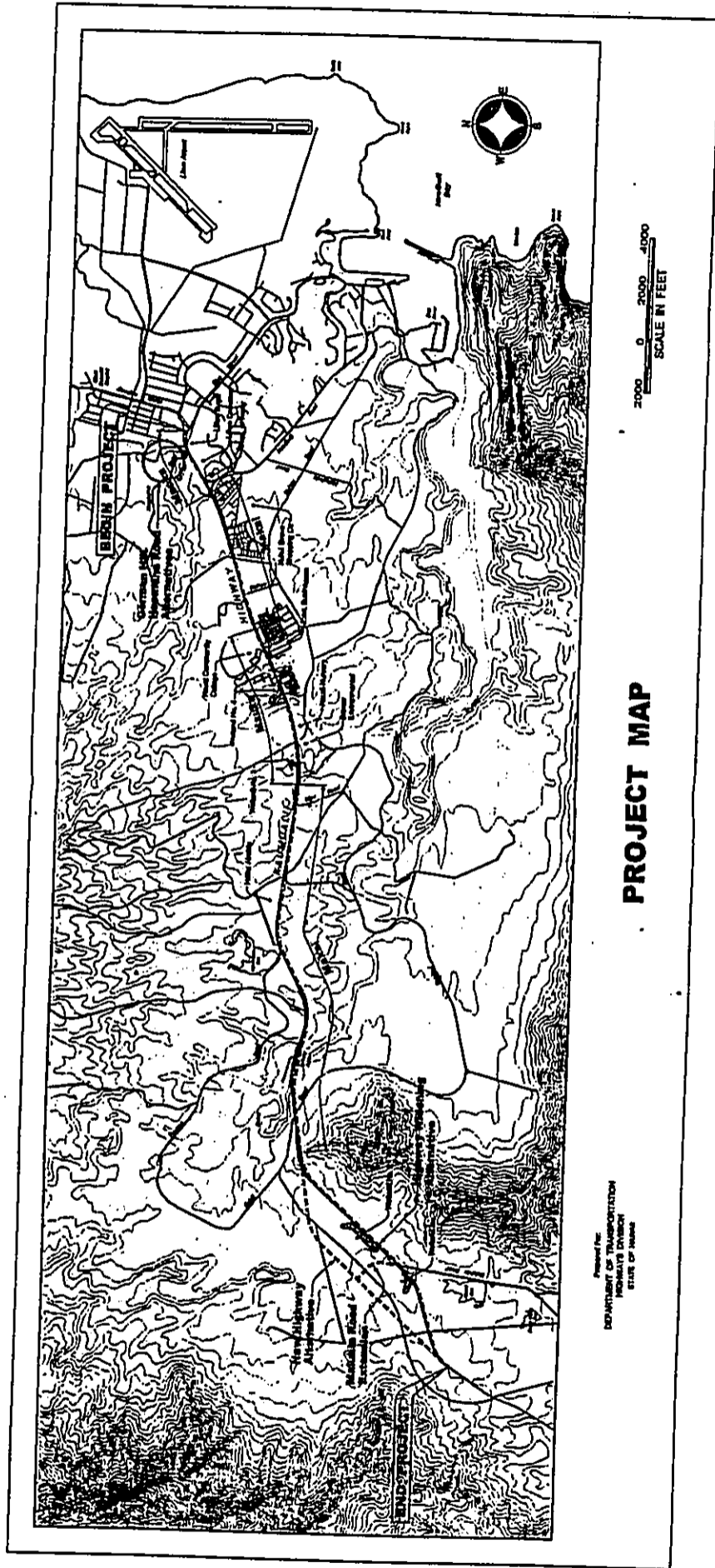


Figure 1 - Project Plan
 (Figure provided by Parsons Brinckerhoff
 Quate and Douglas, Inc.)

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

The Huleia National Wildlife Refuge (NWR) is one of three U.S. Fish and Wildlife Service NWR's established on Kauai. This refuge is downstream of the project site and a receiving area for much of the runoff through the project area. Huleia NWR is adjacent to Menehune Fishpond, a registered National Historic Landmark. The Huleia Refuge is approximately 241 acres, and was established in 1973 to provide open, productive wetlands for endangered Hawaiian waterbirds.

In general, wetlands along the coastline, streams and ponds also provide habitat for fish and crustaceans which are part of the food chain. Streams and brackish water areas are also used by native anadromous species (eg. native gobies, hihiwai, native shrimp) during their life cycle.

In addition to providing wildlife habitat, wetlands slow water velocities and help to trap sediments and pollutants before they enter the ocean. Wetlands can break down the pollutants and reduce the sediment and pollutant load to improve water quality in coastal areas. Wetland plants absorb nutrients and help to purify the water much like a kidney. In some areas of the world, wetlands are created to help treat sewage and stormwater runoff.

Another function of wetlands is to store and absorb excess water during floods which is then slowly released. This helps to reduce the peak discharges caused by floods. The longer detention time allows water to percolate and recharge the groundwater table. Wetland vegetation also stabilize and protect stream banks from scouring. However, aggressive vegetation such as California grass (*Brachiaria mutica*), hau (*Hibiscus tiliaceus*) and Job's tears (*Coix lachryma-jobi*) can also lead to unwanted land building, obstruction of the view plane, and worsening drainage conditions. Most of the drainageways in the project corridor are choked with vegetation.

In the past, Hawaiian wetlands were extensively used for fishponds and agricultural purposes. While some wetlands are still being actively farmed for watercress, lotus root, and taro, none of these crops are actively cultivated in the wetlands or streams along the Kaunaloa Highway corridor. However, other crops such as banana, eggplants, heliconia and ginger were planted along several of the stream banks within the project area.

The aesthetic values and recreational values provided by wetlands for fishing, hiking and wildlife watching are also important. In recent years, society has come to realize the values and functions of wetlands. Filling small wetlands may seem insignificant especially when looking only at the adjacent environment. However, filling a number of small wetlands can cause a cumulative effect and irretrievable damage to these special aquatic sites.

1.3 Wetland Definition

Since 1899, the Corps has been regulating the nation's navigable waters under the authority of the Rivers and Harbors Act. In 1972, the Clean Water Act was enacted. In 1975, the Corps adopted new regulations that added nonnavigable waters, including wetlands, into the definition of "waters of the U.S.". Of particular interest is Section 404 of the act which requires a permit to be obtained from the Corps of Engineers before dredge or fill materials can be discharged into waters of the U.S. including wetlands.

The Corps has come out with guidance on how wetlands are defined. The Corps authored a wetland delineation manual in 1987. The manual was rewritten in 1989 and this version was used for several years. Later, the Corps signed a Memorandum of Agreement (MOA) with the Natural Resource Conservation Service, USEPA, and USFWS to discontinue using the 1989 manual and to use the 1987 Wetland Delineation Manual instead.

Other entities such as the USFWS National Wetland Inventory (NWI) and the State of Hawaii have a broader wetland definition. In the 1987 manual, a wetland must exhibit hydric soil, water, and vegetation indicators. In contrast, the NWI only requires the presence of one of these attributes.

Corps of Engineers and U.S. Environmental Protection Agency Wetland Definition

"Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under natural circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas."

COE definition codified at 33 CFR 328.3
USEPA definition codified at 40 CFR 230.3

Geographic Decision Systems International (GDSI) and are available in an ArcView shape file through the State of Hawaii or GDSI. Although the scale is rather coarse and many of the wetlands have changed, the NWI effort and the Hall and Elliott study are the only sets of wetland maps that offer coverage over most of the Hawaiian Islands.

The NWI map is overlaid upon the USGS topo map of the project area and shown in Appendix A. The NWI indicated wetlands at Wetland #1, Halfway Bridge (upstream of project), Halemanahu Reservoir (upstream of project), Wetland #4, and reservoirs in the Puhi area. The map is rather coarse in scale but confirms the presence of the major wetlands in the area.

ParEn Inc. prepared a Draft Environmental Assessment (EA) dated January 1999. This document has been scanned by Pacific Scanning and Imaging in Adobe Acrobat format and is included in the project CD. The EA includes appendices on a botanical survey and wetland assessment, faunal surveys and stream surveys which were very helpful in the writing of this report. The botanical survey was performed by Char and Associates (1998) and described 3 areas as possible wetland areas and a fourth area as a stream crossing.

2.1.2 Other Information

In addition to the written literature, ParEn, Inc. provided engineering drawings in hardcopy and digital formats. The drawings contained topo information near the roadway and identified most of the existing culverts and stream crossings under Kananali Highway. Unfortunately, the CADD file from the topo survey was provided to the Corps after the wetland survey was completed. Thus we were not able to overlay this data prior to the wetland survey.

ParEn, Inc. also purchased a set of 5 false color infrared aerial photographs from Air Survey Hawaii dated 1992 that covered the west side of the project to Kauai Community College. The photographs were scanned in and roughly rectified using street intersections from the USGS map as control points. This provided a rough background that was useful in the field for locating ditches and access roads. After the CADD topographical information was delivered, the aerial photographs were rectified again which provided a better match with the USGS map, the GIS coverages, and other data. Due to concerns on copyright infringement, the scanned images are not included in the project CD.

2.2 Naming Convention

2.2.1 Wetland Names

To remain consistent with previous reports and drawings, the previous wetland numbers 1-4 are retained when referring to these areas whether they are jurisdictional wetlands or

Chapter 2 - Background

2.1 Literature Search

2.1.1 Available Reports and References

Wetland mapping for a large area such as the Kananali Highway improvement project is made more efficient by researching previous efforts. In this manner, efforts can be focused on areas that are believed to have the highest potential for wetlands. Wetlands are dynamic and change over time so history and land use is important in the development and evolution of these special aquatic sites.

In the early 1970's, the Corps of Engineers regulatory permit jurisdiction was increased to include Section 404 of the Clean Water Act. This act expanded the Corps' jurisdiction from navigable waters to include wetlands, streams and inland waterways. To help implement this portion of the permit program, the first comprehensive wetland inventory for the State of Hawaii was developed with Hall and Elliott's *Wetlands and Wetland Vegetation of Hawaii* (1977). This report focused on major wetlands and included 78 sites on the islands of Kauai, Oahu, Molokai, Maui, and Hawaii. The maps are based on the 1:24,000 USGS quadrangle maps, U-2 false color infrared imagery and 1:6,000 panchromatic aerial photographs. This inventory was prepared prior to the development of a wetland delineation manual and prior to the establishment of a wetland plant list for Hawaii. Given the available technology and knowledge of wetlands, this document provides excellent information and pioneered the way for wetland mapping in Hawaii.

The Hall and Elliott report describes wetlands at Kipu, Niunulu, Huleia, and Waita reservoir, all downstream of the project. Provided that the proposed improvements do not make major changes to existing drainage patterns, this project will not have a direct impact on these downstream wetlands.

An Ornithological Survey of Hawaii Wetlands (1977) was written by Ahuimanu Productions for the Corps of Engineers to comply with the Fish and Wildlife Coordination Act and Endangered Species Act during evaluation of Department of the Army permit applications. The two-volume report included excellent descriptions of the waterbirds, wetland habitat, and copies of aerial photographs. A companion reference to the Hall and Elliott report, the same seventy-eight sites were visited. Comparing the status of the wetlands and waterbird species at the time with the conditions and land uses of the present shows how manmade changes have impacted wetlands and wetland habitat.

The National Wetland Inventory (NWI) was developed by the U.S. Fish and Wildlife Service using the Cowardin System. The NWI covers the nation including the main Hawaiian Islands. The maps were originally done in the early 1980's using pen and ink on an overlay of the USGS 1:24,000 quad sheets. The maps were later digitized by

not. Two additional wetlands were found on the opposite side of Kaunuauii Highway from wetland 1. The wetland on the Kekaha side of Maluhia Road is named wetland 1a. The other wetland closer to Lihue is named wetland 1b.

2.2.2 Photographs

Thirteen disks of photographs were taken during the five days of field work. They are mounted and labeled in Appendix B. The files were downloaded and mounted at the end of each day so the photos are grouped into separate files by date. Digital copies of the mounted photographs are included in the project CD.

2.2.3 Data Sheets

File names for the data sheets comply with the naming convention of the Corps' wetland database. The data sheets are named by date followed by a letter in alphabetical order. The date format is the year in the first four characters followed by two characters for the month and two characters for the day. The data sheets are included in Appendix C and in the project CD.

2.3 Mapping

In this project, waters of the U.S. include both streams and wetlands. The stream crossings were identified from the CADD drawings and overlaid on the USGS topographic map using ArcView GIS software. They were then field verified and are discussed further in chapter 4.

There were two areas considered jurisdictional wetlands in this project. Wetland number 2 is well demarcated and lies partially in a ravine. The ravine is covered by a thicket of hau and guava trees which makes it extremely difficult to survey. The edges of the ravine closest to the highway was noted by the previous topographical survey. The color infrared photograph matched the CADD drawing fairly well and it was decided to use the photograph to map wetland number 2. This mapping technique is conservative in that it slightly overestimates the actual extent of jurisdictional wetlands.

Wetland 4 was within a tree covered stream that made it impossible to survey by GPS or to use aerial photography. Sample points were taken and we walked the edges of the wetland and tied numbered flagging. ParEn, Inc. marked the wetland boundaries on the CADD topo map as shown in Chapter 3.

Chapter 3 - Descriptions of Wetlands

3.1 General

As indicated in Chapter 2, the wetland naming convention follows that of the construction drawings. Figure 2 shows the drainage patterns and features around wetlands #1, #1a, #1b, and #2. Note that only wetlands #1a, #1b, #2 and #4 were determined to be jurisdictional wetlands. Wetlands #1 and #3 are not jurisdictional wetlands.

3.2 Wetland #1

An irrigation ditch, a pond, and an overflow ditch comprise the area identified as "wetland #1". The irrigation ditch flows through a presently fallow field. A berm created from ditch excavation runs along the irrigation ditch. The berm prevents water from the irrigation ditch from flowing into the overflow ditch and pond. Job's tears (*Coix lacrym-jobi*) and California grass (*Brachiaria mutica*) are found at the edges of the irrigation ditch near wetland #1. The ditch crosses Kaunuauii Highway at bridge 7-F. (Figure 3)



Figure 3 - Upstream end of bridge 7-F.

The pond is estimated to be 3-4 feet deep and is approximately 5,400 square feet in size. The overflow ditch drains the pond when water levels exceed the sill height. Soils, vegetation, and hydrology parameters were sampled and evaluated at this location. The soils were not hydric and the hydrology is controlled by the overflow of the pond. The overflow ditch is dominated by upland species such as octopus tree (*Schefflera actinophylla*), Koster's curse (*Clidemia hirta*) and guava. The outlet of this ditch was clogged 25 feet upstream of culvert #5 leaving the ditch dry upstream and downstream of the culvert with a little patch of ponded water above the clog. Due to the lack of soils, dominance of upland vegetation, and infrequent flow, this area is not a jurisdictional wetland.

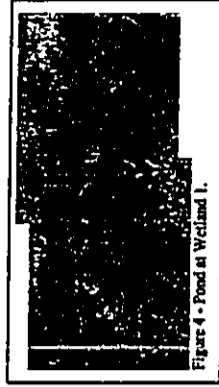


Figure 4 - Pond at Wetland 1.

The two ditches and pond that make up Wetland #1 are not considered jurisdictional wetlands, although the pond is considered a water of the U.S. Based on the topography and available information, the irrigation ditch is clearly a manmade feature and part of

the system that connects the flumes and reservoirs upstream of the highway with the Mauka, Puu O Heva, and Waita reservoirs downstream. Because this feature was created as part of an agricultural irrigation system, it is exempt from regulation under Section 404 of the Clean Water Act and is described in more detail in Chapter 4. The connection to the pond is not readily apparent and a resident had indicated that the pond was constructed for aesthetic purposes and not irrigation. Thus the pond is considered a water of the U.S. A more detailed description of the pond can be found in Chapter 4.

3.3 Wetlands #1a and #1b

This wetland is bounded by the irrigation ditch, Kaunualii Highway, Maluhia Road, and a dirt road to the south. The wetland is dominated by thickets of hau, and discarded and fallen tree branches. On the Maluhia Road side of the wetlands, swamp mahogany lines both sides of the road creating the 'tree tunnel' which towers over the hau.

Pockets of ponded water were seen as well as a flowing interior ditch. The ground elevation of this wetland is below the shoulder elevations of Kaunualii Highway and Maluhia Road. A water control structure in the irrigation ditch on the western exterior of the wetland shunts a portion of the water through the interior ditch in wetland 1a (Figure 5). Water flows through the interior ditch and beneath Maluhia Road to wetland #1b. The interior ditch is the low part of the wetland. Because of the difference in elevation with the ditch, wetlands 1a and 1b appear to be hydrologically supported or augmented by a water source independent of the irrigation ditch.



Figure 5 - Water control structure at wetland 1a.

Wetlands #1a and #1b exhibit the three hydric parameters and are considered jurisdictional wetlands. A conservative rule of thumb would be to take the top of the slopes into the wetlands as a buffer zone and ensure that no fill material goes past that line. Wetland #1a was flagged near the highway in the event that work occurs in this area. Wetland #1b is setback from Kaunualii Highway so there was no need to flag this wetland.

3.4 Wetland #2

Wetland #2 (Figure 6) begins on the inland side of Kaunualii Highway approximately 1000 feet on the Lihue side of the intersection with Maluhia Road. There is a ravine like feature approximately 30-40 feet high which tapers into a swale and blends into Weoweopitau Stream.

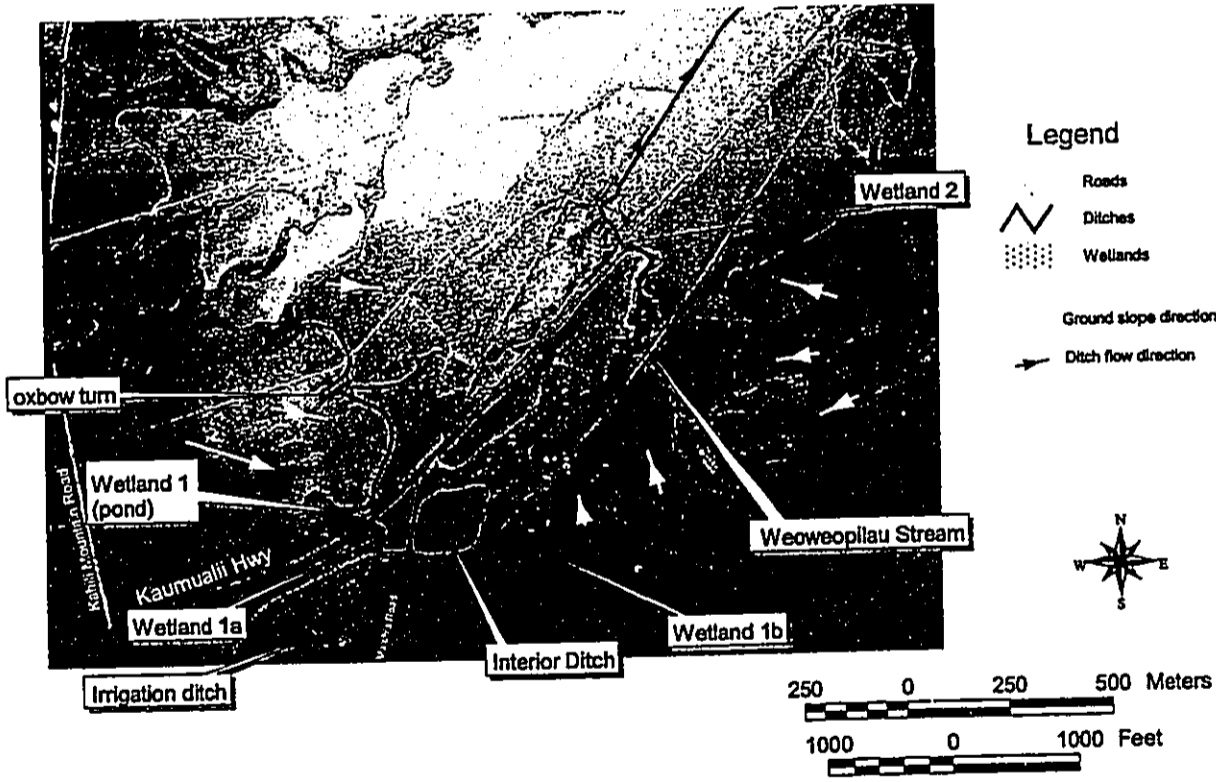


Figure 2 - Drainage Patterns near Wetlands 1, 1a, 1b, and 2



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Kaunualii Highway Improvements

The hydrology for this wetland is provided by sheet flow since the topography in this area slopes from Kahili Mountain Road towards the highway and Weowaopila Stream. As shown in Figure 2, an irrigation ditch flows down the slope and then cuts against the natural slope (the ditch is up to 6 feet below the natural ground in some places) towards wetland 1. Drawing a line from the oxbow turn in the ditch, it is likely that water could jump the ditch during high flows. The false color infrared aerial photographs show a line in this area. Groundwater and surface runoff trickles in from the top of the ravine creating a waterfall down the steep slope. During a February 4, 2000 walkthrough of the cane haul roads above wetlands #1 and #2, a 100-150 foot section of the cane road closest to wetland #2 was moist and/or ponded. *Cyperus polytrachyos* and *Fimbristylis littoralis* (both listed as facultative plants) were seen in the road. However, no defined waterways were found. The natural topography slopes towards the ravine in wetland #2.

The slopes of the ravine are dominated by guava and hau. Soils at the base of the ravine are dark, soft and contains a lot of fine material. At the base of the 'waterfall', the slope becomes gentler and the ravine gets wider. Sword tails (*Xiphophorus helleri*), guppies (*Poecilia sp.*), and bullfrogs were observed in the upper reaches of this wetland. The hau dominated ravine continues parallel to the roadway for several hundred feet before it turns into a California grass meadow.

Sporadic pockets of primrose willow (*Ludwigia octovalvis*) occurs in the California grass meadow along with pockets of open water. A small open ditch 2 to 3 feet wide extends from the hau towards the stream but eventually widens out and becomes indistinguishable. A few specimens of sawgrass (*Cladium jamaicense*) were found within the ditch. *Wedelia trilobata* is common along the roadside in this section of the road and some of it can be found growing in small areas of the California grass meadow. Sword ferns (*Nephrolepis exaltata*) are also common in this meadow. Further downstream, the wetland community is interspersed with other vegetation such as rose myrtle (*Rhodomyrtus tomentosa*) and rose apple (*Syzygium jambos*). Pig trails were seen throughout the meadow and pig wallows were observed under the guava trees.

Several data points were taken and the border of the wetland was flagged as shown on figure 6. The data sheets for these data points can be found in Appendix C.

The functions and values of this wetland include nutrient uptake, soil stabilization, sediment trapping, ground water recharge, flood storage and habitat for nonnative aquatic species in the areas with open water.

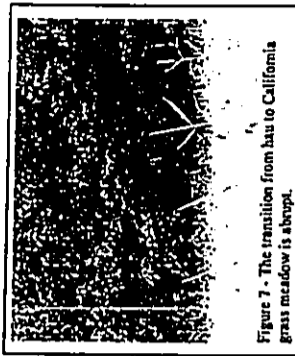
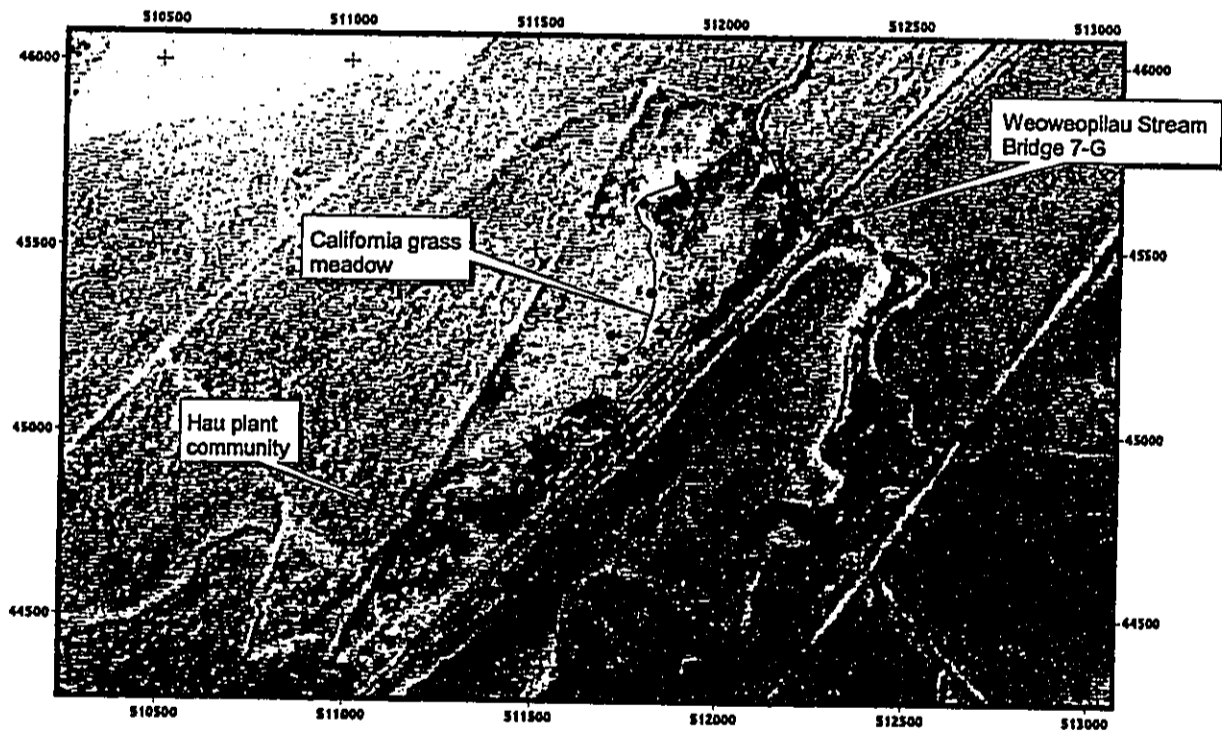


Figure 7 - The transition from hau to California grass meadow is abrupt.



Themes Used

- GPS Point
- Datasheet
- GPS Line
- Wetland Boundary

500 0 500 Feet
 100 0 100 200 Meters

Figure 6 - Wetland 2
 Kaunuaui Highway Improvements

3.5 Wetland #3

According to the DEIS and supplementing documents, this wetland is supposed to occur on the east side of Hainakaunalehua Stream which flows towards Brewer Environmental's facilities at Puhii. This area is a very steep gully with mango and java plum trees at the top edge. Approximately 40 feet below is a flowing perennial stream. Sugar cane is currently being grown in the surrounding area and the fields were recently plowed. There were no indicators of a wetland within the area. See Chapter 4.3. for further information on this water of the U.S.

3.6 Wetland #4

A dirt road splits the two forks of Puhii Stream at their confluence on the upstream side of Kaunualii Highway. Wetland #4 is in the east fork of Puhii Stream as shown on figure 7a. The west fork of the stream appears intermittent and is not a wetland.

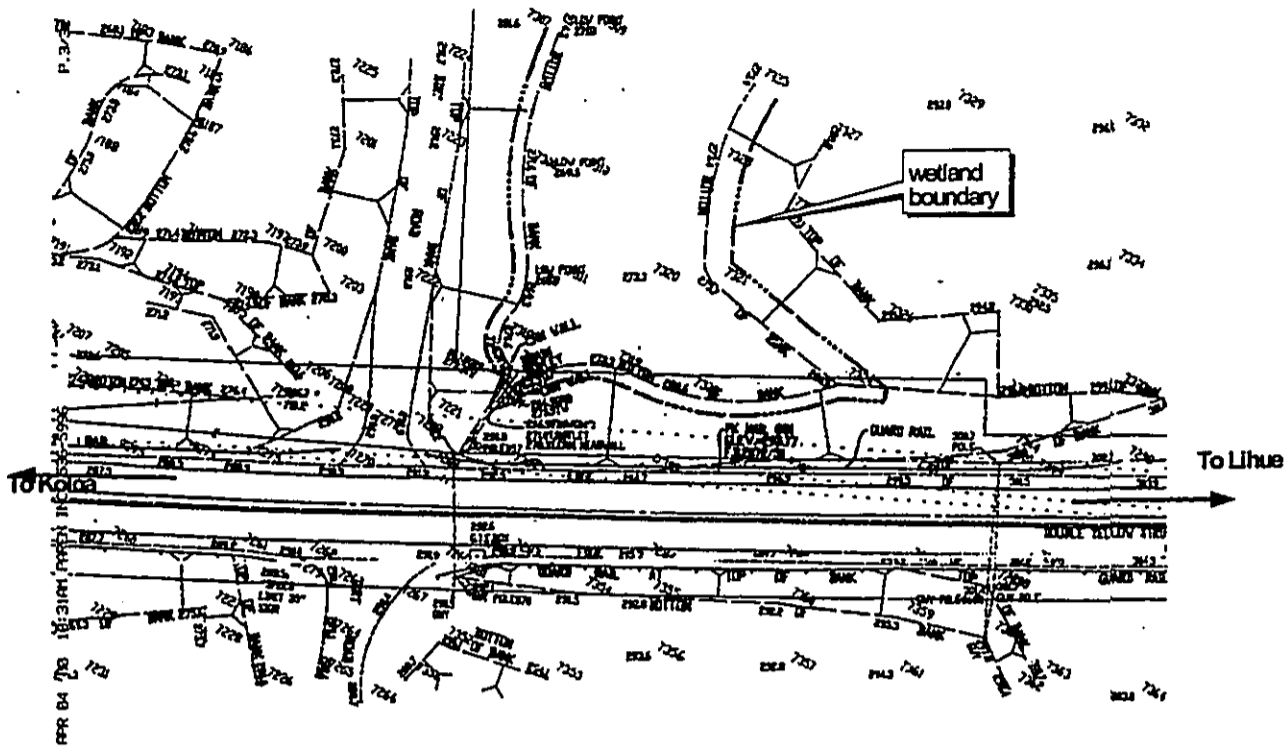
The eastern fork had a gently flowing stream which exited under the highway through a 2-foot-wide by 4-foot-tall culvert. Further description of the east branch streambed and west branch can be found in Chapter 4.3.12.

The stream bed sloped upwards into a bench which contained banana (*Musa x paradisiaca*), white shrimp plant (*Justicia betonica*), castor bean (*Ricinus communis*) and California grass. A lot of this vegetation was covered by vines such as purple allamanda (*Thunbergia laurifolia*) and Koa'i 'awa (*Sporobolus indica*). The slope got steeper and continued until it reached a second bench.

Outflow from the east fork is controlled by a 2-foot-wide by 4-foot-high culvert beneath Kaunualii Highway. This is likely to be inadequate in times of high flow but the road is at least 25 feet higher than the culvert invert elevation and there is substantial area where water can be stored. The low outflow probably contributes to the wetland conditions along the banks of this stream.

The soils in this area is mapped as Marsh (M2). Soils samples confirmed this designation.

Dominant wetland vegetation included California grass, homohono, and Jobs tears. Upland and facultative plants such as Elephant grass (*Pennisetum purpureum*), *Macaranga tanarius*, and woodrose (*Merrillia tuberosa*) were also present. Approximately 250 feet from the highway, bulrush was growing along the edges of the wetland.



Note: Map provided by ParEn Inc.



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Figure 7a - Wetland #4
 Kaunualii Highway Improvement Project

The functions and values of this wetland include nutrient uptake, soil stabilization, sediment trapping, ground water recharge, flood storage and habitat for nonnative aquatic species in the areas with open water.



Chapter 4 - Other Waters of The U.S.

4.1 General

Chapter 3 described the wetlands within the project corridor. Chapter 4 will describe other waters of the U.S. (that are not wetlands) which are subject to regulation under Section 404 of the Clean Water Act. None of the streams or drainageways within the project corridor are considered navigable nor are they subject to interstate commerce. The waterways are also well above the tidal influence. Based on these considerations, none of the activities from this project are subject to Section 10 of the River and Harbor Act regulations.

4.2 Methodology

The State DOT's engineering consultant, ParEn, Inc., provided the Corps with excerpts from a draft set of blue-line engineering drawings which show the existing road, proposed improvement alignment, and the bridge and culvert crossings. The drawings indicate the size and type of both existing and replacement culverts and bridges. These drawings were cross referenced with the U.S. Geological Survey topographic maps to verify that marked water courses were not missed.

All of the indicated culverts and bridge crossings plus three culverts west of the highway intersection with Kahili Mountain Road are listed in Table 1 and shown in figure 8 (oversize drawing, see pocket at end of report). Most of the culverts were checked and verified although some ends of the culverts were inaccessible due to heavy vegetation and steep slopes. In these cases, the surrounding areas upstream and downstream were noted.

The waterways crossing beneath Kaunualii Highway through culverts and bridges were classified, for informational purposes, into six general categories: (1) perennial streams; (2) intermittent streams; (3) agricultural drainage ditches; (4) highway drainage ditches; (5) other drainage ditches; and (6) irrigation ditches. Named streams within the project corridor included Weoweopila Stream, Halenahu Stream, Hulcia Stream, Hainakaunahua Stream, Puhi Stream, Puali Stream and Nawiliwili Stream.

4.3 Descriptions of Culvert and Bridge Crossings

4.3.01 Tree Tunnel Bypass Alternative (Culverts COE-1, COE-2, COE-3, #1 & #2)

The State DOT Highways Division held a public meeting on Kauai in January, 2000. Speakers at the meeting expressed concerns about the proposed project impact on the tree tunnel at Maluhia Road. One of the people at the meeting suggested an alternative to bypass Maluhia Road and wetland #1 and #2 by branching off the existing Kaunualii

Table 1 - Stream and Culvert Crossings Beneath Kamuali Highway

Name or description	Watershed	Location description	ID#	Sheet #	Type	Size	Water Upstream?	Water Downstream?	Water of the US?	Approx height from invert road	Plants	Animals	Photos	Type
Culvert #COE-1	drainage ditch	Culvert #1: Pole 242, 150' west	COE #1	n/a	Double box culvert	26x18	No	No	No	12'	Hau, banana, ginger	None	D12, # 8, 7	Ag Drainage
Culvert #COE-2	drainage ditch	Culvert #2: Pole 228, 70' west	COE #2	n/a	RCP	36"	No	No	No	12'	none	None	D12, # 5, 8, 10	Ag Drainage
Culvert #COE-3	drainage ditch	Culvert #3: Pole 234, 30' east	COE #3	n/a	RCP	24"	No	No	No	6'	none	None	D12, # 4	Ag Drainage
Culvert #1	abandoned ditch	Line site of pole 228, 2nd pole Kamala side of	#1	C-1	RCP	30"	No	No	No	14 R	Jobs Team, Bidwa, octopus tree	None	D7, #8	Ag Drainage
Culvert #2	abandoned ditch	Central @ Nuhou, pole on Line Side	#2	C-2	Box culvert	6x3	No	No	No	4 R	Jobs Team, Ludwig, octopus tree	None	D7, #9	Ag Drainage
Bridge 7-E	(ditch to reservoir)	Look for guard rails at mile marker 7	#3	C-2	Double box culvert	10x9	Yes	Yes	No (part of old irrigation system)	12 R	Jobs Team, Ludwig, octopus tree	None	D7, #10-11	Irrigation ditch
Bridge 7-F	Wishonou	RC box culvert	#4	C-3	RC Box Culvert		Yes	Yes	No	10 R	Jobs Team, Ludwig, octopus tree	None	D7, #10-11	Irrigation ditch
Culvert #5	(ditch to wetland)	All pond of Wetland No. 1	#5	C-3	Pipe	30"	No	No	No	15' at upstream	Dry upland for 25' up stream before ponded water	None		Other drainage
Culvert #6	abandoned ditch	Line site of pole 228, 2nd pole Kamala side of	#6	C-3	Pipe	20"	No	No	No	10'		None		Other drainage
Culvert #7	roadway	Wetland 2	#7	C-3	RCP	24"	No	No	No	15'		None		Road drainage
Culvert #8	Wetland 2	Mid wetland 2, Pole 204	#8	C-4	RCP	18"	Yes	Yes	No	15 US; 7 DS		None		Road drainage
Bridge 7-G	Wetland 2	Mid wetland 2, Pole 204	#9	C-4	RCP	18"	Yes	Yes	No	15 US; 7 DS		None		Road drainage
Culvert #10	Wetland 2	before road	#10	C-4	RCP	24"	Yes	Yes	Yes	15 US; 7 DS		None		Road drainage
Culvert #11	Wetland 2	turnout after ironwood grove	#11	C-5	Box culvert	4x4	Yes	Yes	Yes	20 R upstream, 25 R downstream	Richus comments	None		Road drainage
Culvert #12	Wetland 2	Grated drain inlet on metal side of road	#12	C-5	Pipe	24"	No	No	No			None		Perennial Stream
Wetland 3	Wetland 3	Wetland 3	#13	n/a			No	No	No			None		Road drainage
Culvert #14	Wetland 3	Mid wetland 5	#14	C-6	Drain	24"	No	No	No	4 R		None		Road drainage
Highway Bridge	Wetland 3	Highway Bridge	#15	C-7	Bridge		Yes	Yes	Yes			None		Road drainage
Wetland 4	Wetland 4	Wetland 4	#16	n/a			Yes	Yes	Yes			None		Perennial Stream
Culvert #17	Wetland 4	Conc lined ditch	#17	C-7	Pipe	24"	No	No	No	3 R		None		Perennial Stream
Culvert #18	Wetland 4	drainage ditch	#18	C-7	Pipe	24"	No	No	No			None		Perennial Stream
Culvert #19	Wetland 4	drainage ditch	#19	C-7	Pipe	24"	No	No	No			None		Perennial Stream
Culvert #20	Wetland 4	drainage ditch	#20	C-8	RCP	24"	No	No	No			None		Perennial Stream
Culvert #21	Wetland 4	drainage ditch	#21	C-8	RCP	24"	No	No	No			None		Perennial Stream
Culvert #22	Wetland 4	drainage ditch	#22	C-8	Drain box	6x6	Yes	Yes	Yes	4 R upstream side		None		Perennial Stream
Culvert #23	Wetland 4	drainage ditch	#23	C-8	Pipe	24"	No	No	No			None		Perennial Stream
Culvert #24	Wetland 4	drainage ditch	#24	C-8	Pipe	24"	No	No	No			None		Perennial Stream
Culvert #25	Wetland 4	drainage ditch	#25	C-8	Pipe	24"	No	No	No			None		Perennial Stream
Culvert #26	Wetland 4	drainage ditch	#26	C-8	Pipe	24"	No	No	No			None		Perennial Stream
Culvert #27	Wetland 4	drainage ditch	#27	C-8	Pipe	24"	No	No	No			None		Perennial Stream
Culvert #28	Wetland 4	drainage ditch	#28	C-9	Pipe	24"	No	No	No			None		Perennial Stream
Wetland 5	Wetland 5	Wetland 5	#29	C-9	Pipe	24"	No	No	No			None		Perennial Stream
Culvert #29	Wetland 5	Wetland 5	#29	C-9	Pipe	24"	No	No	No			None		Perennial Stream
Culvert #30	Wetland 5	Wetland 5	#30	C-10	Pipe	24"	Yes	Yes	No (part of old irrigation system)	3 R		None		Perennial Stream
Culvert #31	Wetland 5	Wetland 5	#31	C-10	Pipe	48"	Yes	Yes	No (part of old irrigation system)			None		Perennial Stream
Culvert #32	Wetland 5	Wetland 5	#32	C-11	Pipe	30"	Yes	Yes	No (part of old irrigation system)			None		Perennial Stream
Culvert #33	Wetland 5	Wetland 5	#33	C-11	Pipe	12"	Yes	Yes	No (part of old irrigation system)			None		Perennial Stream
Wetland 6	Wetland 6	Wetland 6	#34	C-11	Pipe	24"	Yes	Yes	No (part of old irrigation system)	15 US; 15 DS		None		Perennial Stream
Kobas of Wetland 4	Wetland 6	Wetland 6	#35	C-11	Drain box	11x7	Yes	Yes	Yes			None		Perennial Stream
Wetland 4	Wetland 6	Wetland 6	#36	C-11	Pipe	60"	Yes	Yes	Yes			None		Perennial Stream
Wetland 4	Wetland 6	Wetland 6	#37	C-12	Box culvert	12x12	Yes	Yes	Yes			None		Perennial Stream
Wetland 4	Wetland 6	Wetland 6	#38	C-12	Box culvert	12x12	Yes	Yes	Yes			None		Perennial Stream
Wetland 4	Wetland 6	Wetland 6	#39	C-13	Parabolic culvert		Yes	Yes	Yes			None		Perennial Stream
Wetland 4	Wetland 6	Wetland 6	#40	C-13	Parabolic culvert		Yes	Yes	Yes			None		Perennial Stream
Wetland 4	Wetland 6	Wetland 6	#41	C-14	Box culvert	4x4	No	No	No			None		Perennial Stream
Wetland 4	Wetland 6	Wetland 6	#42	C-14	Box culvert	4x4	No	No	No			None		Perennial Stream
Wetland 4	Wetland 6	Wetland 6	#43	C-14	Box culvert	4x4	No	No	No			None		Perennial Stream
Wetland 4	Wetland 6	Wetland 6	#44	C-15	Compacted arch	75x55	No	No	No			None		Perennial Stream
Wetland 4	Wetland 6	Wetland 6	#45	C-15	Compacted arch	75x55	No	No	No			None		Perennial Stream
Wetland 4	Wetland 6	Wetland 6	#46	C-16	Pipe	24"	No	No	No			None		Perennial Stream
Wetland 4	Wetland 6	Wetland 6	#47	C-16	Pipe	18"	No	No	No			None		Perennial Stream
Wetland 4	Wetland 6	Wetland 6	#48	C-16	Pipe	30"	No	No	No			None		Perennial Stream
Wetland 4	Wetland 6	Wetland 6	#49	C-16	Pipe	30"	Yes	Yes	Yes			None		Perennial Stream

Highway near the Knudsen Gap and following an abandoned cane haul road to Kahili Mountain Road (figure 9).

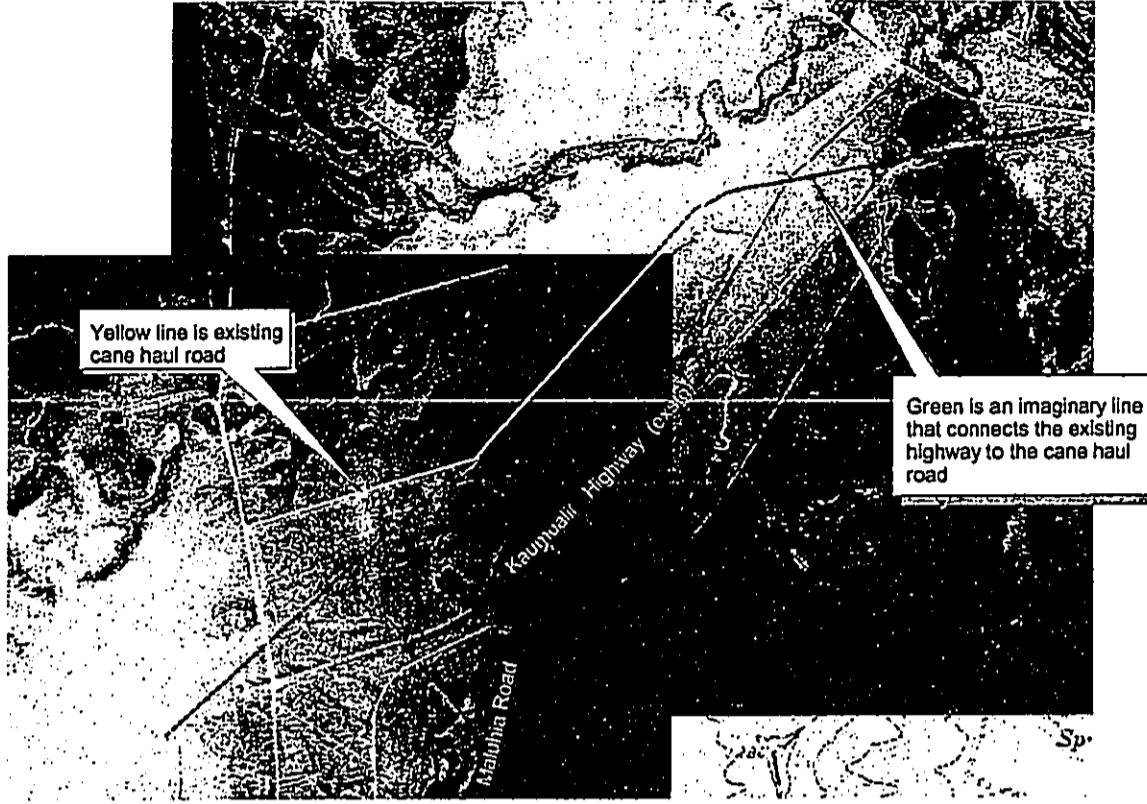
On January 31, 2000, the cane haul road was walked to determine if any streams or wetlands were present. We went through the first gate on the Koloa side of Halfway Bridge and followed the access road west-northwest over Weowopilaun and Kuia Streams. Both of these streams are perennial at their crossings beneath this main access road. The abandoned cane haul road was blocked by a high berm and overgrown. We parked on the access road and walked the haul road in a southwesterly direction all the way to Kahili Mountain Road.

Approximately 2,000 meters from the access road, we came to a 3-way fork in the road. We followed the southeast fork (perpendicular to haul road) until its intersection with Weowopilaun Stream. This perennial stream is considered a water of the U.S. and would need to be crossed at some point if the 'tree tunnel bypass' alternative is selected. Two old drainage ditches also crossed the cane haul road. Water was not seen in either ditch. The fields adjacent to the road are fallow and these ditches were overgrown by vegetation similar to the fields. On February 4, 2000, the access road was revisited to find the source of water for the irrigation ditch at wetland 1. The ditch was at least 6 feet below the surrounding ground elevation and flow was going against the slope of the surrounding features. The unlined irrigation ditch had a trapezoidal cross section. Both ditches are not regulated as waters of the U.S. No wetlands were seen nor are any wetlands anticipated to be impacted in this area if the tree tunnel bypass alternative is selected.

Because the alternative would extend to the next horizontal curve on the Kēhaha side of the existing alignment, we checked the three culverts in Kaunuaui Highway beyond Kahili Mountain Road. These culverts are named COE-1, COE-2, and COE-3 in Table 1. COE-1 is a 24-inch RCP that has headwalls on both ends of the culvert. COE-2 is a 6-foot-wide by 3-foot-high culvert. Culvert #1 and #2 are identified in the project drawings and drain the same fields from one side of the highway to the other as the COE culverts. No water was seen in the depressions upstream or downstream of any of these five culverts. The drainages were used for agricultural purposes that have been abandoned. None of these drainage ways are considered waters of the U.S.

4.3.02 Drainages near Wetland #1

Bridge 7-E is located near mile marker 7 approximately 300-350 meters east of the pond. The ditch flows directly to Mauka Reservoir. Flowing water 1-2 inches deep was observed during the February 2 visit. Jobs tears, octopus tree, and Beggar's tick (*Bidens pilosa*) were observed in the ditch. This ditch is a part of the agricultural irrigation system and is not a regulated water of the U.S.



1. Based on the 1/12/00 meeting, it was determined that the alternative alignment was proposed at a public hearing and that it is based on using the cane haul road parallel to Kaunuaui Highway.
2. The wetland delineation will focus on the wetlands within the existing alignment and will try to also catch the cane haul road. No commitment is made to delineating wetlands through the vegetated non road areas but if possible, we will check.

Figure 9 - Maluhia Road (Tree Tunnel) Bypass Layout

The crossings near the pond and irrigation system which comprise Welland #1 include Bridge 7-F and culverts #5 and #6. A berm separates the pond from the irrigation ditch which needs to take a turn to get around the pond and passes under Bridge 7-F. Vegetation around the pond includes hau, ginger, octopus tree, sourbush (*Pluchea carolinensis*), and guava. The pond is assumed to be at least 3-4 feet deep. Frogs and mosquito fish were observed at this pond. According to a Kauai resident, the pond was constructed for aesthetic purposes but has been abandoned and no longer maintained. The pond is considered a water of the U.S.



Figure 10 - Irrigation ditch on upstream side of pond at Welland #1.

An irrigation ditch flows around the west side of the pond (figure 10), crosses beneath Bridge 7-F (figure 11) and feeds into Mauka Reservoir. The irrigation ditch crosses under Bridge 7-F and flows along the western side of welland 1a. A water control structure regulates water flowing through the irrigation ditch and diverts some of its flow through welland 1a with the remaining water flowing to Mauka Reservoir. Smallmouth bass (*Micropterus salmoides*) were observed in the ditch.

An overgrown drainageway runs from the pond in a Lihue direction parallel to Kaunualii Highway. This drainageway is assumed to be an overflow ditch for the pond as the irrigation ditch (which runs counter to the ground slope in this location) and its adjacent berm would prevent water from the mountains from entering the ditch. Debris blocks the narrow portion of the ditch 25 feet upstream from its outlet at culvert #6. This results in several inches of ponded water in a small area upstream of the culvert. The culvert itself is dry and heads to a dry ditch on the Lihue side of Malakia Road. Dominant species in the ditch on the mauka side of Kaunualii Highway include guava and octopus tree. This drainageway appears to flow very infrequently as evidenced by the proliferation of upland plants, clogged drainage way and small (24 inch diameter) culvert. Thus the overflow ditch is not considered a water of the U.S.



Figure 11 - Irrigation ditch on downstream side of Bridge 7-F.

The crossings near the pond and irrigation system which comprise Welland #1 include Bridge 7-F and culverts #5 and #6. A berm separates the pond from the irrigation ditch which needs to take a turn to get around the pond and passes under Bridge 7-F. Vegetation around the pond includes hau, ginger, octopus tree, sourbush (*Pluchea carolinensis*), and guava. The pond is assumed to be at least 3-4 feet deep. Frogs and mosquito fish were observed at this pond. According to a Kauai resident, the pond was constructed for aesthetic purposes but has been abandoned and no longer maintained. The pond is considered a water of the U.S.

4.3.03 Culverts at Welland #2 (Culverts #7-8)

Culverts #7 and #8 carry surface runoff from the makai side towards the lower side of the road at Welland #2. These are small diameter culverts (24-inch and 18-inch) serving the drainage ditches running along the highway. These do not carry waters of the U.S.

4.3.04 Weoweopillau Stream

Bridge 7-G is a choke point in the highway with very little shoulder. Water is perennial and flows in a makai to mauka direction under the bridge (Figure 12). The water continues flowing parallel to the highway and eventually flows into Huleia Stream. Weoweopillau Stream is a water of the U.S. and the plans indicate that the double box culvert (10x9) at Kaunualii Highway will be replaced.



Figure 12 - Downstream side of bridge 7-G crossing Weoweopillau Stream.

4.3.05 Weoweopillau Stream to Halfway Bridge (Culverts #10-12, 14)

Four culverts were noted in this stretch of highway. Heading from Malakia Road towards Lihue, the road cuts through a small section of the mountain. Ironwood trees are planted on the west side of the cut. An unmarked and unnamed stream crosses the highway at culvert #11 and hugs the mountain (Figure 13) where it is presumed to be a tributary to the nearby Weoweopillau Stream. Culvert #12 is a grated drain inlet which catches surface water at the highway. Culverts #10 and #14 (near mile marker 5) also service the highway drainage system during rains. Culvert #14 services a concrete lined ditch that sends the runoff from the highway toward Huleia Stream. Only the tributary at culvert #11 would be regulated as a water of the U.S.



Figure 13 - Looking downstream of culvert #11.

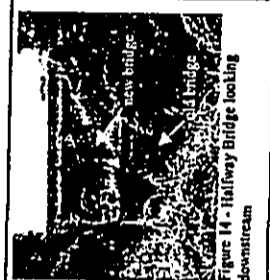


Figure 14 - Halfway Bridge looking downstream.

4.3.06 Halfway Bridge at Huleia Stream

The stream was visited and both the old and new bridge structures are present (Figure 14). This major stream is a water of the U.S. and will need to

be bridged if the road surface elevation is to be similar to the existing road.

4.3.07 Huleia Stream to Halenahua Stream (Culverts #17-#20)

Drainage ditches are spread through this section to move water across the highway from one fallow cane field to another. Guinea grass (*Panicum maximum*) was abundant in these ditches. All of the pipes are 24 inches in diameter and most of the ditches contained no water upstream or downstream of the highway. Culvert #20 was the exception with an agricultural field above (Figure 15) and an intermittent stream below (Figure 16). The downstream end of culvert #20 is the only waters of the U.S. in this section of Kaunuaui Highway.



Figure 15 - Upstream side of culvert #20.



Figure 16 - Downstream side of culvert #20.

4.3.08 Halenahua Stream (Culvert #21)

The Halenahua Reservoir regulates the water flow in this stream. Flashboards control the water exiting the reservoir (Figure 17). At least 30 feet of fill has been placed to construct the road. Double 8x8 box culverts carry the flow beneath the road. Ginger, heliconia, mango, and other planted or escaped crops are found at the bottom and banks of the stream. Although Halenahua Stream is part of an established irrigation system, it also appears to be a natural stream and it is highly probable that the reservoir itself was created within an established stream system. Thus Halenahua Stream is considered a water of the U.S.



Figure 17 - Flashboards at outlet of Halenahua reservoir control water in Halenahua Stream.

4.3.09 Halenahua Stream to Hawaiian Humane Society (Culverts #22-27)

Six 24-inch diameter culverts can be found in this stretch of Kaunuaui Highway that has fallow cane fields on both sides (Figure 18). Similar to the Huleia to Halenahua Stream section, these drainage culverts are not considered waters of the U.S.



Figure 18 - Typical field upstream of culverts #22-27.

4.3.10 Hawaiian Humane Society to Lihue side of Kipu Road (Culvert #28, 30-32)

These culverts are part of an operating irrigation system controlled by flashboards. The flashboards can be adjusted parallel and perpendicular to the ditches to allow water to allow water to be siphoned off of the main system (Figure 19). These irrigation ditches are not considered waters of the U.S.



Figure 19 - Typical irrigation ditch with flashboards installed and at overflow.

4.3.11 Hainakaunahua Stream (Culvert #34)

Hainakaunahua Stream crosses Kaunuaui Highway through culvert #34 at the low spot in the highway fronting Brewer Environmental Company (Figure 20). We did not visit the culverts on either side due to the heavy vegetation and steep slopes. On the upstream end of this culvert, trees vegetate its steep slopes. Water was flowing, as wide as 25 feet across with typical depths of 6-12 inches.



Figure 20 - Downstream of culvert #34 looking towards Brewer Environmental Co.

Downstream of the culvert, *Macaranga tanaritis*, California grass, and castor bean choke the waterway. Several hundred feet downstream of the culvert and prior to reaching the Brewer buildings, the stream takes a bend and flows parallel to the highway. Hainakaunahua Stream is considered a water of the U.S.

4.3.12 Puhi Stream (Culvert #35b)

Lower portions of the west fork was planted in banana, eggplant and other crops (Figure 21). Fencing and large dogs prevented us from looking for the culvert and limited our

access to the view from above. A sprinkler system was seen at the low point closest to the highway. This area did not look like it contained wetland vegetation. This could be due to excellent drainage conditions provided by the large 4 x 6 earthen tunnel which was observed from the downstream side.



Figure 21 - Puhī Stream, west fork

In contrast, the east fork had a gently flowing stream with its outflow controlled by a 2-foot-wide by 4-foot-high culvert beneath Kaunualii Highway. This is likely to be inadequate in times of high flow but the road is at least 25 feet higher than the culvert invert elevation and there is substantial area where water can be stored. The low outflow probably contributes to the wetland conditions along the banks of this stream. Water appeared to be permanent in this fork as upstream the drainage headed mauka before making a sharp turn towards Lihue. Bulrush, Job's tears, elephant grass, California grass and honohono were found in the stream bed.



Figure 22 - Puhī Stream, east fork, upstream of highway.

The stream bed sloped upwards and had a bench which contained banana (*Musa x paradisiaca*), white shrimp plant (*Justicia betonica*), castor bean and California grass. Purple allamanda (*Thunbergia laurifolia*) and *koali'awa* (*Pomoea indica*) covered much of the bananas (Figure 22). A gradual slope increase was noted and continued until a second bench was noted. For further description of the area see the description of wetland 4 in Chapter 3.

Downstream of the highway, the two forks merge into one drainage dominated by a heavy thicket of hau. It was determined that this area contained a stream and a wetland, both of which are waters of the U.S. and subject to regulation under Section 404 of the Clean Water Act.



Figure 23 - Upstream side of culvert #37.

4.3.13 Culvert #37 Connecting Puhī Stream Between Reservoirs

On the Koloa side of Puhī Road and the Grove Farm offices, Puhī Stream crosses beneath Koloa Highway through culvert #37. The drainage way connects two reservoirs in series upstream and one reservoir downstream of this culvert. This culvert carries a 10-15 foot wide perennial stream across Kaunualii Highway towards Nawiliwili (Figure 23). The culvert inverts are estimated to be 15-20 feet below the road. Plants in the area include bamboo, banana, hau and *Macaranga tanarius*. Similar to the situation at Halenahau

Stream, this is an agricultural ditch connecting two reservoirs that may all be part of a natural stream system. Because of this situation, it was determined that this waterway is a water of the U.S., subject to regulation under Section 404 of the Clean Water Act.



Figure 24 - Ditch at Kilohana Museum entrance road looking downstream at culvert #41

4.3.14 Kauai Community College to Kilohana Museum (Culverts #39-41)

Culverts #39 and #40 drains the grass area fronting Kauai Community College. Culvert #41 drains the roadway in the Kilohana Museum area (Figure 24). There was no water upstream or downstream of the culverts and these are not waters of the U.S.

4.3.15 Taco Bell to Lihue Cemetery (Culverts #43-45)

Culvert #43 is a drain inlet between Burger King and Taco Bell. The inlet services just the highway area and not the adjacent shopping center parking lot. Culverts #44 and #45 convey road drainage as well. At the time of the visit, no water was observed upstream or downstream of the culverts and none of the three drainage culverts are considered waters of the U.S.

4.3.16 Nawiliwili Stream

During the week of the field survey, a new drainage structure was being constructed over a tributary of Nawiliwili Stream at Kaunualii Highway just below the intersection with Rice Street. A portion of the traffic was diverted at Hardy Street through other streets and returning to the highway near the shopping center at Nawiliwili Road. Work in tributaries of Nawiliwili Stream was authorized by Department of the Army permit number 990000207.



Figure 25 - Nawiliwili Stream looking upstream from Lihue

Downstream of that project, the two-lane Lihue Mill Bridge crosses Nawiliwili Stream west of Hoomana Road (figure 25, look for Hawaii Visitor Bureau sign to Lihue Lutheran Church). This is a water of the U.S.

Chapter 5 - Summary and Conclusions

5.1 Summary of Findings on Wetlands

Two of the four wetlands identified on the construction were delineated. The two wetlands were too big geographically to economically survey the entire boundary. However, false color infrared photos were digitized to get an approximation of wetland size.

Wetland 2 contained 5.6 acres of wetlands of which 2.0 acres was dominated by hau, and 3.6 acres consisted of the California grass/fern plant community. The wetland is part of a tributary to Weowepilau Stream. The wetland functions and values identified for this wetland are soil stabilization, water filtration, habitat for nonnative aquatic species, ground water recharge, nutrient uptake, and pig habitat.

Wetland 4 contained 9,700 square feet of wetlands within 125 feet of Kaunualii Highway. The functions and values of this wetland are the same as wetland 2 with greater potential for flood storage and ground water recharge.

The proposed road alignments will need to be overlaid on the wetland maps to determine the proposed amount of wetland impacts.

5.2 Waters of the U.S. Other Than Wetlands

A total of 44 drainageways were checked of which there were 8 perennial streams, 0.5 intermittent streams (culvert 20 was an agricultural drainage upstream and an intermittent stream downstream), 14.5 agricultural drainage systems, 9 road drainage systems, 5 other drainage systems, and 7 irrigation systems. A total of 10 waterways (not including wetlands) were found to be waters of the U.S. as shown in figure 8. A pond was also determined to be a water of the U.S.

5.3 Recommendations to Avoid or Minimize Wetland Impacts

Improvements to Kaunualii Highway could avoid Wetland 2 by using the existing cane haul road and bypassing the present intersection with Maluhia Road. Culverts or bridges would be required to ensure continued flow which is likely to affect the hydrology to Wetland 1a and to Wetland 2.

Based on the mapping information, ParEn was able to modify the alternative that would widen Kaunualii Highway along the entire project limits by alternating the widening between the mauka and makai sides so that both Wetland 2 and the Maluhia Road tree tunnel (including Wetlands 1A and 1B) would be avoided while still maintaining design standards.

This new alternative would eliminate the need to consider the alternative that would realign the highway from Knudsen Gap to the west end because the modified alternative accomplishes the same objectives without the need to use an entirely new corridor.

To minimize impacts to waterways and wetlands, crossings should be bridged where possible and cost effective. Another method of reducing the footprint of fills in wetlands is to use vertical retaining walls in lieu of unrestrained compacted fill.

To minimize impacts to wetland functions, it is recommended that:

- Existing crossings be maintained or replaced.
- If the tree tunnel bypass is used, drainage systems should be provided to maintain overland flow towards wetland 2.
- Best Management Practices include provisions to revegetate exposed soils as soon as possible after construction.
- Silt fences, sediment traps and/or other soil containment devices should be constructed and maintained during construction to minimize sedimentation of wetlands and other waters of the U.S.
- A vegetated buffer zone between the highway and wetlands be considered in the design phase.

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Appendices are not included. They can be reviewed at the State of Hawaii Department of Transportation, Highway Division, Kaula District office.



APPENDIX G

Avifaunal and Feral Mammal Survey Report

AVIFAUNAL AND FERAL MAMMAL SURVEY FOR KAUNUALII HIGHWAY
IMPROVEMENTS - HH 0.0 TO 7.5, KAUAI

INTRODUCTION

The purpose of this report is to summarize the findings of a bird and mammal field survey for the proposed Kaunualii Highway Improvements Project HH 0.0 - 7.5, Kauai. Figure One and two shows the location of the survey. Also included in the report are references to pertinent literature and unpublished reports.

Prepared for
Park Engineering
by

The objectives of the field survey were to:

- 1- Document what bird and mammal species occur on the property or may likely occur given the available habitats and limitations imposed by predators and disturbance.
- 2- Provide current baseline information on the relative abundance of each species.
- 3- Note the presence or likely occurrence of any native fauna particularly any that are considered "Endangered" or "Threatened".
- 4- Focus the field survey work primarily on wetland habitats located along the section of the highway proposed for improvements.

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24 April 1998

mexicanus); Common Moorhen (Callinula chloropus); Hawaiian Coot (Fulica alai) and Hawaiian Duck or Koloa (Anas wyvilliana). The latter four species are federally and state listed as endangered in Hawaii. Recently the endangered Nene or Hawaiian Goose (Neochen sandwicensis) was reintroduced to Kauai. This bird is not confined to wetlands but utilizes a variety of habitats. None of these species were observed during the course of this survey. An earlier study of the Huleia stream drainage (Bruner 1992) found Koloa, Hawaiian Coot, Common Moorhen and Black-crowned Night Heron.

Migratory Birds:

Migratory shorebirds breed in the arctic and winter in Hawaii. The Pacific Golden-Plover (Pluvialis fulva) is the most abundant migratory shorebird in Hawaii (Hawaii Audubon Society 1993). They forage on lawns, pastures, and fields as well as along shorelines. Extensive research on this species, both in Hawaii and Alaska, has yielded much information on their life history (Johnson et al. 1981, 1989, 1993). Twenty one plover were seen on the survey. They were either foraging along the roadside or on lawns at and around Kauai Community College. Plover are not threatened or endangered. Wandering Tattler (Heteroscelus incanus) is another common migrant that forages along shorelines but also utilizes streams and can be found in the interior of islands. None were recorded on this survey but this species

has been recorded along Huleia Stream (Bruner 1992). Ruddy Turnstone (Arenaria interpres) can occasionally be seen on large lawns along with Pacific Golden-Plover. They forage in small flocks. None were recorded on this survey.

Introduced Birds:

A total of 15 species of non-native (introduced) birds were recorded on the survey. Table One gives the names of these species. None of these species are threatened or endangered. Two species, Greater Heblaced Laughing-thrush (Garrulax pectoralis) and Western Meadowlark (Sturnella neglecta), are restricted in Hawaii to the island of Kauai. Most introduced species expected in this area and habitat were observed. Pratt et al. (1987) and Hawaii Audubon Society (1993) provide additional information on introduced birds in Hawaii.

Feral Mammals:

Feral cats (Felis catus), and tracks of feral pigs (Sus scrofa) were the only mammals recorded on the survey. The native endangered Hawaiian Hoary Bat (Lasiurus cinereus semotus) is fairly common on Kauai (Tomich 1986; Kepler and Scott 1990). They forage in a wide variety of habitats from forest to urban. None were recorded on this survey although they could roost and forage in this area.

CONCLUSION

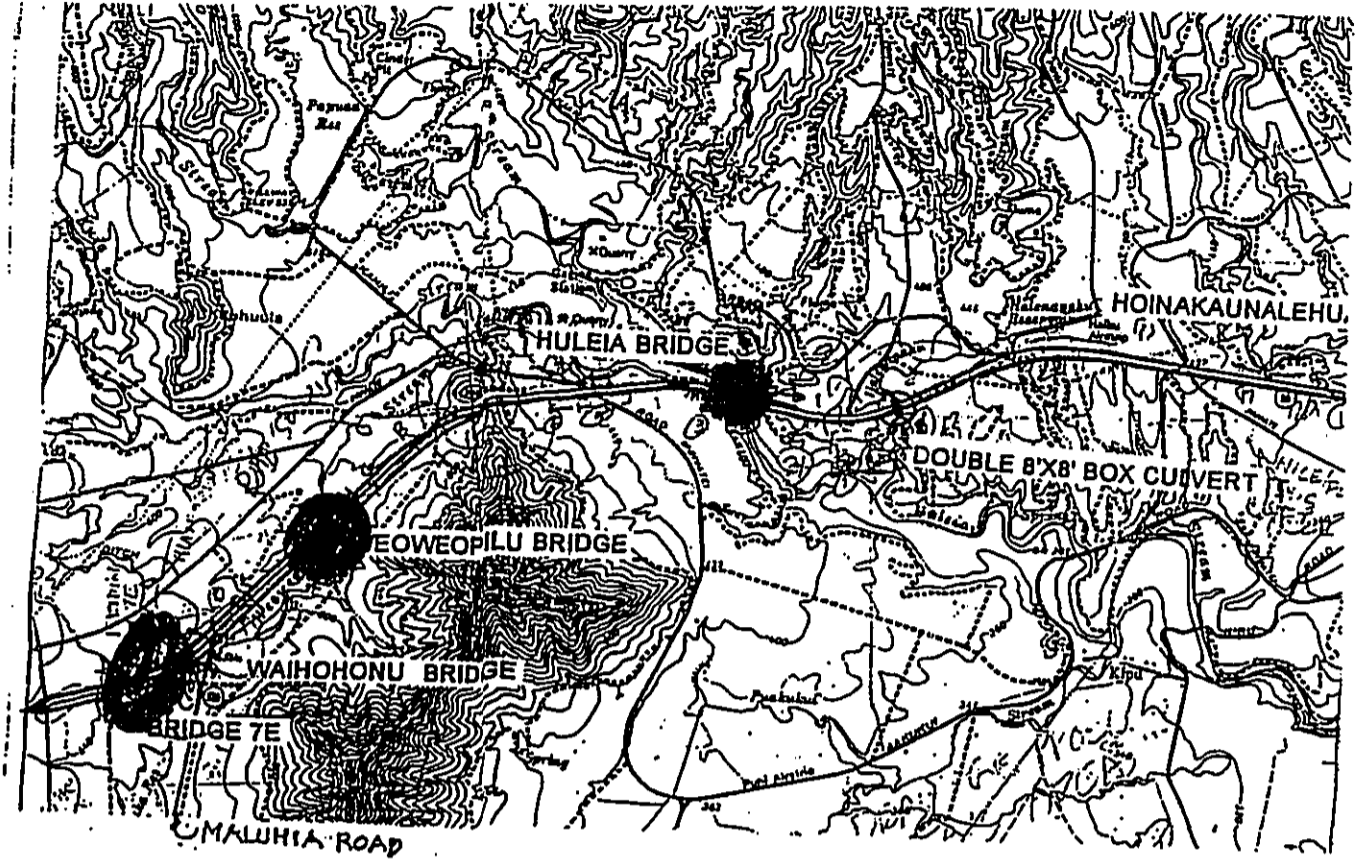
The habitat along the section of proposed Kaunalihi Highway Improvements contains predominantly introduced plants and animals. No native land birds nor waterbirds were recorded. The only migratory species was the Pacific Golden-Plover, the most abundant winter migrant in Hawaii. The introduced species of birds found on the survey were those typical of this region. Feral mammals were limited to common introduced species. Pig tracks were seen near Huleia Bridge. The native and endangered Hawaiian Hoary Bat was not found on the survey but could occur in this area. They are widespread and fairly common on Kauai.

The stream crossings and other wetland areas noted on Fig. 1 and 2 were carefully examined but contained no native waterbirds. Most of these sites are presently too overgrown with vegetation to support waterbirds. However, Huleia Stream is the exception. Earlier investigations found waterbirds along this stream drainage. Kaunalihi Highway crosses Huleia Stream with a relatively new and large bridge. The bridge is several meters above the stream. Vehicle access to the area below the bridge limits the use of this area by waterbirds. There was evidence of human activity in and adjoining the stream at this location.

The proposed plans for improvements to Kaunalihi Highway in the area covered by this survey should have no significant impact on

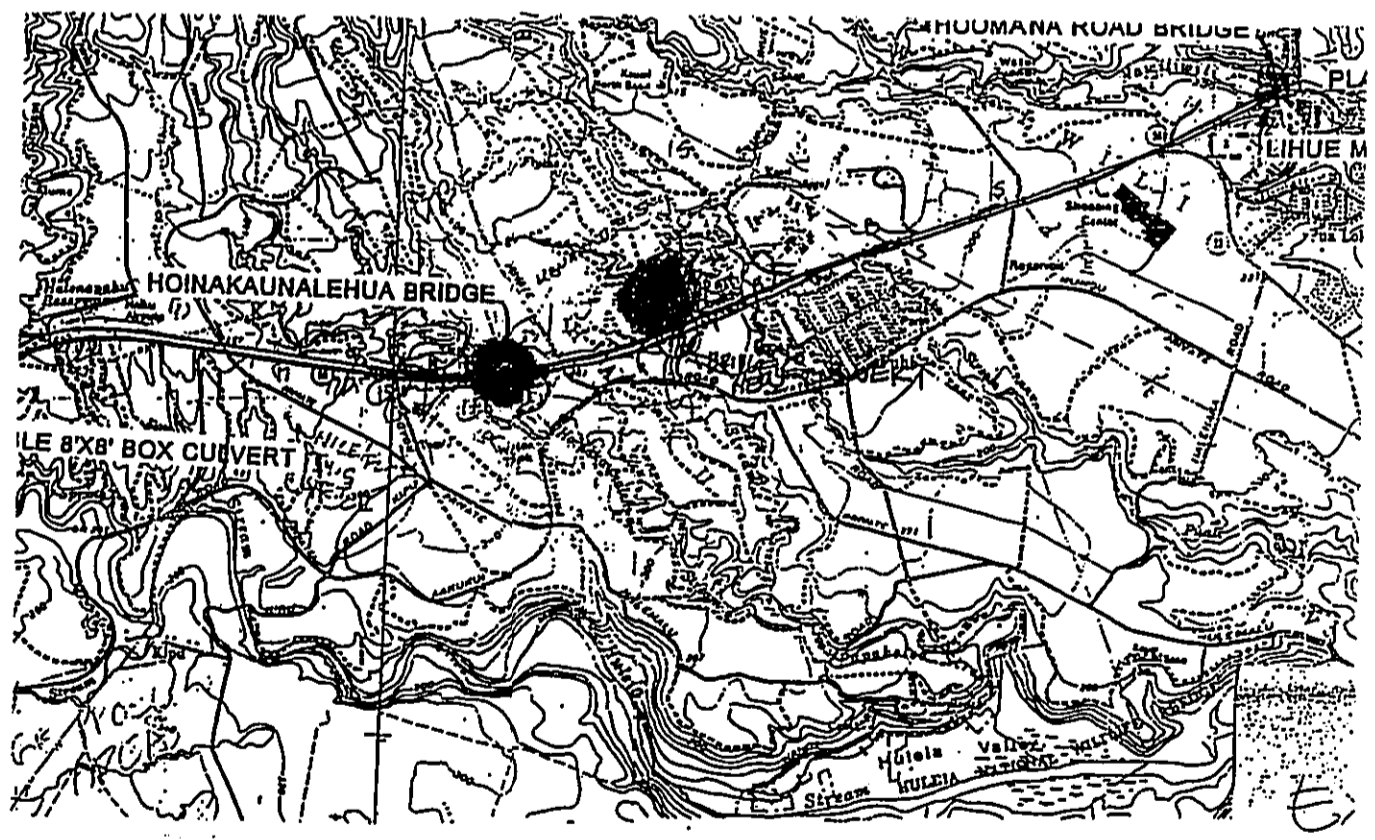
native birds. The only note of caution would be to minimize siltation of the streams during construction.





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Fig. 2. Location of faunal survey. Large darkened areas contain wetland habitat.



-8-

Fig. 1. Location of faunal survey. Large darkened areas contain wetland habitat.

TABLE 1

Introduced birds recorded on the Kaunua'ii Highway Improvement Project. (15, 16 April 1998).

COMMON NAME	SCIENTIFIC NAME
Red Junglefowl	<u>Gallus gallus</u>
Cattle Egret	<u>Bubulcus ibis</u>
Spotted Dove	<u>Streptopelia chinensis</u>
Zebra Dove	<u>Geopelia striata</u>
Japanese Bush-warbler	<u>Cettia diphone</u>
Iwamei	<u>Garrulax canorus</u>
Greater Necklaced Laughing-thrush	<u>Garrulax pectoralis</u>
Common Myna	<u>Acridotheres tristis</u>
Western Meadowlark	<u>Sturnella neglecta</u>
Japanese White-eye	<u>Zosterops japonicus</u>
Northern Cardinal	<u>Cardinalis cardinalis</u>
House Finch	<u>Carpodacus mexicanus</u>
Chestnut Mannikin	<u>Lonchura malacca</u>
Nutmeg Mannikin	<u>Lonchura punctulata</u>
House Sparrow	<u>Passer domesticus</u>

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APPENDIX H

Aquatic Species Survey and Biological Assessment Report



**Aquatic Species Survey and Biological
Assessment of Lihue, Kauai Streams
Intersected by Kaunani Highway
Lihue to West of Maluhia Road, (Koloa)**

Michael H. Kido

Report to
Park Engineering, Inc.
January 1999

Final Report

**Aquatic Species Survey and Biological Assessment of Lihue, Kauai Streams
Intersected by Kaunani Highway, Lihue to West of Maluhia Road (Koloa)**

**Michael H. Kido
Aquatic Biologist**

January 4, 1999

**Study For
Park Engineering, Inc.**

Kauai-Environmental Studies Project No. 50DE-02-95

Executive Summary

Aquatic Species Survey and Biological Assessment of Lihue, Kauai Streams Intersected by Kaunualii Highway, Lihue to West of Maluhia Road (Koloa)

This study was conducted for Park Engineering, Inc., to address concerns raised by the U.S. Fish and Wildlife Service (USFWS) about possible negative impacts on populations of native stream species resulting from improvements to Kaunualii Highway proposed by the State Department of Transportation (DOT) between Lihue west to Maluhia Road (Koloa) on Kauai. Three streams Puuli, Papakolea, and Huleia streams and their tributaries were found to intersect Kaunualii Highway within the specified project area and were surveyed for the presence of aquatic species. The survey found that these streams were physically and biologically degraded in the reaches where they intersected the highway. Nearly all of these locations exhibited excessive sedimentation and bank erosion. No native macrofaunal species were observed or collected in any of these locations and even alien species were present in very low abundances. Huleia Stream at the Halfway Bridge site exhibited the highest quality among those studied; yet, was only rated as being in "Very Poor" biotic condition based upon application of the Hawaii Stream Bioassessment Protocol. Native 'o'opu and 'opae were found in very low numbers in stream segments several miles downstream of Kaunualii Highway which suggested that some low-level recruitment was occurring to these urban Lihue streams.

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BACKGROUND

This study was conducted for Park Engineering, Inc., to address concerns raised by the U.S. Fish and Wildlife Service (USFWS) about possible negative impacts on populations of native stream species resulting from improvements to Kaunualii Highway between Lihue west to Maluhia Road (Koloa). The USFWS is primarily interested in determining the extent to which native species are resident in streams intersecting the section of highway being improved. The study was therefore designed to: 1) develop a generalized "species list" for affected Lihue streams and; 2) assess overall stream biological quality in those streams that appeared to have at least moderate physical quality based upon preliminary reconnaissance.

Four streams (Nawiliwili, Puuli, Papakolea, and Huleia) are found in the Lihue area (Fig. 1 and 2) and of these, only Puuli, Papakolea, and Huleia streams were within the specified project area. According to the US Geological Survey topographic map (Lihue Quadrangle), Puuli Stream has two tributaries which were cut off historically from their natural headwaters and today are connected to reservoirs on the east and west sides

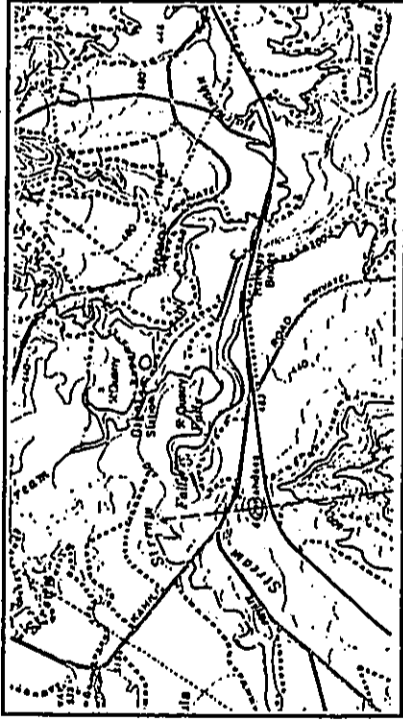


Figure 1. USGS Topographic Map of Huleia Stream at Halfway Bridge.

of Puhi town makai of the highway (Fig. 2). Along Kaunualii Highway, Papakolea Stream lies approximately one mile west of Puuli Stream and has two tributaries (Hainakaulaehua and Puhi) which converge at about 200 ft elevation about one mile makai of the highway (Fig. 2). Puuli's two tributaries intersect Kaunualii Highway at about 300 ft elevation (Fig. 2). Huleia Stream passes under Halfway Bridge about 2.25 miles west of Papakolea Stream along the highway at 400 ft. elevation (Fig. 1). Three major tributaries (Kuia, Paohia, and Kamooloa) join just mauka of Halfway Bridge to form Huleia Stream. All of the study streams are interrupted and diverted by reservoirs and ditches in their upper reaches and all empty into Nawiliwili Bay via the lower reach

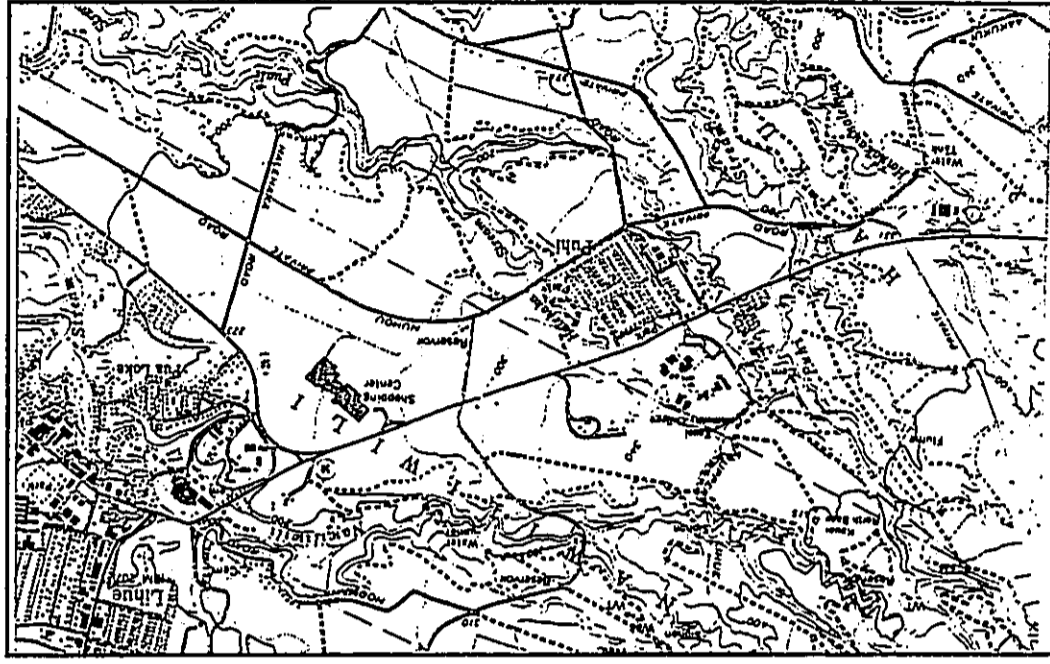


Figure 2. USGS Topographic Map of Puuli Stream and Tributaries of Papakolea stream (Puuli and Hainakaulaehua).

of Huleia River which flows alongside Hauupu Ridge to the south and the Menehune (Alekoko) Fishpond to the North.

Previous Studies

A previous study I conducted of lower Huleia and Papakolea Streams (Kido 1995) for Wilson Okamoto & Associates and the Office of State Planning revealed significant native aquatic species presence in both streams. Two sites sampled in the survey were in the estuarine reaches of Huleia (Stone Bridge) and Papakolea (USFWS National Wildlife Refuge) several miles makai of Kaunualii Highway; however, one site was in a middle elevation site of Huleia Stream directly under Halfway Bridge. Eleven native aquatic species (five fish, three crustaceans, one snail, and two insects) were found in the survey. Alien species, however, such as tilapia and poeciliid fishes, dominated the aquatic fauna both in numbers and biomass. The most widely distributed native fish was the 'o'opu-*nakea* (*Awaous gularis*) which was found in all sites sampled but was most abundant in Huleia Stream at the Halfway Bridge site. Also of significance and pertinence to this study was the presence of native 'opae kala'ole (*Atyoida bistulcata*) which was common in the shallow riffles of Huleia Stream under and slightly downstream of the Halfway Bridge location. No native aquatic insect species were found in this portion of Huleia Stream; however, native *Scatella* sp. (Diptera: Ephydriidae) and *Campylacremis* sp. (Diptera: Dolichopodidae) were captured sweep-netting in the lower Papakolea Stream site.

One other relevant study (Kido unpublished) was conducted in August 1998 in lower Puuili Stream at about 128 ft elevation to evaluate the effectiveness of the Hawaii Stream Bioassessment Protocol (HSBP) described below. Application of the HSBP rated the site as exhibiting "Very Poor" biological condition as alien Tahitian prawns (*Macrobrachium* lar) and poeciliid fishes (Poeciliidae) dominated the aquatic community to the near exclusion of native species. The 'o'opu-nakea, however, was present in this site albeit at very low densities. The habitat metrics indicated poor habitat quality for native species because of severe sedimentation, some dewatering, moderate bank erosion, and human-induced impacts to the riparian areas.

Materials and Methods

Since the primary concern related to the project involved potential impacts related to the realignment construction of Kaunualii Highway, the surveys were focused where the streams intersected the highway. Visual reconnaissance was initially used to assess the overall condition of the study streams and to determine the appropriate methods for sampling. If the sampling sites were found to be sufficiently degraded to preclude underwater visual surveys, aquatic macrofauna were collected using electrofishing apparatus (Coffelt battery-powered electroshocker Model BP3). Fish and invertebrates collected were identified to lowest taxonomic category and released.

If normal boulder/cobble habitat were present, one of several methods would be used to sample invertebrates and algae depending upon site conditions. Odonates

(dragonflies and damselflies) present would be identified in flight and adult aquatic Diptera (flies) collected using a sweep net. Insect immatures, other aquatic invertebrates, algae, or mosses observed would be handpicked or scraped off exposed and submerged boulders and cobbles. Density estimates (biomass g/sq m) would be obtained for invertebrates and algae using a Surber net (0.09 sq m area) and randomly selected cobble (estimated surface area) as described in Kido (1997a).

Evaluations of stream habitat and biological quality at study sites on a scale from "Excellent" to "Very Poor", while not absolutely required for the purposes of this study, would none-the-less provide valuable information useful in evaluating impact or change in condition over time. The Hawaii Stream Bioassessment Protocol (HSBP) (Kido and Smith, 1998) was developed especially for this purpose and therefore would be used in this study when possible. The HSBP is a "first generation" methodology for assessment and monitoring of Hawaiian streams utilizing a standardized "multimetric" approach. The HSBP evaluates both habitat quality as well as biological quality of the study stream reach. Protocols which involve underwater visual observation score ten "metrics" (or measures) in the native macrofaunal population which provide ecological insight from the individual, population, and community levels of organization. The raw data is used to then calculate the Hawaii Stream Index of Biotic Integrity (HS-IBI) which rates biological quality in comparison to reference Hawaiian stream conditions (Table 1). Flow data estimation for comparisons of stream size are included in the HSBP and follow USGS standard protocols adapted for application with a Swiffer flow meter and top-setting wading rod.

Table 1. The Hawaii Stream Index of Biological Integrity, (Kido and Smith, 1998).

HS-IBI Score as % of Reference	Integrity Class	Attributes
90 - 100 %	Excellent	Comparable to the most "pristine" conditions without human disturbance; native macrofauna dominate aquatic community; robust 'o'opu population including sensitive 'o'opu species.
80 - 90 %	Good	Alien species more common but all expected native macrofauna present; natives comprise at least 75 % of population in proportionate abundance; sensitive 'o'opu densities and/or size classes may be somewhat below expectations.
70 - 80 %	Fair	Alien species may comprise 50 % of population in proportionate abundance but all expected native macrofauna present; sensitive 'o'opu densities and size classes below expectations.
60 - 70 %	Poor	Alien species dominate aquatic community and include poeciliid fishes; most native macrofauna absent including sensitive 'o'opu species; 'o'opu-nakea may be present but densities very low and individuals small.
< 60 %	Very Poor	Only alien species present including poeciliids and/or tilapia.

Results and Discussion
General Observations

The surveys for this study were conducted from 12/10/98 to 12/13/98 and from 12/19/98 to 12/20/98. All of the stream sites examined along Kaunualii Highway between Lihue town and Halfway Bridge were found to be severely degraded both physically as well as biologically. Aside from Huleia stream, all of the streams at the level of the highway had little or no water flowing in their natural channels and most were so overgrown with invasive vegetation that the stream channels were not visible from the level of the highway. No native aquatic species were found in any of the Kaunualii Highway intersections except for a native shore fly (Ephydriidae: *Sciella cilipes*) collected in Huleia Stream at the Halfway Bridge site (Table 2).

Table 2. Aquatic species observed or collected in Huleia (Hu), Puali (Pu), and Papakolen (Pa) streams and/or their tributaries: * or ** indicate native species all others are alien. Species (* = Indigenous; ** = Endemic)

Species	Stream
Fishes - Gobiidae	
<i>Awaous guamensis</i> (' <i>o'opu-naketa</i>)*	Pu
<i>Sicyopterus japonicus</i> (' <i>o'opu-nopili</i>)**	Pu
Poeciliidae	
<i>Poecilia reticulata</i> (guppy)	Pu, Pa
<i>Xiphophorus helleri</i> (swordtail)	Pu
<i>Gambusia affinis</i> (mcdaka - mosquitofish)	Pa
<i>Micropterus dolomieu</i> (Centrarchidae: smallmouth bass)	Hu, Pu
Invertebrates	
Insecta - Diptera (flies)	
<i>Cricotopus bicinctus</i> (Chironomidae) (midge)	Hu, Pu
<i>Limonia uahena</i> (Tipulidae) (crane fly)	Hu, Pu
<i>Heimerobromia stellaris</i> (Empididae)	Pu
<i>Sciella cilipes</i> (Ephydriidae) (shore fly) **	Hu
<i>Odonata - Anax strenuus</i> (dragonfly) **	Pa
<i>Ischnura pumila</i> (damselfly)	Pa
<i>Trichoptera - Hydropsyche petiti</i> (caddisfly)	Hu, Pu
<i>Chironomus tentans</i> (caddisfly)	Hu, Pu
Crustacea - Atya hawaiiensis (Athyidae: '<i>o'opu-kalalele</i>)**	Pa
<i>Procambarus clarkii</i> (Decapoda: crayfish)	Pu, Pa
<i>Ancistradarius lar</i> (Palaeomonidae: Tahitian prawn)	Pu, Pa
Mollusca - <i>Tarebia granifera</i> (Gastropoda: Thiaridae)	Hu
<i>Carbicula fluminea</i> (Pelecypoda: Corbiculidae)	Hu, Pu, Pa
Algae	
Chlorophyta (green algae) - <i>Chlorella</i> sp.	Hu, Pu
<i>Chlorella</i> sp.	Pu
Cyanophyta (blue-green algae) - <i>Phormidium retzii</i>	Hu
<i>Phormidium</i> sp.	Hu
Chrysophyta (diatoms) - <i>Hydroneis</i> sp.	Pu
Rhodophyta (red algae) - <i>Gracilaria</i> sp.	Pu

Site Surveys at Stream Intersections Along Kaunualii Highway
Puali Stream

At the elevation of the highway, Puali Stream was found to be highly diverted by irrigation ditches and reservoirs used for sugarcane cultivation in the area. A series of reservoirs interrupts Puali's normal drainage pattern which makes possible the shunting of water to irrigate fields either west or east of Puali town. During the survey, most of the water to Puali was flowing under Kaunualii Highway into an irrigation ditch just west of Puali town (Fig. 3). The ditch passed through a culvert under the highway and flowed towards the Puali Industrial Area. The channel was filled with fine silt and normal cobble/boulder substrate was entirely absent. Electrofishing a short segment of ditch produced only guppies (*Poecilia reticulata*) and crayfish (*Procambarus clarkii*) (Table 2). No invertebrates were observed or collected in the modified stream. From the highway intersection the ditch carried water south across Puali Road towards Nawitwit and from there emptied into a canefield south of Nultou Road.

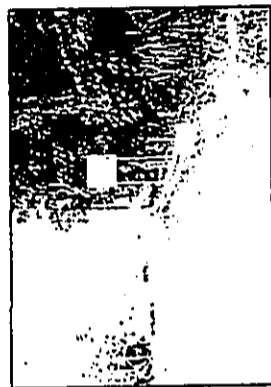


Figure 3. Puali Stream at Kaunualii Hwy.

Papakolen Stream

Like Puali, the two tributaries that form Papakolen Stream (Puali and Hainakaunalehua) were found to be both physically and biologically degraded. Puali Stream had very little flow in its channel above Kaunualii Highway were it passed through a small farming operation and subsequently through a culvert under the highway (Fig. 4). The stream channel at this point was overgrown by an impenetrable stand of *Ipomoea tiliaceus* which made sampling impossible (Fig. 4). Puali stream then flowed south through a deep ravine eventually being interrupted by a reservoir about 0.5 mi from the highway. No aquatic organisms were observed or collected in the flowing segment of Puali Stream just mauka of the highway.

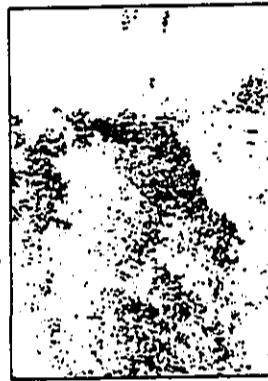


Figure 4. Puali Stream at Kaunualii Hwy.

Hainakaunalehua Stream passed under Kaunualii Highway about 0.5 mi west of Puali Stream directly in front of the Brewer Environmental Inc. warehouse complex (Fig. 5). Most of the highway the stream passed through another culvert and flowed in a southwesterly direction around the warehouse complex. Like Puali, Hainakaunalehua Stream was severely degraded in this segment. I was able to sample the stream channel



Figure 5. Hainikaunalehua Stream at Hwy.

Papakolen Stream proper was sampled below the confluence of its tributaries at an elevation of about 160 ft where it passed under Haiku Road. Flow in the channel was substantially higher than that observed in its tributaries. The stream bottom was highly sedimented with a very deep layer of mud on its surface (Fig. 6). The stream was entirely surrounded by alien vegetation in its riparian zone and its banks were eroded along most of the reach surveyed. Despite the degraded physical conditions, the native shrimp *Opae-kalaole (Atyella bisulcata)* was captured while electrofishing the reach. Also captured were the alien crayfish, *Procambarus clarkii*, and Tahitian prawn



Figure 6. Papakolen Stream.



Figure 7. Huleia Halfway Bridge. Only one cascade/riffle existed within the 100 m long study site. The natural rocky banks

just adjacent to the warehouse complex and found the bottom to be pure mud. Both banks were highly eroded with spotty riparian vegetation on either side. Only *Pelecypoda reticulata* was captured electrofishing this reach and shells of the alien bivalve mollusk *Corbicula fluminea* were common on the stream bottom. No adult insect or other invertebrates were observed or collected in this location.

(*Macrbrachium lar*). The only fish collected was the alien poeciliid, *Gambusia affinis* (medaka or mosquitofish).

Huleia Stream

Huleia was the largest of the Lihue streams surveyed in this study having a measured flow of 9.04 cubic feet sec⁻¹ at the Halfway Bridge site (Fig. 7). This flow was about eight times greater than that measured in the 1995 survey performed for State OSP (Table 3). The stream channel was filled to bankfull with fast flowing water creating a nearly homogenous habitat with very little variation. Only one cascade/riffle existed within the 100 m long study site. The natural rocky banks

of the stream were obscured by thick growths of weedy alien grasses and sedges (Fig. 7) and found to be highly disturbed inland by feral pigs.

Table 3. Comparisons of flow characteristics measured in Huleia Stream (Halfway Bridge Site - 1995/1998) and Puuli Stream.

Parameters	Huleia Stream		Puuli Stream
	1995 Study	1998 Study	
Site Elevation	79,000	79,000	49,000
Stream width (m)	2.150	7.700	0.800
Cross sec. Area (m ²)	0.152	2.788	0.160
Mean Depth (m)	0.067	0.362	0.199
Wet Perimeter (m)	2.139	8.099	1.126
Hydraulic Radius	0.065	0.344	0.141
Flow (m ³ /sec)	0.030	0.840	0.060
Mean Flow (m/s)	0.197	0.301	0.378

Higher flows and better water quality made it possible to perform a standard bioassessment using the HSBP (Kido and Smith, 1998) the results of which are detailed below. None of the native macrofauna (i.e. the *Opae-nuker* and *Opae-kalaole*) previously observed and/or collected at the site were observed (Table 2). Their absence may be explained by the dominant presence of the aggressive generalist predator, smallmouth bass (*Ameiurus delamiei*), throughout the study area. The only invertebrates observed in the deeper stream areas during the underwater visual bioassessment were the alien bivalve, *Corbicula fluminea*, and the alien gastropod, *Tarebia granifera* (Table 2).

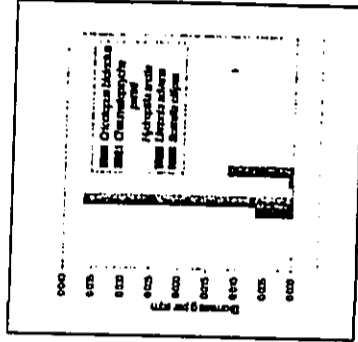
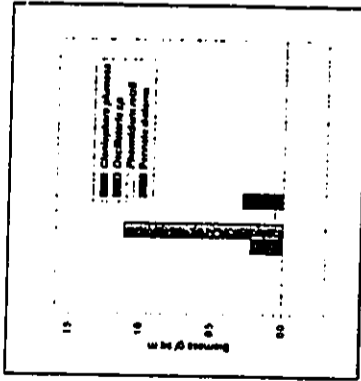


Figure 8. Invertebrate densities in Huleia. This was the only location in streams area where native aquatic insects were found. All of these invertebrates are known to be foods for native *Opae-nuker (Ameiurus gunnisonis)*.

Benthic (bottom) sampling focused in the single riffle/cascade habitat in the study site revealed that alien species dominated the aquatic insect fauna. Alien swift-water caddisflies (*Chironomus petiti*) were the dominant insects in overall biomass in the site while alien midges (*Chironomus bicinctus*) were the most numerically abundant, but accounted for relatively little biomass because of their small size (Fig. 8). Adult individuals of the endemic shorefly, *Scutella cilipes* (Ephydriidae), were notably collected sweep netting the riffle white larvae and pupae were collected off stream rocks (Fig. 8). This was the only location in streams along Kaunalehua Highway in the project

Three species of filamentous algae were collected off rocks in the riffle habitat. The most abundant species present was an *Oscillatoria* sp. (Cyanophyta) which had a sprawling matted form (Fig. 9). A green alga, *Chlamydomonas phloioidea* (Chlorophyta), was also relatively abundant in the riffle (Fig. 9). This branching green alga is known to be a food of native *'i'iwi*-*inakea*. Pennate diatoms were also found to be fairly common in the riffle; however, species diversity was low being a near monoculture of *Fragilaria* sp.. Pennate diatoms are known to be important foods to herbivorous native *'i'iwi*-*inakea*.



The benthic collections of invertebrates and algae in the study reach of Huleia Stream at the Halfway Bridge site suggest that food for native *'i'iwi* were present in at least the one riffle habitat. The paucity of shallow habitat in the site, therefore, may have been a factor contributing to the absence of native aquatic species.

Figure 9. Algal densities in Huleia Stream.

Bioassessment Results

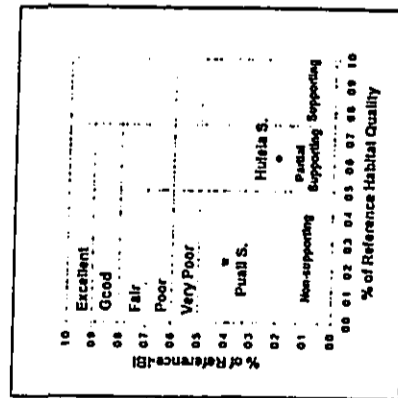


Figure 10. HSBP results for Huleia/Pualii.

combined with the dominance of predatory smallmouth bass were primarily responsible for the very low HIS-IBI scores for Huleia Stream at the Halfway Bridge site.

Habitat quality, however, scored higher in Huleia as compared to Pualii Stream (0.625 vs 0.225 respectively) (Fig. 10). The stream bottom in Pualii was found to be highly sedimented with very little normal boulder/cobble substrate present. Sedimentation appeared to be chronic, occurring over a very long period of time as the mud had solidified into clay on the stream bottom. Huleia, on the other hand, did not exhibit excessive sedimentation and boulder/cobble substrate was present; however, very high water levels completely submerged all substrate removing normal heterogeneous flow regimes and micro-habitat. This was not the condition of the stream observed in 1995. Despite the high water levels, the habitat quality metrics indicated that "partial supporting" habitat for native macrofaunal species was present (Fig. 10); therefore, the absence of natives was likely due, to a greater degree, to the dominant presence of predatory smallmouth bass in the reach.

General Conclusions

In this study, Huleia was determined to be the highest quality stream among the five that intersected Kaunuaui Highway in the project area and even then, was rated as exhibiting "Very Poor" biotic condition. The remaining streams were found to be severely degraded at the highway locations with no native species present and even very few alien species observed or collected. Nearly all of these locations exhibited excessive sedimentation and bank erosion. Native macrofaunal species were only found in stream segments several miles downstream of Kaunuaui Highway. The presence of natives in these lower segments at least, suggests that some limited, low-level recruitment is occurring into these urban Lihue streams despite the severely degraded conditions in many locations. The spatial and temporal extent, however, to which native aquatic macrofauna migrate into the upper reaches of the Lihue streams cannot be determined from the limited data generated in this study.

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Archaeological Assessment Report

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ARCHAEOLOGICAL ASSESSMENT
 OF AN APPROXIMATELY 11.5 KILOMETER-LONG PORTION
 OF THE KAUMUALI HIGHWAY CORRIDOR, THROUGH
 NĀWILIWILI, HAIKŪ, AND KŌLOA AHUPUʻA,
 ISLAND OF KAUAI

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 Rodney Chiogeti, B.A.

Prepared for
 PARK ENGINEERING

Cultural Surveys Hawaii
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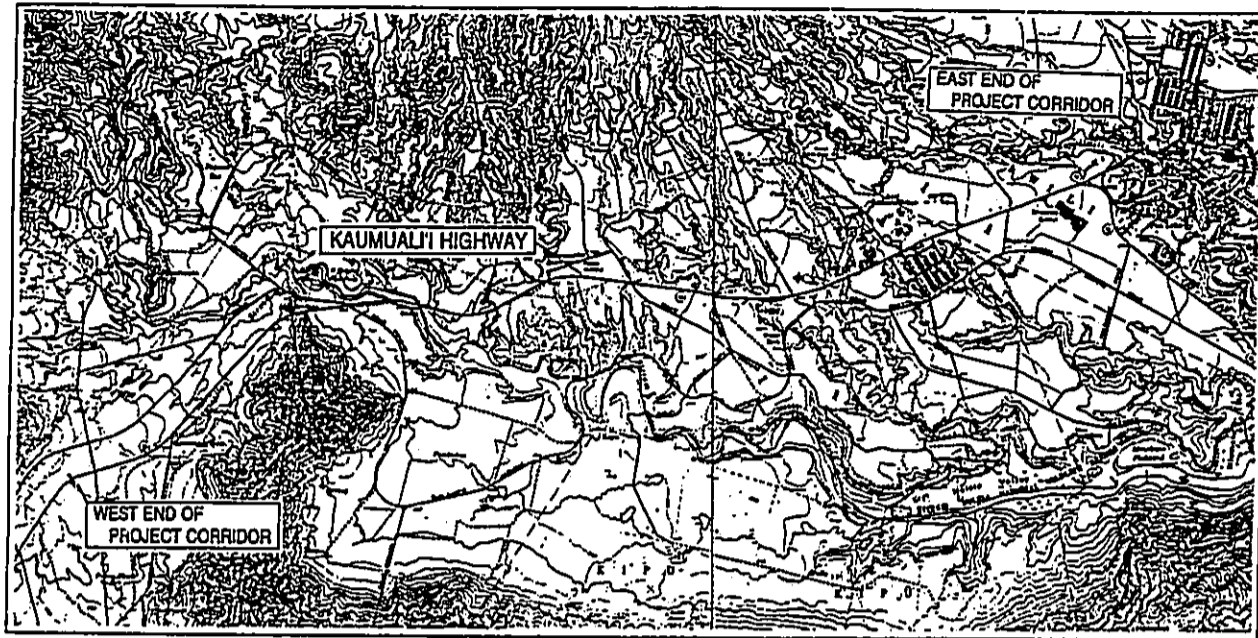


Figure 1 Portion of USGS 7.5 Minuta Series Topographical Map, Lihue and Koloa Quadrangles, showing Kaumuali'i Highway corridor project area

I. INTRODUCTION

A. Project Description

At the request of Park Engineering, Cultural Surveys Hawaii has conducted an archaeological assessment of a portion of the Kaumuali'i Highway on the island of Kauai (Figure 1). The portion of the highway under study is approximately 11.5 kilometers long, extending west from the Lihue Mill Bridge, through Puhii, and terminating approximately 1 kilometer west of Maluhia Road (to Koloa). This portion of the highway is proposed for widening.

B. Scope of Work

The scope of the work for the archaeological assessment is as follows:

1. Historic background research to include study of historic maps, archival documents, previous archaeological and historical studies, and other sources for the purpose of identifying existing and potential historic archaeological sites. This work will include references to sources on historic bridges, and the National and Hawaii State Registers of Historic Places on file at the State Historic Preservation Division of the Department of Land and Natural Resources. Knowledgeable members of the community will be consulted on specific issues related to historic structures and archaeologically sensitive areas.
2. Fieldwork will consist of an inspection and assessment of identified historic and archaeological sites and potential site areas. Present conditions of sites will be documented with descriptions and photographs.
3. Preparation of a report detailing the results of the historic research and fieldwork. This report will contain assessments of specific structures and sites with preliminary evaluations of impact and preliminary recommendations for mitigation.

C. Work Accomplished

Archaeological reconnaissance survey of the Kaumuali'i Highway project area was accomplished on March 24 and May 13, 1988.

Background research included: a review of previous archaeological studies on file at the State Historic Preservation Division of the Department of Land and Natural Resources; review of documents at the Kauai Historical Society, the Kauai Museum, Hamilton Library of the University of Hawaii, the Hawaii State Archives, the Mission Houses Museum Library, the Hawaii Public Library, and the Archives of the Bishop Museum; study of historic photographs at the Hawaii State Archives and the Archives of the Bishop Museum; and study of historic maps at the Survey Office of the Department of Land and Natural Resources.

II. KAUMUALII HIGHWAY CORRIDOR: CULTURAL AND HISTORICAL DOCUMENTATION

This section begins with a review of the available documentary evidence for the general character of the present Kaumualii Highway project area as it had evolved in the years before western contact in the later 18th century. The development of lands surrounding the highway corridor during the 19th century and into the early 20th century was recorded in increasingly abundant documentation - including government records, private accounts, newspapers, maps and photographs. Finally, during subsequent decades of the 20th century, abundant documentation allows a more precise focus on the Kaumualii Highway corridor and its environs.

A. Pre-Contact to 1800

There is one way through (the) thin mountain ridge (across central Kauai), a place where the barrier briefly parts. This lapse in the ridge is the way between east and west Kauai. It is called the Gap and travelers have used it since the beginning.

(Joesting 1984:216)

The route of the Kaumualii Highway runs through the "Gap" between Kahoaia and Puomoe, connecting Lihu'e to south and southwest Kauai. Portions of the highway corridor, especially near the Gap within the present project area, likely follow the alignment of the traditional trail system that joined east and west Kauai. The Gap itself was the subject of the traditional Kauai legends and premonitory tales, "for the clump of hau trees formerly near the bend of the mountains at the Gap was said to have been the hiding place of robbers and 'akua's' lurked in its hidden depths" (Rice 1991:53).

Further evidence that the Gap marked a well-known and well-travelled area of Kauai in pre-contact times was presented in testimonies by native Hawaiians during Commission of Boundaries sessions in the 1870s. These testimonies of the *kama'aina* recorded in the proceedings of the commission throughout the Hawaiian islands provided otherwise anonymous Hawaiians an unprecedented opportunity to display not only a comprehensive understanding, passed down through generations, of the contours of the *ahupua'a*, but, at the same time, allowed them to reveal local traditions, place names, no-longer-existing sites including *heiau* and settlements, areas where traditional activities were practiced, and historic events they had witnessed or participated in. Testifying on the boundaries of Koloa *ahupua'a* in 1874, Hupal stated: "The boundary of Kona and Puna (districts) was at Hoaea (i.e. above the Gap) that was where the battle flags were hung that was when the battles were fought" (Boundary Commission, Kauai, vol. 1; Hawaii State Archives).

East of the Gap, the present highway corridor crosses the Huleia River gulch, an area where traditional Hawaiian agricultural activities dating to pre-contact times have been noted:

The broad delta of the Huleia River is 1.5 miles long and a half mile wide, and is in the *ahupua'a* named Haiku, the next to last of the southeasterly valleys of Puna. This area was ideal for wet taro. Terraces continue upriver, and there were terraces up the streams that empty into the river. Old breadfruit and mango trees indicate that there were many Hawaiian *kuleana* up to 6 miles inland from the delta. (Handy and Handy 1972:427)

Traditional accounts give few clues to the exact routes of the trail system east of Gap, and no indication whether the present project area correlates to any pre-contact pathway.

B. 1800 to 1850

The evolution of the route between the Gap and the present Lihu'e Town - following the general alignment of the present highway corridor project area - would be generated by western-induced cultural and economic developments on Kauai begun in the first half of the 19th century.

On December 31, 1834, the Rev. Peter Gulick and his family arrived in Koloa *ahupua'a*. Apparently the first foreigners to settle in the *ahupua'a* (Gulick had previously been stationed at Waimea), they initiated the process of rapid change that would re-shape Koloa. In 1835 a 30 by 40 ft. grass house was erected as a meeting house and school. Rev. Gulick initiated sugar cane cultivation and collected a cattle herd for the Protestant Mission. In 1837 an adobe church was built and the first mission doctor, Thomas Lafon, arrived. Assistant Gulick. The Koloa mission station apparently flourished immediately; Charles Wilkes, a member of the U.S. Exploring Expedition visiting Koloa in 1840, recorded:

The population in 1840, was one thousand three hundred and forty-eight. There is a church with one hundred and twenty-six members, but no schools. The teachers set apart for this service were employed by the chiefs, who frequently make use of them to keep their accounts, gather in their taxes &c. The population is here again increasing partly by immigration, whence it was difficult to ascertain its ratio. (Wilkes 1846)

Further confirmation of the growth of Koloa is given by James Jackson Jarves, who visited Koloa and Kauai for nine months during the early 1840s:

Koloa is now a flourishing village. A number of neat cottages, prettily situated amid shrubbery have sprung up, within two years past. The population of the place, also, has been constantly increasing, by emigration from other parts of the island. It numbers, now, about two thousand people, including many foreigners, among whom are stationed a missionary preacher, and physician, with their families. (Jarves 1844:100)

The arrival of "many foreigners" was the cause of - and the native emigration to Koloa was the result of - the many commercial activities that burgeoned beginning in the 1830s. Among these commercial enterprises was Ladd and Company which, in 1836, gained from the king and local chiefs the lease of about one thousand acres at Koloa to be planted in sugar. The lease ran for 50 years at \$300 a year and "allowed the use of the waterfall and an adjoining mill site at Maulii pool, not far from the thousand acres, together with the right to build roads, the privilege of unrestricted buying and selling and freedom from local harbor dues (Judd 1935:57). That the company obtained the "right to build roads" suggests that construction of horse and carriage roads was an early priority of the western homesteaders and entrepreneurs settling at Koloa on south Kauai. Already in the 1830s, according to a visitor, James Townsend, there was "a good road made by the natives over a gentle ascent of about two miles" between the Koloa landing and the developing Koloa town (Townsend 1839).

Western homesteading and commerce moved into the lands above Nāwiliwili Bay that would evolve into Lihue Town within a few years after the establishment of the missionary and business activities at Kōloa. Two years after he had arrived at the mission station at Kōloa, Dr. Thomas Lafon moved east to open a branch of the Kōloa church:

In 1839...Lafon made his home in what became known as the Lihue district. The church he was in charge of there had been built by order of Kaikioewa (governor of Kaua'i). There must have been considerable activity in the Lihue area to cause Lafon to move there from Kōloa. James Jarves, who passed through the area in 1840, reported that in addition to the church there was a "straw palace," built for Keaweamahi, the wife of Kaikioewa. (Joesting 1984:153)

Kaikioewa, who died in 1839, had apparently intended to create a "city" at Lihue; according to Jarves, visiting in 1840:

There is a fine tract of land which the late governor selected as a site for a plantation, many acres of which he caused to be planted in cane, and also built a large church, and a house for himself. But death soon terminated his scheme, and his city, that was to be, still retains its original diminitiveness... (in Joesting 1984:153)

Kaikioewa's activities at Lihue did, however, draw a small community of westerners, including Dr. Lafon and his family, to the area, which impelled the creation of a horse trail between Kōloa and the Lihue area. Accounts of 19th travellers on the trail between Kōloa and Lihue present the first record of the lands surrounding the present Kaunuali'i Highway. William DeWitt Alexander, son of the former Waioli missionary William P. Alexander, described a return visit to Kaua'i in 1849, six years after his family had left the island. Travelling on horseback from Kōloa to Wailua, Alexander noted in his diary:

We then rode through a gap in the hills, leading out from Kōloa. The scenery was very fine, and worthy of Kauai. Mauna Kahili was close on the left, & on the right a beautiful range of hills extending towards the northeast, and terminating in an abrupt peak which goes by the name of "Hourly Head" (Haupu). We rode on over a beautiful undulating table land, dotted with groves of lauhala and kukui. After riding about five miles, we crossed a stream fitly called Stoney Brook. We afterwards crossed many other streams on our way. Five miles further we passed Dr. Lafon's former residence. Here we began to descend towards the sea. (Alexander 1991:122).

Apparently, Alexander observed no conspicuous Hawaiian settlements between the Gap and Dr. Lafon's residence in the Lihue area.

Mahele and Land Commission Award Documentation

The Organic Acts of 1846 and 1848 initiated the process of the *Mahele* - the division of Hawaiian lands - which introduced private property into Hawaiian society. In 1848 the crown and the *ali'i* (royalty) received their land titles. The present Kaunuali'i Highway project area crosses three *ahupua'a*: Kōloa, Ha'ikū, and Nāwiliwili. Kōloa *ahupua'a* was awarded - Land Commission Award (LCA) 7714-B - to Moses Kekua'iwa, brother of Alexander Liholiho (Kamehameha IV) and Lot Kamehameha (V). Ha'ikū and Nāwiliwili *ahupua'a* were awarded - LCA 7713 - to Victoria Kamamalu, sister of Kamehameha IV, Kamehameha V, and

Moses Kekua'iwa. Documents associated with these awards give no indication of specific land uses or activities within the present highway project area.

Kūleona awards for individual parcels within the *ahupua'a* were subsequently granted in 1850. These awards were presented to tenants - native Hawaiians, naturalized foreigners, non-Hawaiians born in the islands, or long-term resident foreigners - who could prove occupancy on the parcels before 1845 (Apple 1978:45). Current tax maps indicate only two *kūleona* awards in the near vicinity of any portion of the present project area. The two awards - LCA 3366 to Nika and LCA 3248 to Hanale - are located in Nāwiliwili *ahupua'a*, along Nāwiliwili Stream, to the north of the present highway project area (Figure 2). Records associated with these awards indicate that the two awarded parcels comprised *taro lo'i*. Additionally, testimony recorded for LCA 3366 indicates that the parcel was "bounded mauka by upper road from Wailua to Kōloa" (Foreign Testimony, vol.13, pg.147), suggesting that, at mid-19th century, the road extending eastward from Kōloa toward the Lihue area and on to the northeast coast of Kaua'i ran somewhat to the north of the present project area route.

C. 1850s to 1900

Western commerce at Kōloa and Lihue during the second half of the 19th century would further compel the development of an increasingly direct roadway between the two economic centers.

The landing at Kōloa became the official port-of-entry for Kaua'i in the 1850s and the Kōloa inhabitants participated in the profitable trade with the whaling industry whose peak years ran from the 1830s to the 1860s. An article in the *Pacific Commercial Advertiser* of Feb. 19, 1857 described the port and its flourishing commerce at the mid-19th century:

The anchorage is an open roadstead, the tradewind blowing along and a little off shore...For the trade of the port there is a small rude pier constructed which might be improved at no great outlay of labor...Large quantities of firewood, bullocks and sweet potatoes are furnished to whalers in this port, and these chattels can no where be procured cheaper or better. It is estimated that 10,000 barrels of sweet potatoes are cultivated annually here, which are thought to be the best in the islands. Nearly all the potatoes furnished for the California market are produced here...Sweet potatoes, sugar and molasses constitute the chief trade of the port.

The records of the Collector General of Customs at Kōloa document the exuberant trade in whale ship provisioning and produce shipping at the port. Typical entries, in addition to potatoes, include: pigs, goats, butter, wood, fowls, oranges, bananas, and eggs. The Many of these goods were transported from east Kaua'i over the Kōloa-Lihue road, which continued to be improved. A visitor to Kaua'i in 1865, William T. Brigham, noted described the route between Lihue and Kōloa:

From Lihue the road led over the plain with the mountains on the left. A ditch crossed and recrossed the road as it wound along the hills from the fountains to the canefields below. Owls (puce) were very abundant, the Pass over the mountains was very good and not at all steep, and all the way which was some twelve miles, the road was very good, in fact a carriage road. Two hours riding brought me to Dr. Smith's (in Kōloa) at eight. (Lydgate 1991:143).

The "very good" carriage road that Lydgate observed in 1865 reflected not only the prosperity and activity at Kōloa, but also the growth of Lihue. In 1849, the firm of H.A.

Petree & Co. was established for the development of a sugar plantation at Lihue. The company obtained up to 3,000 acres of land and by 1861 a water-driven sugar mill was constructed (on the site of the present Lihue's sugar mill).

Hawaiians made up the labor force. They built their homes on the land surrounding the mill... Planting was begun in 1850 and the first crop, amounting to a little over 100 tons of sugarcane, was ground in 1853. (Joesting 1984:173)

Mary A.G. Rice presented, in 1914, a description of Lihue in 1850s when the new plantation was transforming the Lihue's landscape. Rice describes the area of Lihue surrounding the present project area corridor near the plantation mill and the present Lihue's Public Cemetery:

Though the roads ran somewhat differently from now they are very much the same with the exception that our present grades are vastly improved...

The land extending from the cemetery and up as far as Mr. Stewart's residence and across to Halehaka was formerly one large grove of Kukui trees, flanked on one side by a grove of Koa. Sandal-wood grew in such quantities on the ridges and in the valleys in some sections that there grew up quite a lucrative business in cutting and exporting the same to China.

The Hawaiian village at Puuloki, consisting of thatched houses, extended from near the present cemetery across to the property occupied now as the Hawaiian parsonage and Government school. There were also large settlements of Hawaiians in Halehaka valley, Niunualu, Nawiliwili and Hanamaulu valleys. (Rice 1991:47)

The cemetery Rice mentions is the present Lihue's Public Cemetery, located adjacent and to the south of the Kaunualii Highway, near the present Lihue's Mill Bridge. According to information provided by the Lihue's Public Cemetery Association, William Harrison Rice, the manager of the Lihue's plantation, was the first person buried in the cemetery in 1862 (personal communication: May 29, 1998). (The cemetery also contains the reinterment site of someone who died in 1854.) The cemetery was established by the Rice family and, in subsequent years, the cemetery also became the resting place for members of other prominent families that had settled on Kauai. In a ca. 1890s photograph, the cemetery site appears among a stand of trees at the top of a hill overlooking the sugar mill (Figure 3). The photograph also shows that no bridge then spanned Nawiliwili Stream, adjacent to the mill.

Whether the Koloa-Lihue road, during the 1890s, passed below the cemetery, as does the present Kaunualii Highway is unclear in the photograph. A traveller's description of the period, however, characterizes the roadway clearly. Eric A. Knudsen, recounting a trip around Kauai in 1895, describes a horse ride on the Koloa-Lihue road:

... We dropped down into the Poelele Stream, clambered up only to drop down again into the Omaso River, and finally entered Koloa Gap and joined the main road again near the base of Puuomoi.

From there the road led straight on towards Lihue. We crossed the Huleia River at the Half-way Bridge and soon were riding down through the pasture lands of Grove Farm. The camp called Puhi was not in existence in those days

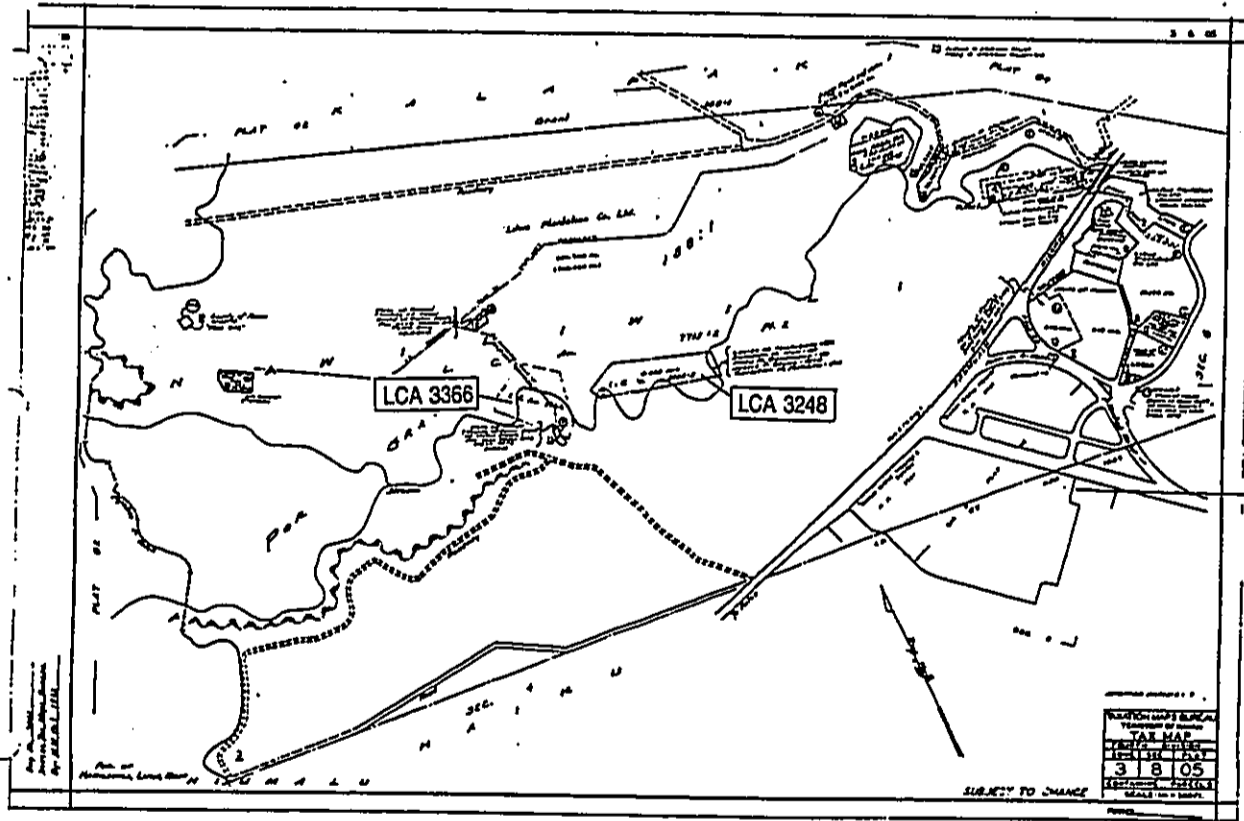


Figure 2 Tax map showing locations of Land Commission Awards north of the Kaunualii Highway project area

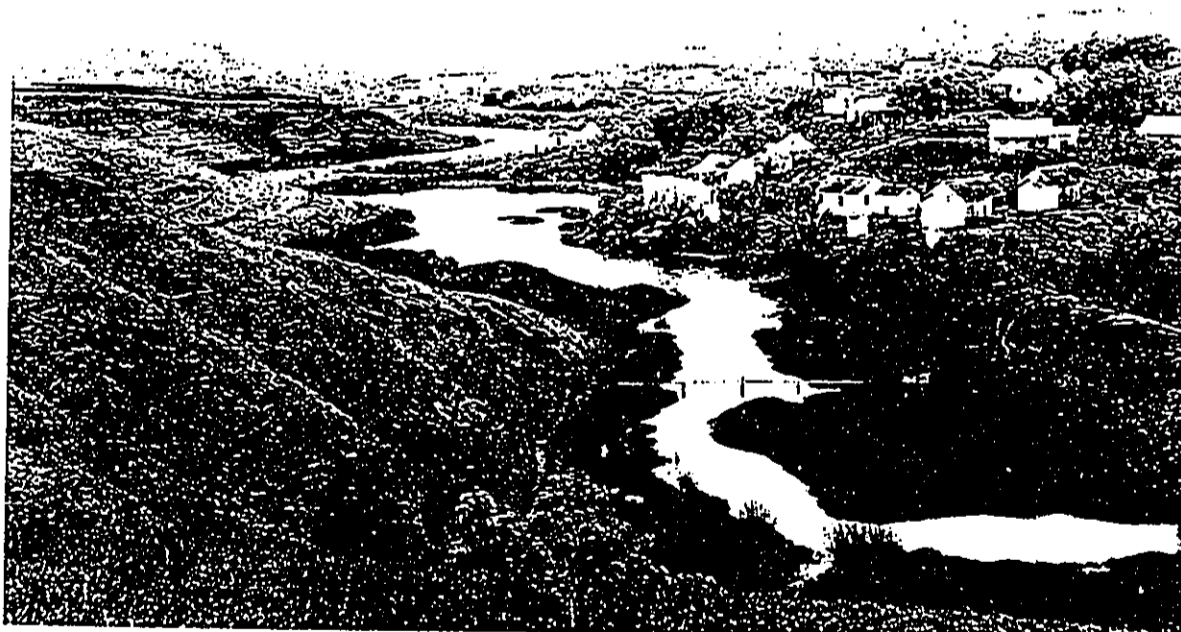


Figure 3 The sugar mill at Lihue, ca. 1890s, showing Lihue cemetery amid trees on hill overlooking the mill (Bishop Museum Archives)

{Knudsen's reminiscence was recorded in 1940}....There had been a shower and the surface of the road was only half dry and as the horses dashed along they threw back clods of earth. (Knudsen 1991:151)

Near the end of the 19th century, the route through the Gap and on to Lihue remained an unpaved, dirt carriage road.

D. 1900s to Present

By the first decade of the 20th century, the road between the Gap and Lihue was a portion of a road system extending from the southwest coast to the northeast coast of Kauai. A Hawaii Territory Survey map of 1903 shows that the road between the Gap and Lihue followed a much more irregular route, likely following the most accessible contours of the landscape, than that of the present Kaunualii Highway project area (Figure 4). The map indicates that, toward Lihue, the road did not extend to the sugar mill but veered to the southeast (along the route of the present road to Niihau).

Other 20th century documents record improvements to the Kauai road system and developments to the landscape adjacent to the present Kaunualii Highway project area. Hans Isenberg, minister of the Lutheran church at Lihue, observed in his journal in 1909: "Macadam roads increasing on the island" (in Damon 1931:914). According to Isenberg, at the Lihue cemetery, in 1911, some trees had been planted and the outer graves fenced to keep out horses. Also on May 6th of that year, the first meeting of the Lihue Public Cemetery Association was held (*Ibid.*:914).

The 1903 map also shows the Koloa-Lihue road extending across "Grove Farm", a sugar plantation which had been established several decades earlier in the 19th century.

George N. Wilcox bought the embryo Grove Farm plantation in 1870 from Herman Widenmann for \$12,000, three-quarters of which was borrowed. Four years later he had 200 acres under cultivation. In 1881 Wilcox bought 10,500 acres of land at Haiku from Princess Ruth. This increased the acreage of Grove Farm tenfold and made the plantation economically feasible. With machines, irrigation ditches, and Wilcox's ability, it became a very profitable enterprise. (Joesting 1984:221)

In the 1920s, Grove Farm began a building program at Puhi, along the route of the present Kaunualii Highway:

About 1920 George [Wilcox] began construction of a completely modern camp at Puhi in the heart of the expanding plantation. Instead of building houses haphazardly as new families moved in, a complete village was laid out with streets, a playground, room for gardens, and lawns. The houses had proper kitchens equipped with running water and enough bedrooms for each family depending upon the number of children. (Krauss 1965:310)

As indicated by an aerial photograph of 1924, Lihue, was by then a burgeoning plantation town and the county seat, with sugar plantation operations existing in close proximity to government buildings (Figure 5). Another photograph from the 1920s indicates that the Koloa-Lihue route remained a dirt road minimally cut through the surrounding terrain (Figure 6).

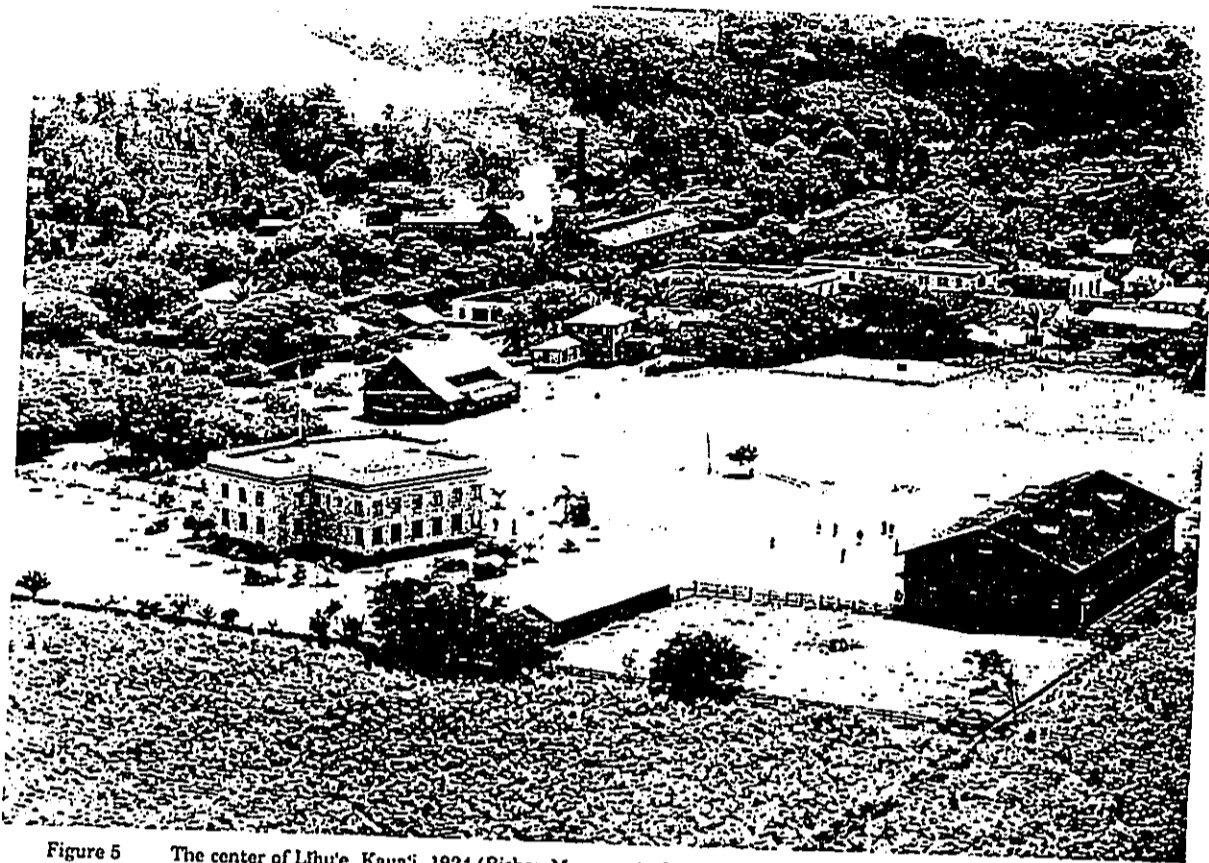


Figure 5 The center of Lihue, Kauai, 1924 (Bishop Museum Archives)

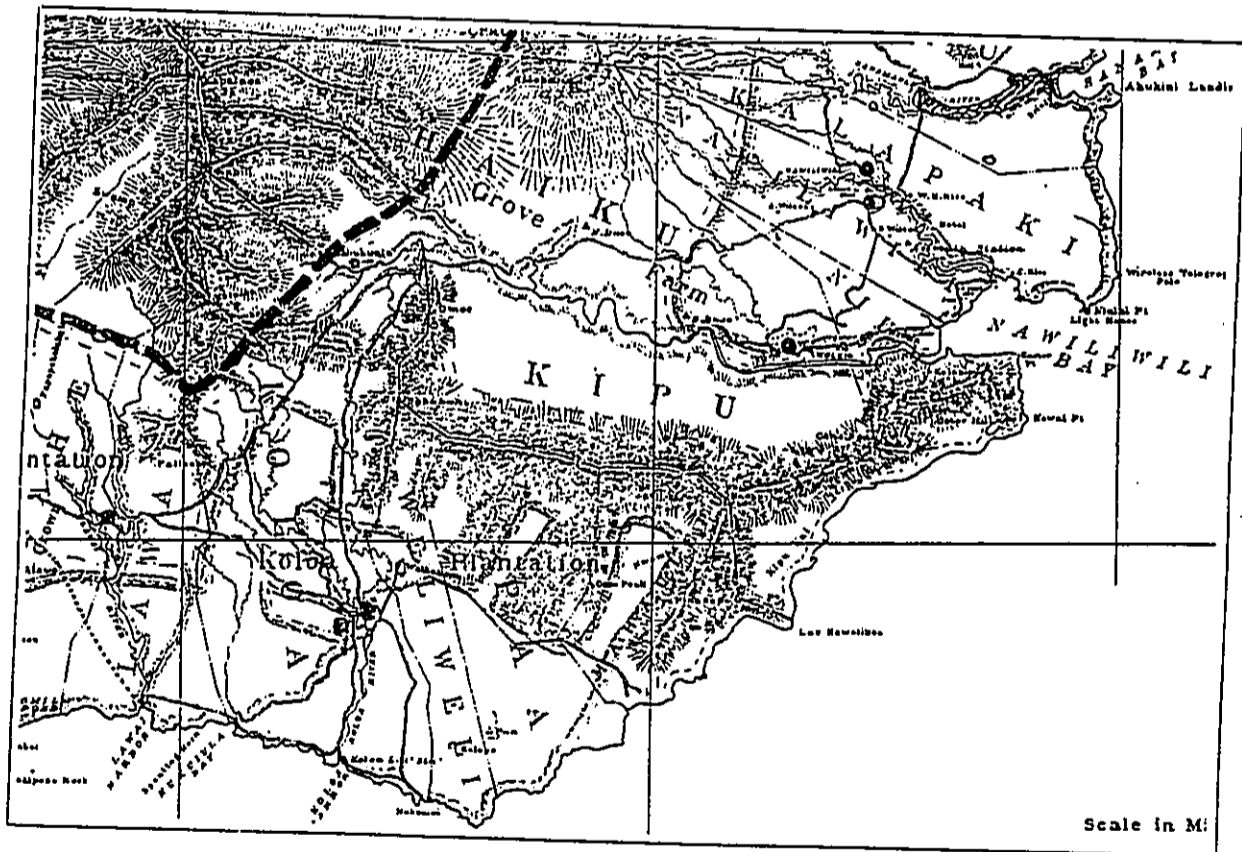


Figure 4 Portion of 1903 Hawaii Territory Survey map of Kauai showing road from Lihue to south and southwest Kauai



Figure 6 View of road between Lihu'e and Kōloa, Kaua'i, ca. 1920s (Bishop Museum Archives)

It was during the 1930s, when Federal funds became available to assist the Territory of Hawaii's highway construction program, that development of the present Kaunua'i Highway project area accelerated. On October 10, 1933, Hawaiian Contracting Co., Ltd. was awarded a \$354,355.63 contract for construction of a 5.066-mile long portion of the Kaua'i Belt Road (i.e. the present Kaunua'i Highway) extending west from the junction with the road to Kōloa. The project, identified as NRH 12-B, was funded by the National Recovery Highway Fund, the Federal Aid Fund, and a contribution by the County of Kaua'i. A 1935 map issued by the Territorial Highway Department shows that project 12-B had been completed and that the rest of the Belt Road to Lihu'e required "construction or reconstruction" (Figure 7).

The "construction or reconstruction" of the Belt Road was completed incrementally during subsequent years. In 1936, Hawaiian Contracting Co. was awarded contracts for construction of the road east of the Kōloa, projects WPH-12-H and FAP-12-G comprising a total of 2.573 miles. The Territorial Highway Department map of July 1, 1936 indicates that the two projects were then under construction (Figure 8).

At the same time that the Belt Road construction program was underway, during the mid-1930s, Grove Farm was further expanding into Pūhi. It moved its headquarters there, constructing a new office building, shop and stables:

The new plantation headquarters was a snug, concrete building with grey-white walls and a Hawaiian style roof of grey cement shingles. Broadbent (the plantation manager) and Alexander (the assistant manager) shared a room almost as big as the entire old office. Time keepers had the main room, the bookkeeper a space for himself. The engineering department worked in another small room and supervisors had desks for filling out reports.

Nearby, across the compound, young Bill Moragne was busy erecting an all electric-powered plantation repair shop. By the end of 1936, Grove Farm would be the most modern, best-equipped plantation in the Territory of Hawaii. (ibid.:336)

A 1938 photograph shows the plantation headquarters building at Pūhi, adjacent to the newly-completed section (FAP 12-P) of the Belt Road (Figure 9).

By December of 1950, the Kaua'i Belt Road from Kōloa to Lihu'e was completed, the total route comprising two projects (Figure 10). Project No. F 12 (17) covered the construction of 6.062 miles between the Kōloa junction and, at the Lihu'e end, the junction with the road to Nāwiliwili; final cost of the project was \$255,860.00. At the Nāwiliwili road junction, an additional project - No. F 24 (2) costing \$34,162.56 - extended the Belt Road 0.616 miles directly into Lihu'e Town over the Lihu'e Mill Bridge. The bridge itself was constructed by the Territorial Highway Department in 1936. Adjacent to the Lihu'e Mill Bridge, the Ho'omana Bridge had been constructed earlier, in 1928, by the Lihu'e Plantation over a railroad alignment leading to its sugar mill.

A set of aerial photographs (taken on November 22, 1950) of the Kaua'i Belt Road - present Kaunua'i Highway project area (on file at Cultural Surveys Hawaii) shows sugarcane fields planted on the flat lands along almost the entire length of the Belt Road, just before its December 20, 1950 completion date. The only areas where historic-era

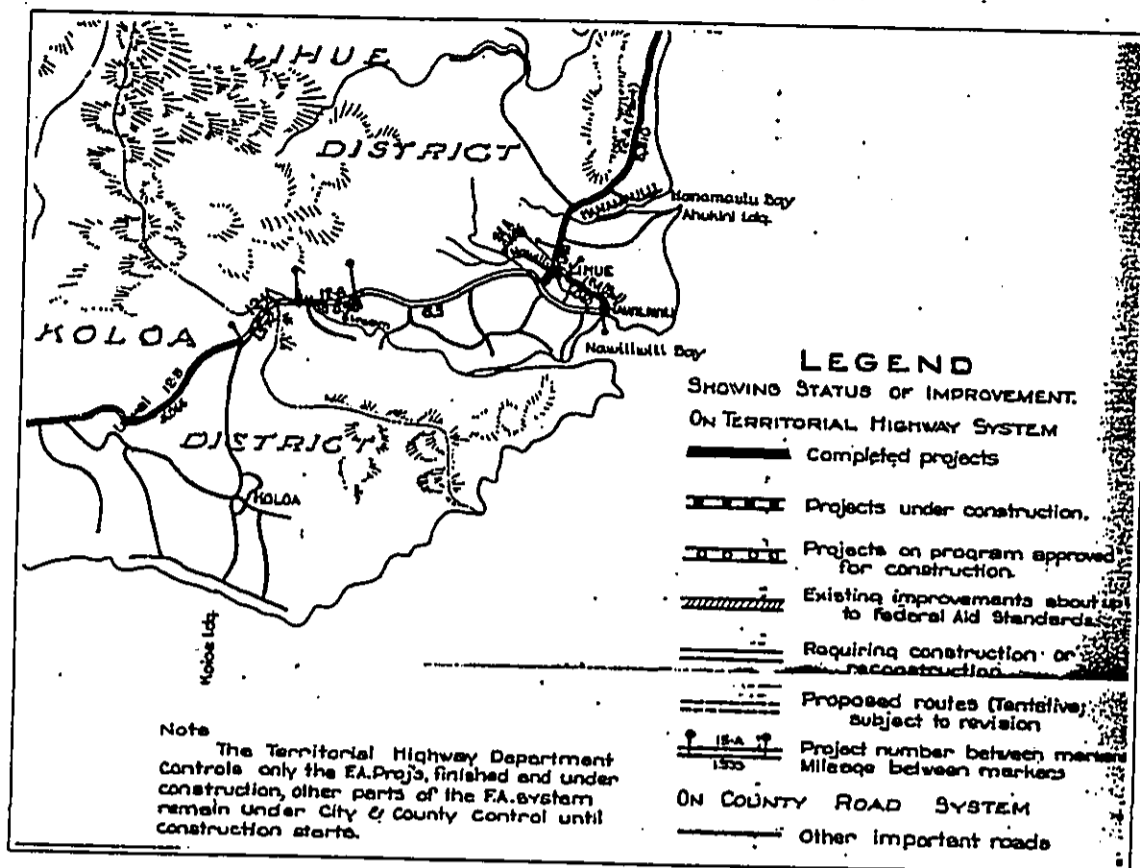


Figure 8 1936 Territorial Highway Department map showing portions of the Kauai Belt Road-present Kaunualii Highway project area then under construction

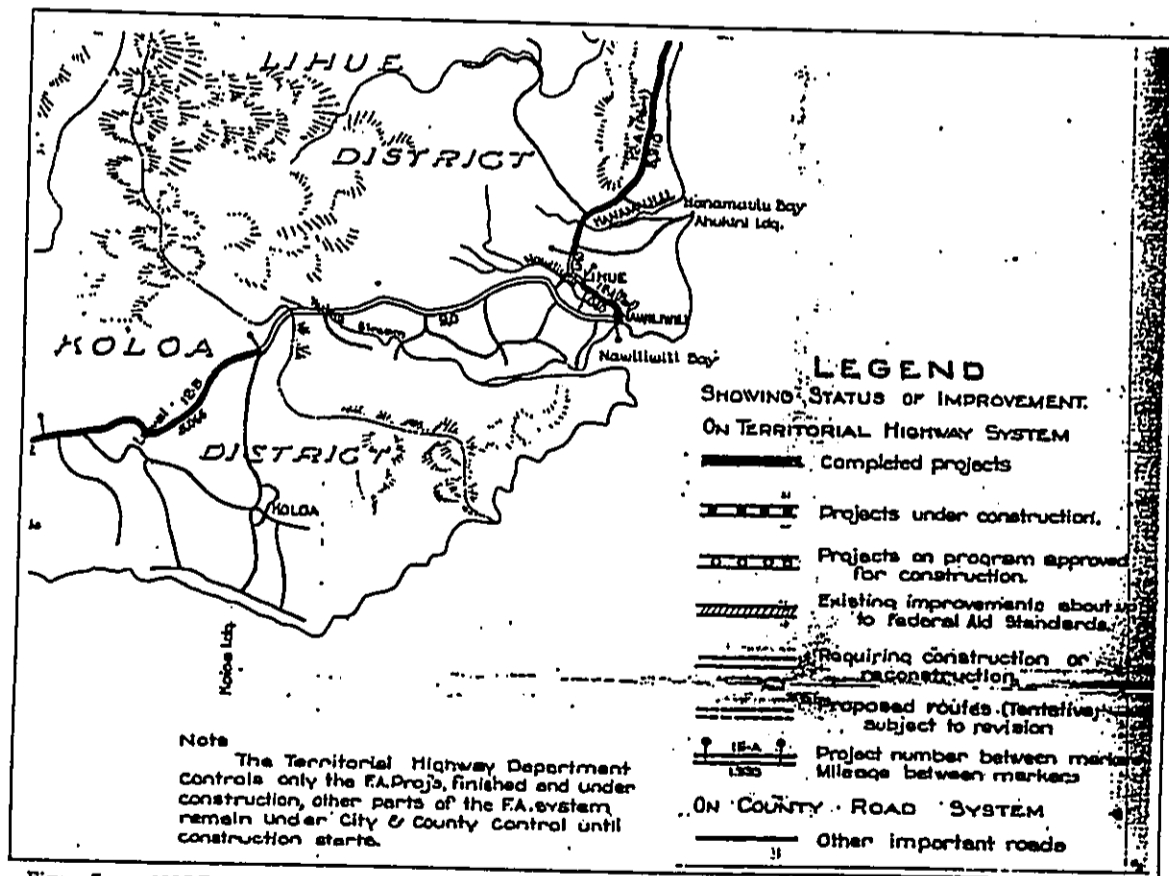


Figure 7 1935 Territorial Highway Department map showing the completed portion - Project NRH 12-B - of the Kauai Belt Road-present Kaunualii Highway project area

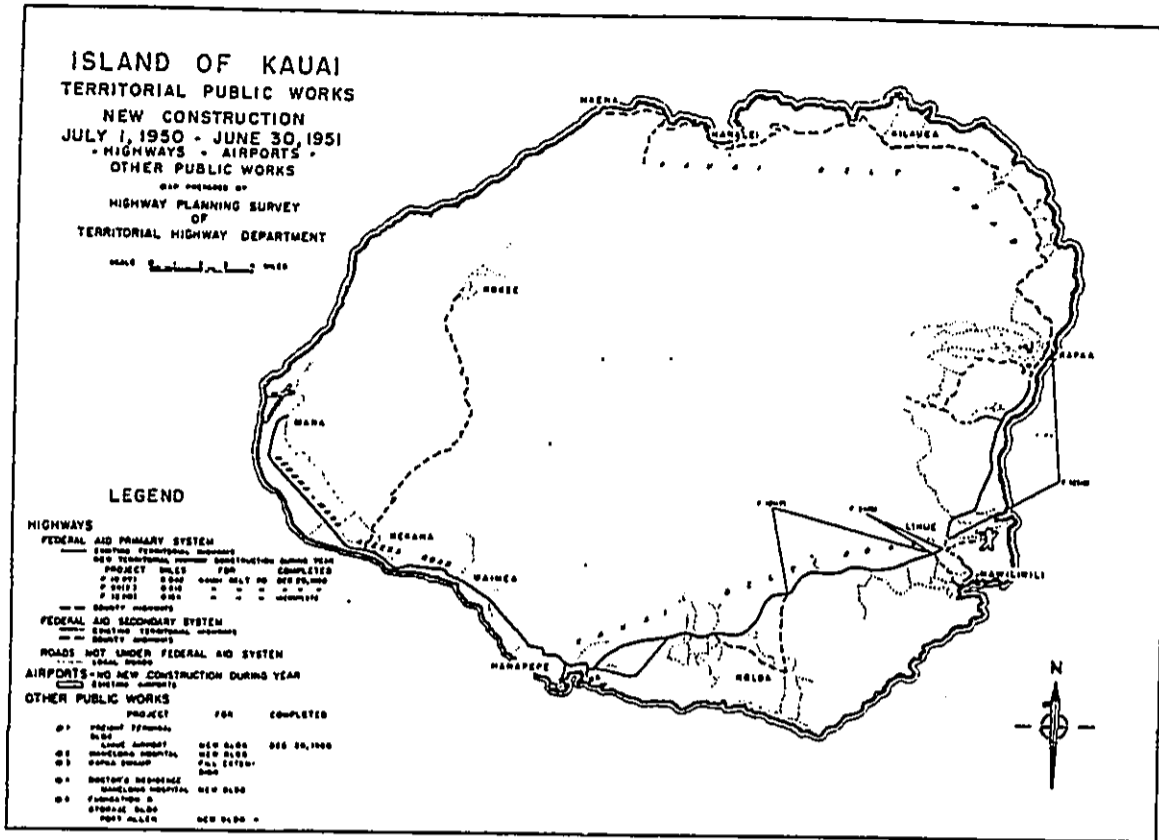


Figure 10 1951 Territorial Highway Department map showing completed Kauai Belt Road projects F 12 (17) and F 24 (2)

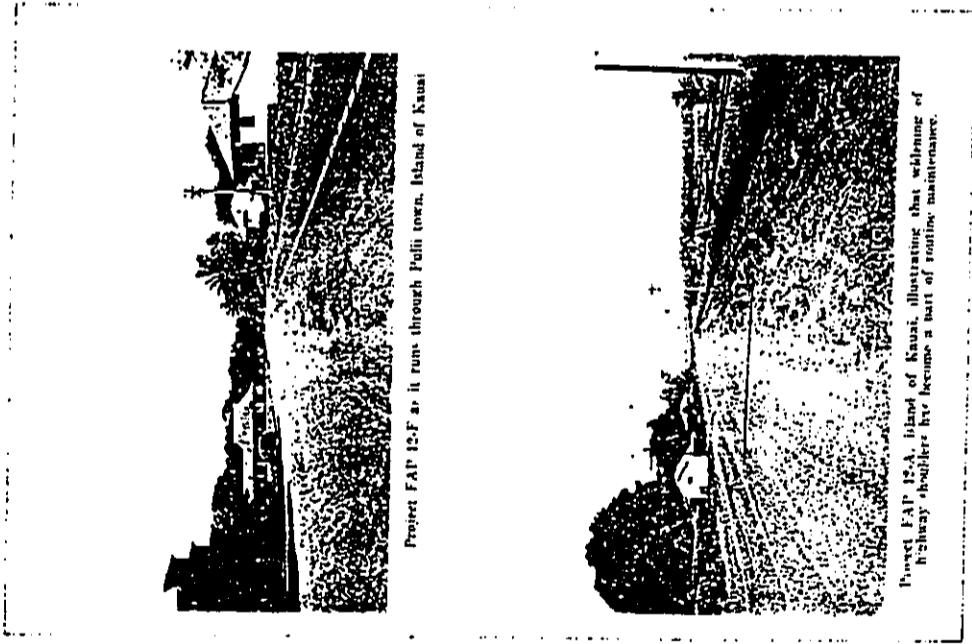


Figure 9 Grove Farm buildings at Puhi in 1938 (from Report to the Governor...by the Superintendent of Public Works for the Year Ending June 30, 1938)

constructions are visible in close proximity or adjacent to the Belt Road-present Kaumuali'i Highway project area at Puhi and at the Lihue (east) end of the project area (Figures 11 & 12). At Puhi, the Grove Farm plantation camp and headquarters buildings are visible immediately adjacent to the road right-of-way, just as shown in the earlier 1938 photograph (see Figure 9 above).

At the Lihue end of the present project area are the Hoomana Overpass and Lihue Mill bridges. Also visible, in the 1950 aerial photograph, are buildings on both sides of the Belt Road, just beyond the mill bridge. According to information provided by Mr. Hoby Goodale, a longtime *kama'aina* resident of Kaua'i, these buildings comprised the "Kiiipaki Camp", named for the plantation workers from the Gilbert Islands who once resided there (personal communication: May 29, 1998). Mr. Goodale also recalled vegetable gardens planted in the camp area. The camp remained in existence through the 1950s and into the 1960s. Sometime later, the camp was removed.

1977-78 orthophotoquad maps of the entire length of the present Kaumuali'i Highway project area show the sugarcane fields that, through most of this century, have girded the route between Lihue and the Gap (Figures 13 & 14). The only significant area, along the present Kaumuali'i Highway corridor, that appears to have escaped sugarcane cultivation is the Hule'ia River Gulch. This gulch area would be otherwise impacted in 1989 when the Kaumuali'i Highway was improved by a new 420-foot concrete bridge across the Hule'ia River. The bridge replaced the old "Halfway Bridge" which had been constructed in the 1930s. The new bridge marked the last major construction and modernization project within the present Kaumuali'i Highway project area until the present.

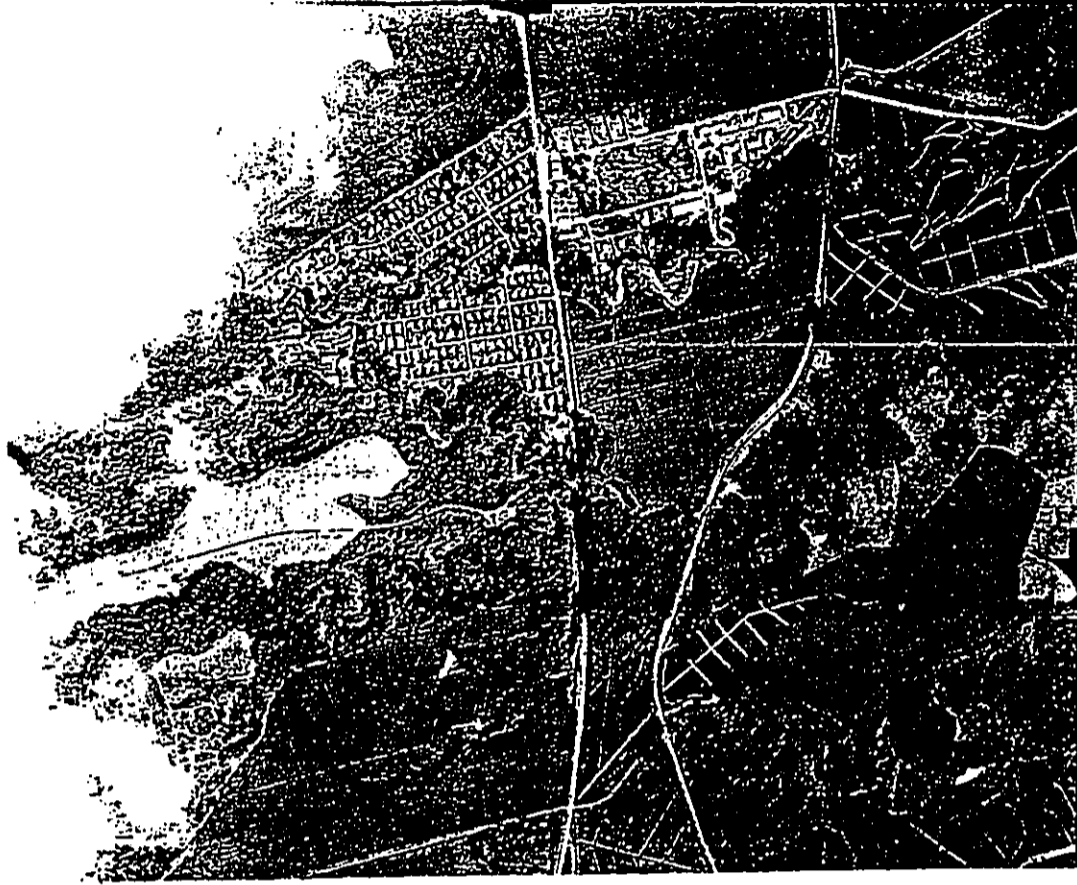


Figure 11 1950 aerial photograph showing Kaumali Belt Road through Grove Farm Puhi Camp area (R.M. Towill)

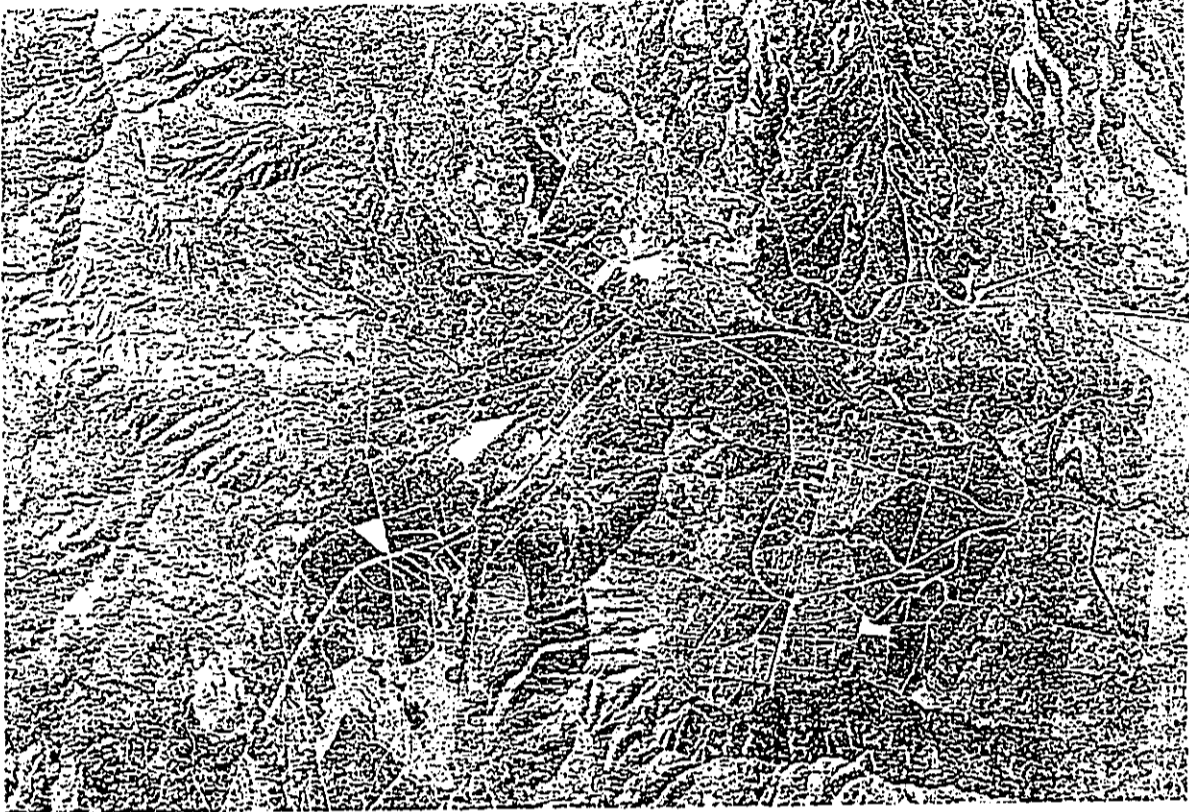


Figure 11 1977-78 U.S.G.S. orthophotoquad map showing western portion of the Kuaui Belt Road-present Kaunualoi Highway corridor project area

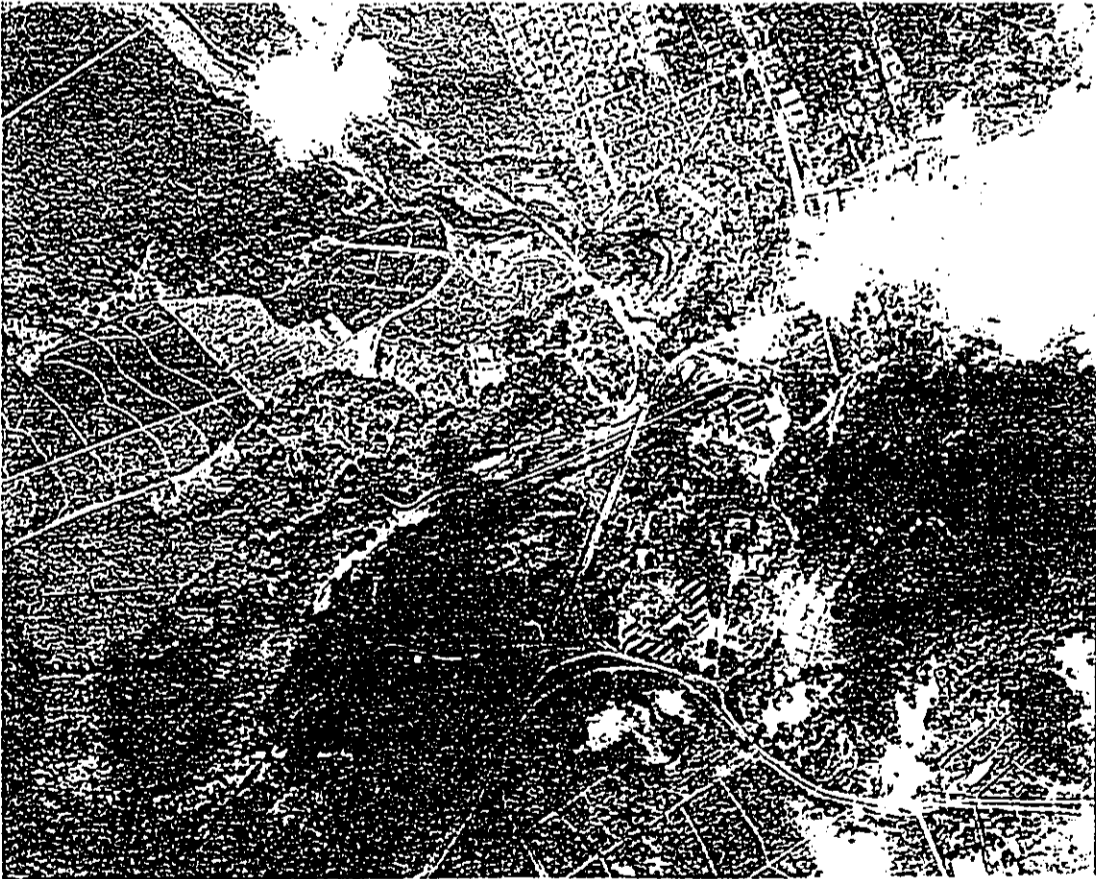


Figure 12 1950 aerial photograph showing Lahave end of Kuaui Belt Road (R.M. Towell)

III. PREVIOUS ARCHAEOLOGICAL AND HISTORICAL RESEARCH

A. Archaeological Studies

The first attempt at comprehensive archaeological survey of Kaua'i was undertaken by Wendell Bennett (1931) of the Bishop Museum during the early 1930s. Bennett's survey report identifies no archaeological sites within or in the vicinity of the present Kaunualii Highway corridor project area. A review of reports presently on file in the library of the State Historic Preservation Division (SHPD) indicated that no archaeological surveys have been conducted within any portion of the present project area during the decades following Bennett's survey.

B. Registered Historic Sites

A review of records on file at the SHPD indicated that there are no historic sites currently on the Hawai'i State Register of Historic Places or the National Register of Historic Places - adjacent or in close proximity to the present Kaunualii Highway project area corridor.

The only recorded historic site in the vicinity of the project area is "Kilohana", the Wilcox residence at Puhi, which has been placed on the Hawai'i Register of Historic Places. However, the buildings and area specified on the Register comprise only the main house and guest house, and the immediately surrounding garden and lawns. This area is located approximately 250 meters from the Kaunualii Highway corridor.

C. Kaua'i Bridge Survey

During the mid-1980s, a survey of Kaua'i bridges was conducted as part of a revised State Bridge Inventory of State or County owned bridges constructed before 1941. (An earlier Kaua'i County bridge survey had been conducted in the 1980s.) The draft report of this revised inventory is currently under review. According to information (personal communication: December 20, 1997) provided by staff of Spencer Mason Architects, which conducted the bridge survey, within the present Kaunualii Highway project area, only the Hoomana Overpass (Hoomana Road Bridge), which was constructed in 1928, and the Lihu'e Mill Bridge, constructed in 1936, were evaluated as eligible for nomination to the National Register of Historic Places. Two other bridges - Weowcopilau (built in 1937) and Waihoonu (built in 1934) had been identified as potentially significant in the original Kaua'i County bridge report but were dropped out when reevaluated at a state-wide level.

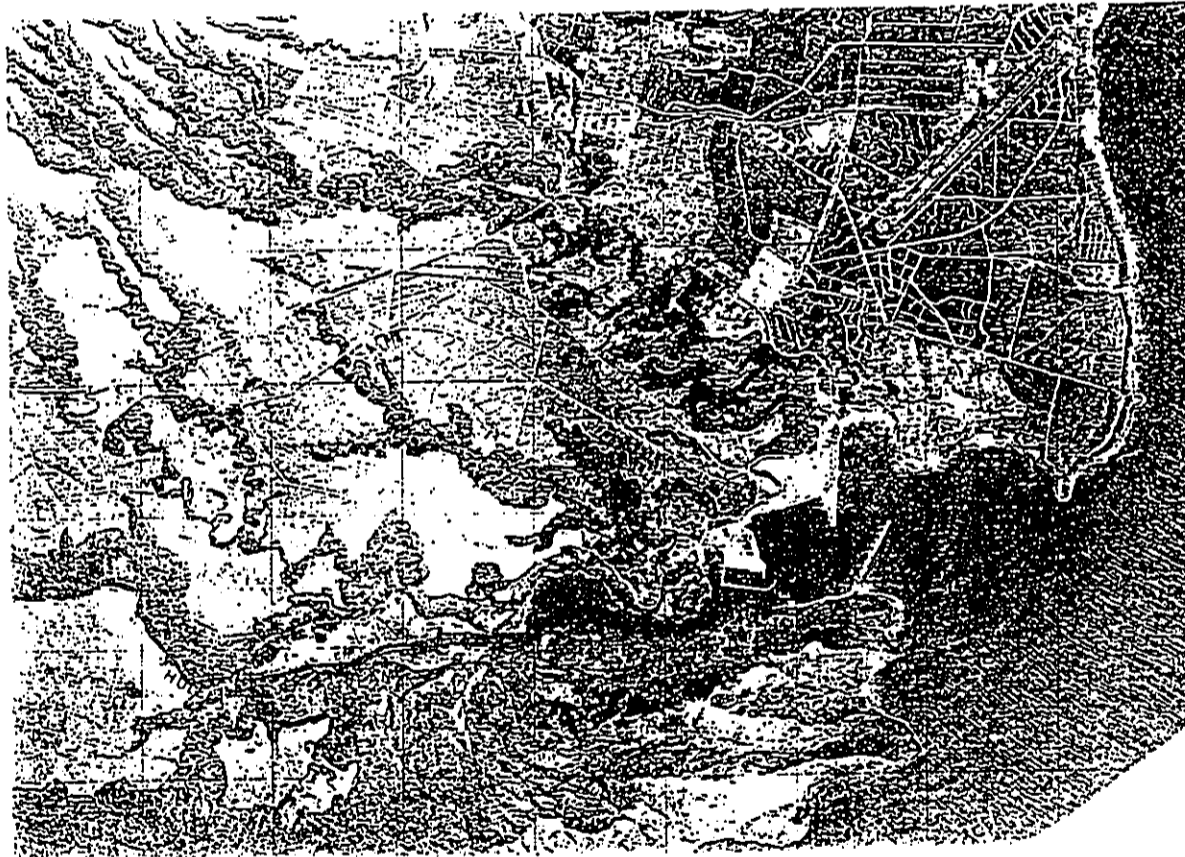


Figure 14 1977-78 U.S.G.S. orthophotoquad map showing eastern portion of the Kaua'i Belt Road-present Kaunualii Highway corridor project area

IV. RECONNAISSANCE SURVEY

A. Survey Methods

Reconnaissance survey of the Kaumuali'i Highway project area was accomplished on March 24 and May 13, 1998 by teams of one to three archaeologists including: Dr. Hallett H. Hammatt, project director; Gerald Ida; Matt MacDermott; and Rodney Chiogioji. The entire project area was inspected on foot and by vehicle. Findings were documented by field notes and photographs.

Special attention was given to areas along the highway corridor which background research (see sections II and III above) had identified as locations of known or possible archaeological and historic sites. These areas included:

- 1) the Hule'i'a River Gulch, identified in previous studies as an area of pre-contact Hawaiian settlement and agricultural activity;
- 2) Puhii, where historic photographs and documents indicated that Grove Farm headquarters and camp buildings (constructed in the 1920s and 30s) were located immediately adjacent to the then-Kaunani Belt Road;
- 3) the Lihue terminus of the project area, the location of two historic bridges, an historic cemetery, and a former plantation camp.

B. Survey Results

No archaeological sites or features were encountered during the surface survey of areas adjacent to the highway corridor. Extensive previous disturbance from sugarcane cultivation (previously documented in historic photographs; see Section II above) and modern urban development was evident along almost the entire length of the corridor (Figures 15 & 16). No isolated artifacts or midden materials were encountered in either disturbed or undisturbed areas.

Findings within the areas of special concern are described below:

Hule'i'a River Gulch

The gulch bottom was inspected a distance of 100 meters on both sides of the present "Halfway Bridge" (Figures 17 & 18). The area was heavily vegetated in California grass, *hau*, *kukui*, ferns and vines. No archaeological sites or features were evident. The only historic-era construction encountered were the remnants of the former Halfway Bridge, located just north of the present bridge (Figure 19).

Puhii

None of the Puhii plantation camp buildings visible along the north side of the present highway corridor in the 1938 photograph and 1950 aerial photograph (see Figures 9 & 11 above) were in evidence. Apparently, they have all been demolished or otherwise removed.

Adjacent to the south side of the highway corridor, the only remaining structure dating to the plantation era is the Grove Farm headquarters office building, constructed in the mid-1930s (Figure 20). The building continues to function as the plantation headquarters and the exterior appears little altered since the 1930s.



Figure 15
Sugarcane fields along Kaumuali'i Highway at west end of project area, view northeast

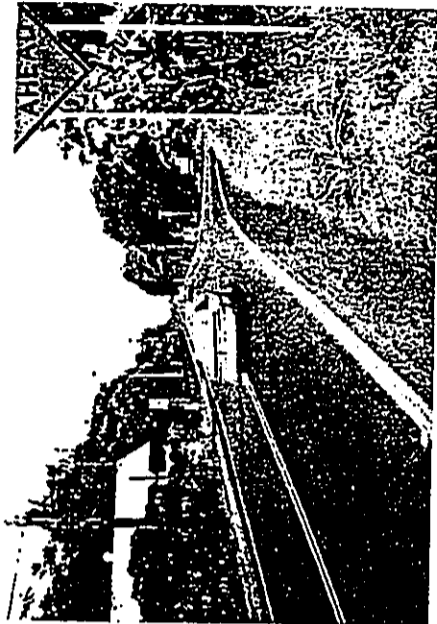


Figure 16
East end of Kaumuali'i Highway project area at Lihue Mill Bridge; view west



Figure 17 Huleia River Gulch below Halfway Bridge; view southwest



Figure 19 Remnant of former Halfway Bridge in Huleia River Gulch; view northwest



Figure 18 Huleia River Gulch below Halfway Bridge; view west

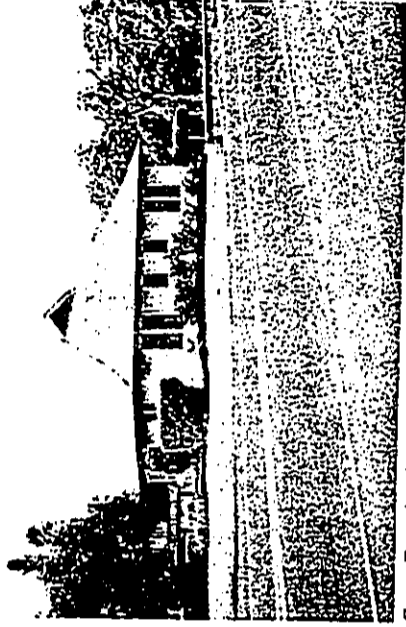


Figure 20 Grove Farm headquarters office building at Puhi; view southwest

Lihū'e

At the Lihū'e terminus of the corridor, the two historic-era bridges - the Lihū'e Mill and Hoomana Overpass - appear to have undergone no major reconstruction or modification since their construction in 1936 and 1928, respectively (Figures 21 & 22). Both continue to function.

Just west of the Lihū'e Mill Bridge, areas adjacent to the present highway corridor where structures were visible in the 1950 aerial photograph (see Figure 12 above) were inspected on foot (Figures 23 & 24). These structures, according to a *kama'āina* informant, comprised the former "Kiiipaki Camp". Except for a single wood shed on the north side of the highway corridor, no evidences of the former camp buildings were encountered.

Adjacent to the south side of the highway is the Lihū'e Public Cemetery, located on a knoll overlooking the highway and the Lihū'e Mill (Figures 25 & 26). The cemetery dates back to the 19th century; maintenance and expansion of the cemetery have continued to the present.

During the present survey, particular attention was given to the portion of the cemetery along the top of the slope above the Kaunuaiki Highway corridor. It was noted that grave sites are located in close proximity to the edge of the slope above the highway (Figure 27). Also, during inspection of the slope itself, a displaced grave marker was observed among tree roots (Figure 28).

A fragile 1940 map of the cemetery shows the layout of burials along the cemetery boundary above the present highway corridor (Figure 29). The map indicates that one area of the cemetery along the slope is retained by a wall. The other area is not similarly secured. It was on the slope below this area that the displaced grave marker was encountered.

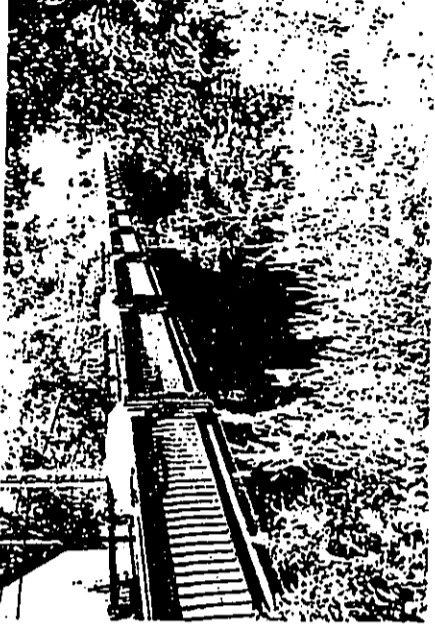


Figure 21
Lihū'e Mill Bridge; view west

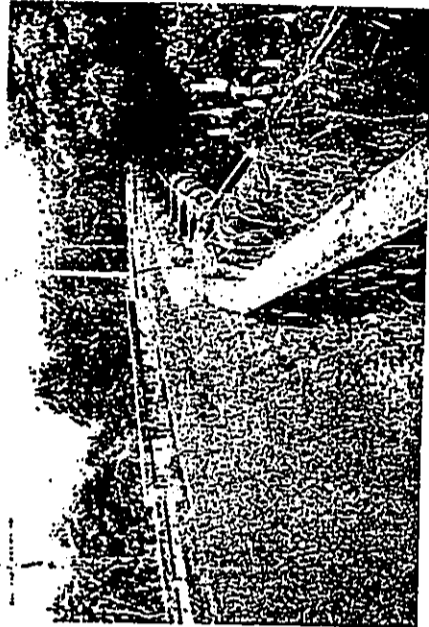


Figure 22
Hoomana Overpass Bridge; view north



Figure 23 Former "Kilipaki Camp" site on south side of Kaunualii Highway; view north



Figure 24 Former "Kilipaki Camp" site on north side of Kaunualii Highway showing wooden shed; view north

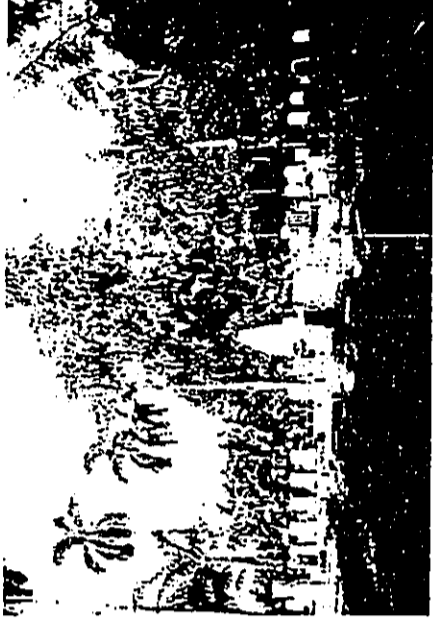


Figure 25 Lihue Public Cemetery; view west

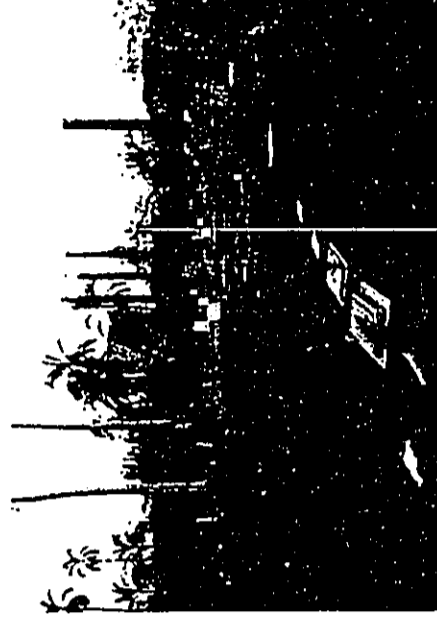


Figure 26 Lihue Public Cemetery showing Lihue Sugar Mill in distance; view east



Figure 27
 Lihue Public Cemetery showing rows of grave sites along edge of slope above Kaunani Highway; view northwest

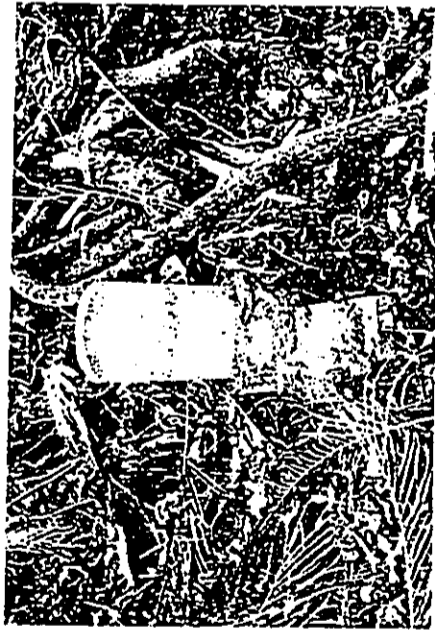


Figure 28
 Lihue Public Cemetery showing displaced grave marker on slope above Kaunani Highway; view south

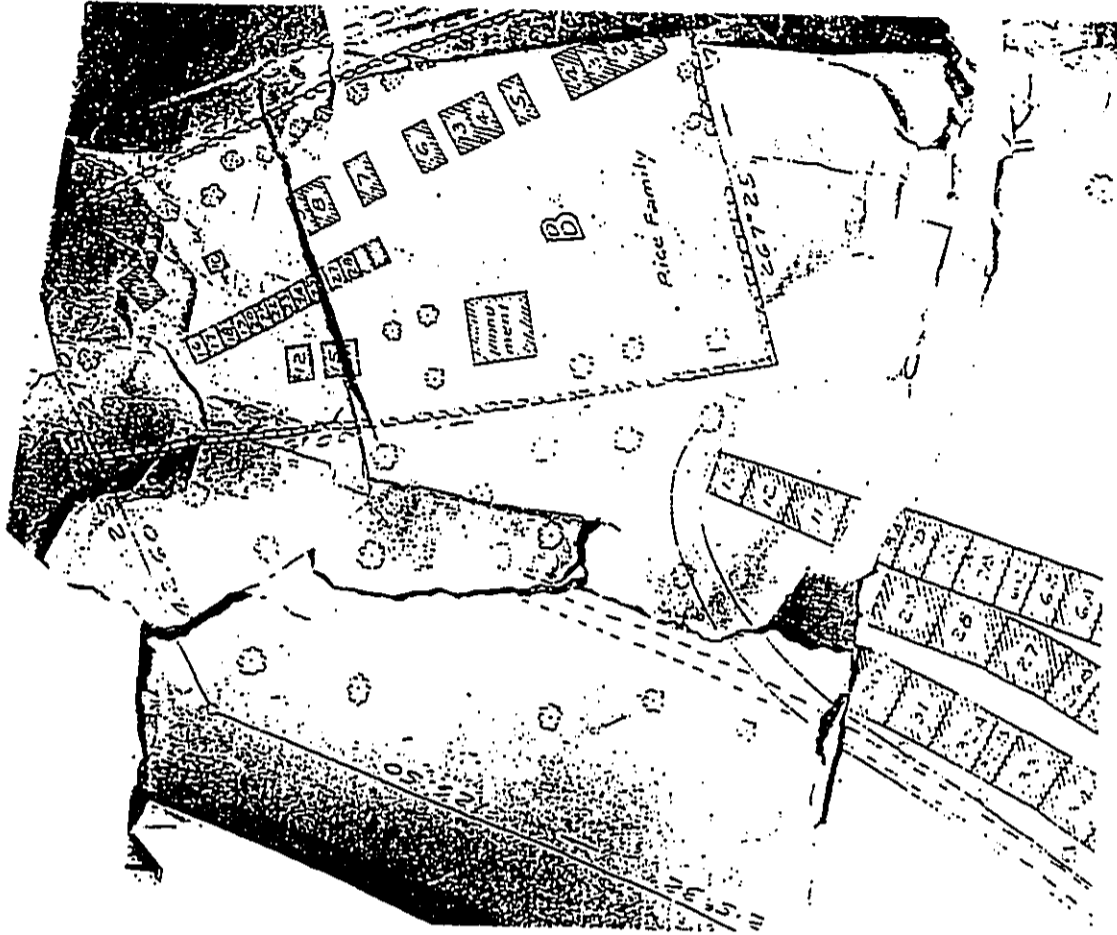


Figure 29
 Portion of 1940 map of Lihue's Public Cemetery showing locations of grave sites along the boundary above the Kaunani Belt Road-present Kaunani Highway (Kaunani Museum)

V. SUMMARY AND RECOMMENDATIONS

A. Summary

Background research suggests that the specific route of the present Kaunualii Highway project area - through the Gap and on east to the Lihue sugar mill - was created as a result of the establishment of western commercial and social centers at Koloa and Lihue in the 19th century. Until the 1920s, the route was a simple dirt road, generally following the surface contours of the landscape with occasional, small, cut embankments.

The highway - then identified as a portion of the Kauai Belt Road - was incrementally paved, widened and landscaped during the 1930s and 1940s when Federal funds became available to assist the Territory of Hawaii's highway construction program. The highway was further modernized through the 1950s and into the 1980s with the completion of a new "Halfway Bridge" over the Huleia River gulch.

During the reconnaissance survey, no surface prehistoric archaeological sites were observed within 100 feet on either side of the highway corridor. Decades of agricultural, commercial and construction activities, dating back to the 19th century, have removed any evidences of surface sites.

However, four historic-era sites and areas of concern within or adjacent to the highway corridor were identified during the survey: the Grove Farm office building in Puhii, the Lihue Mill Bridge, the Hoomana Overpass Bridge, and the Lihue Public Cemetery.

B. Recommendations

The following recommendations are presented to address the three areas of potential impact that highway improvement could have to historic era features:

- 1) Because of its age and design, the Grove Farm office building on the south side of Kaunualii Highway in Puhii is potentially eligible for nomination to the State and National Registers of Historic Places. Highway improvements in this area of Puhii should therefore be confined to the north side of the existing right-of-way to avoid potential impacts to this building.
- 2) Both the Lihue Mill Bridge and the Hoomana Overpass Bridge are potentially eligible for nomination to the State and National Registers of Historic Places. Any alterations or impact to these structures should be coordinated with the State Historic Preservation Division of the Department of Land and Natural Resources.
- 3) Because of the close proximity of the Lihue Public Cemetery to the Kaunualii Highway right-of-way, and the cemetery's location at the top of a steep bank on the south side of the right-of-way, improvements to the highway on this side of the right of way should be avoided. Any modification to the steep bank between the cemetery and the highway could result in disturbance to existing graves.

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APPENDIX J

Hawaiian Traditional Practices Assessment

ABSTRACT

At the request of Park Engineering, Cultural Surveys Hawai'i conducted a traditional cultural practices assessment for a portion of the Kaunua'i Highway, beginning at the Lihue Mill Bridge road and extending west past Kaunua'i Community College (Puni) and ending about one kilometer past Matuhia Road (Tree Tunnel to Kōloa). The total stretch of the highway corridor studied is approximately 11.6 kilometers (7.13 miles) long. This portion of the highway is proposed for widening to effectively facilitate traffic flow.

A traditional cultural practices assessment studies the possible impact of a proposed project on cultural practices and native gathering rights within the broader context of the *ahupua'a*, as opposed to a microscopic study that is confined only to the immediate project area. Along with the components of historical research and documentation, the component of "talk-story" with knowledgeable informants regarding cultural practices is added.

This study did not identify any cultural practices within the proposed project area or, for that matter, any areas adjacent to or outside of the highway corridor. Since the 19th century, the vicinity was heavily utilized for agricultural, commercial and construction activities. These disturbances have removed nearly all evidence of cultural practices, knowledge of traditional land use and of Hawaiian sites in the area. Thus, a recommendation of no cultural impact was assessed to the proposed project.

HAWAIIAN TRADITIONAL PRACTICES ASSESSMENT FOR A PORTION OF THE KAUNUA'I HIGHWAY CORRIDOR, THROUGH NAWILIWILI, HA'IKO, AND KŌLOA AHUPUA'A, ISLAND OF KAUAI

by

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and
Hallett H. Hammatt, Ph.D.

Prepared for
Park Engineering

Cultural Surveys Hawai'i
June, 2000

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I. INTRODUCTION

A. Project Description

At the request of Park Engineering, Cultural Surveys Hawai'i has conducted a Hawaiian traditional practices assessment of a portion of the Kaunualii Highway on the island of Kaula'i (Figures 1-2). The portion of the highway under study is approximately 11.5 kilometers long (7.13 miles), extending west from the Lihue Mill Bridge, through Puhi, and terminating approximately 1 kilometer west of Maluhia Road (to Koloa). This portion of the highway is proposed for widening to facilitate traffic flow and increasing vehicular capacity.

B. Scope of Work

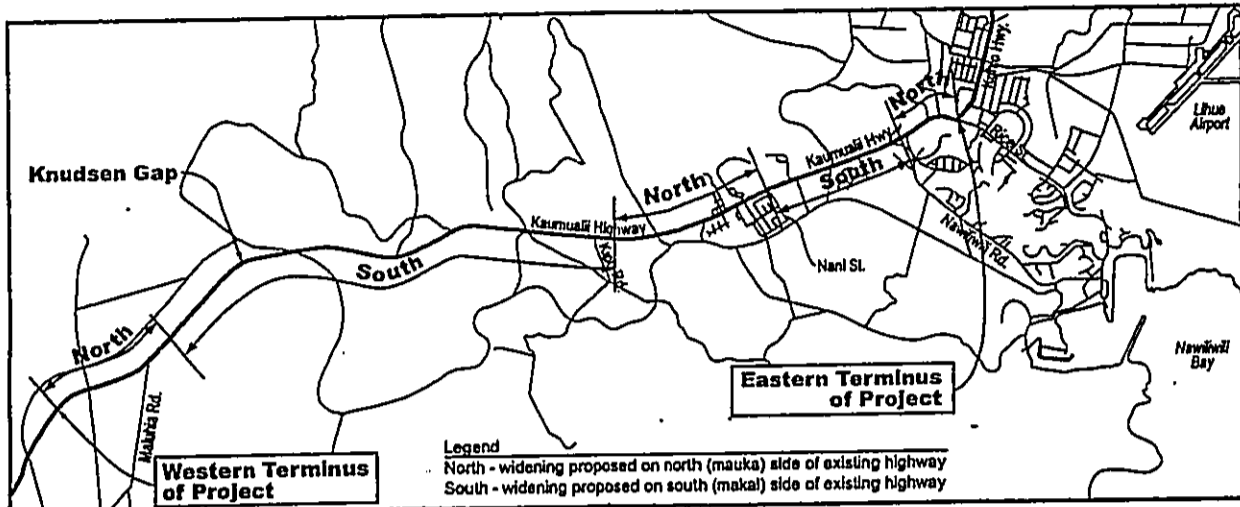
The scope of work is as follows:

1. Examination of historical documents, Land Commission Awards, historic maps, with the specific purpose of identifying traditional Hawaiian activities including gathering of plant, animal and other resources or agricultural pursuits as may be indicated in the historic record.
2. A review of the existing archaeological information pertaining to any sites on the property as this may allow us to reconstruct traditional land use activities and identify and describe the cultural resources, practices and beliefs associated with the parcel and identify present uses, if appropriate.
3. Conduct oral interviews with persons knowledgeable about the historic and traditional practices in the project area and region to provide expert testimony on this specific corridor. We anticipate coordination with a number of Kaula'i and Hawaiian organizations.
4. A field inspection to identify traditional practices issues on site.
5. Preparation of a report on items 1-4 summarizing the information gathered related to traditional practices and land use. The report will assess the impact of the proposed action on the cultural practices and features identified in the project area.

C. Methods

A field inspection to identify traditional practices issues was conducted on June 23, 2000. No cultural issues were identified.

Background research included: a review of previous archaeological studies on file at the State Historic Preservation Division of the Department of Land and Natural



Source: ParEn, Inc.

Figure 2 Map showing portions of proposed widening for the Kaumuali'i corridor

3

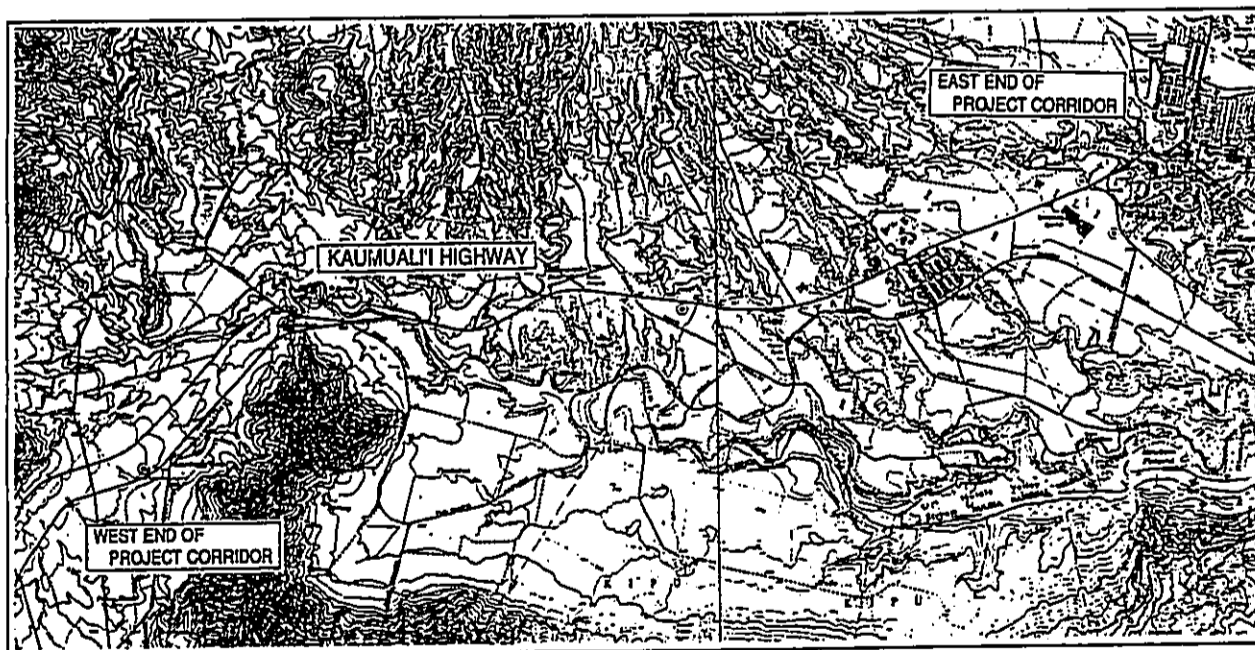


Figure 1 Portion of USGS 7.5 Minute Series Topographical Map, Lihue and Koloa Quadrangles, showing Kaumuali'i Highway corridor project area

2

Resources; review of documents at the Hamilton Library of the University of Hawai'i, the Hawai'i Public Library, the Hawai'i State Archives, the archives of the Bishop Museum, the libraries of Cultural Surveys Hawai'i, and study of historic maps.

Cultural Surveys Hawai'i consulted with approximately 40 individuals, Hawaiian organizations and groups in an attempt to identify knowledgeable *kupuna* and *kama'āina* residents regarding cultural practices, Hawaiian settlements, sites, burials or any other related cultural practices which might be affected by the proposed project. The consultations did not identify any knowledgeable *kupuna* or *kama'āina* to interview regarding cultural practices within the immediate project area or the broader *ahupua'a* land divisions through which the Kaunua'i Highway passes. A common reply of those who were consulted was, "The ones who would know are all gone now." For a listing of people and organizations contacted, see "Section IV" (Results of the Cultural Assessment) of this report.

II. CULTURAL AND HISTORICAL BACKGROUND

This section begins with a review of the available documentary evidence for the general character of the present Kaunua'i Highway project area as it had evolved in the years before western contact in the later 18th century. The development of lands surrounding the highway corridor during the 19th century and into the early 20th century was recorded in increasingly abundant documentation - including government records, private accounts, newspapers, maps and photographs. Finally, during subsequent decades of the 20th century, abundant documentation allows a more precise focus on the Kaunua'i Highway corridor and its environs.

A. Pre-Contact to 1800

In the ancient Hawaiian past, Kaua'i was divided into 5 traditional *moku* or districts: Halele'a, Ko'olau, Puna, Kona and Nā Pali. Much of the Kaunua'i Highway corridor being considered for widening passes through the Puna District and enters into the Kona District. Just beyond where Hule'ia Stream crosses under Half-way Bridge, at Kahoea, marks the boundary between Puna and Kona. This spot also demarcates the traditional Hawaiian boundary between what is considered Pele's domain (Puna) and Kamapua'a's domain (Kona).

Much of the Puna District is a flat plain nestled between the Hā upu mountain range to the south and the Makaleha mountain range on the north. Puna is fed by four main water sources, the Hule'ia River, the Hanamā'ulu River, Ke'ālia River and the Wailua River. Some stories say that the district of Puna was settled by Punamūkaianaina who came to Hawai'i from the Marquesas around 1000 - 1100 A.D. (Formander 1969:46-46).

The gateway that bridged east and west Kaua'i was called simply, the Gap. If there was a Hawaiian name for this Gap, its traditional name did not survive the passage of time.

There is one way through (the) thin mountain ridge (across central Kaua'i), a place where the barrier briefly parts. This lapse in the ridge is the way between east and west Kaua'i. It is called the Gap and travelers have used it since the beginning.

(Joesting 1984:216)

The route of the Kaunua'i Highway runs through the "Gap" between Kahoea and Pu'uomoe (Omoe, on modern-day maps), connecting Līhu'e to south and southwest Kaua'i. Portions of the highway corridor, especially near the Gap within the present project area, likely follow the alignment of the traditional trail system that joined east and west Kaua'i. The Gap itself was the subject of traditional Kaua'i legends and premonitory tales, "for the clump of hau trees formerly near the bend of the mountains at the Gap was said to have been the hiding place of robbers and 'akua's' lurked in its hidden depths" (Rice 1991:53).

Further evidence that the Gap marked a well-known and well-traveled area of Kaula'i in pre-contact times was presented in testimonies by native Hawaiians during Commission of Boundaries sessions in the 1870s. These testimonies of the *kama'āhina* recorded in the proceedings of the commission throughout the Hawaiian islands provided otherwise anonymous Hawaiians an unprecedented opportunity to display not only a comprehensive understanding, passed down through generations, of the contours of the *āhupua'a*, but, at the same time, allowed them to reveal local traditions, place names, longer-existing sites including *heiau* and settlements, areas where traditional activities were practiced, and historic events they had witnessed or participated in. Testifying on the boundaries of Kōloa *āhupua'a* in 1874, Hupai stated: "The boundary of Kona and Puna [districts] was at Honea [i.e. above the Gap] that was where the battle flags were hung that was when the battles were fought" (Boundary Commission, Kauai, vol. 1; Hawaii'i State Archives).

East of the Gap, the present highway corridor crosses the Huleia River gulch, an area where traditional Hawaiian agricultural activities dating to pre-contact times have been noted:

The broad delta of the Huleia River is 1.5 miles long and a half mile wide, and is in the *āhupua'a* named Ha'iki, the next to last of the southeasterly valleys of Puna. This area was ideal for wet taro. Terraces continue upriver, and there were terraces up the streams that empty into the river. Old breadfruit and mango trees indicate that there were many Hawaiian *kūleana* up to 6 miles inland from the delta. (Handy and Handy 1972:427)

Traditional accounts give few clues to the exact routes of the trail system east of Gap, and no indication whether the present project area correlates to any pre-contact pathway.

B. 1800 to 1850

The evolution of the route between the Gap and the present Lihue Town - following the general alignment of the present highway corridor project area - would be generated by western-induced cultural and economic developments on Kaula'i begun in the first half of the 19th century.

On December 31, 1834, the Rev. Peter Gulick and his family arrived in Kōloa *āhupua'a*. Apparently the first foreigners to settle in the *āhupua'a* (Gulick had previously been stationed at Waimea), they initiated the process of rapid change that would re-shape Kōloa. In 1835 a 30 by 40 ft. grass house was erected as a meeting house and school. Rev. Gulick initiated sugar cane cultivation and collected a cattle herd for the Protestant Mission. In 1837 an adobe church was built and the first mission doctor, Thomas Lafon, arrived to assist Gulick. The Kōloa mission station apparently flourished immediately; Charles Wilkes, a member of the U.S. Exploring Expedition visiting Kōloa in 1840, recorded:

The population in 1840, was one thousand three hundred and forty-eight. There is a church with one hundred and twenty-six members, but no schools. The teachers set apart for this service were employed by the chiefs, who frequently make use of them to keep their accounts, gather in their taxes &c. The population is here again increasing partly by immigration, whence it was difficult to ascertain its ratio. (Wilkes 1845)

Further confirmation of the growth of Kōloa is given by James Jackson Jarves, who visited Kōloa and Kaula'i for nine months during the early 1840s:

Kōloa is now a flourishing village. A number of neat cottages, prettily situated amid shrubbery have sprung up, within two years past. The population of the place, also, has been constantly increasing, by emigration from other parts of the island. It numbers, now, about two thousand people, including many foreigners, among whom are stationed a missionary preacher, and physician, with their families. (Jarves 1844:100)

The arrival of "many foreigners" was the cause of - and the native emigration to Kōloa was the result of - the many commercial activities that burgeoned beginning in the 1830s. Among these commercial enterprises was Ladd and Company which, in 1836, gained from the king and local chiefs the lease of about one thousand acres at Kōloa to be planted in sugar. The lease ran for 50 years at \$300 a year and "allowed the use of the waterfall and an adjoining mill site at Maulili pool, not far from the thousand acres, together with the right to build roads, the privilege of unrestricted buying and selling and freedom from local herb-herb dues (Judd 1936:57). That the company obtained the "right to build roads" suggests that construction of horse and carriage roads was an early priority of the western homesteaders and entrepreneurs settling at Kōloa on south Kaula'i. Already in the 1830s, according to a visitor, James Townsend, there was "a good road made by the natives over a gentle ascent of about two miles" between the Kōloa landing and the developing Kōloa town (Townsend 1839).

Western homesteading and commerce moved into the lands above Nāwiliwili Bay that would evolve into Lihue Town within a few years after the establishment of the missionary and business activities at Kōloa. Two years after he had arrived at the mission station at Kōloa, Dr. Thomas Lafon moved east to open a branch of the Kōloa church:

In 1839 . . . Lafon made his home in what became known as the Lihue district. The church he was in charge of there had been built by order of Kaikioewa Governor of Kaula'i. There must have been considerable activity in the Lihue area to cause Lafon to move there from Kōloa. James Jarves, who passed through the area in 1840, reported that in addition to the church there was a "straw palace," built for Keawenemahi, the wife of Kaikioewa. (Joesting 1984:153)

Kaikioewa, who died in 1839, had apparently intended to create a "city" at Lihue; according to Jarves, visiting in 1840:

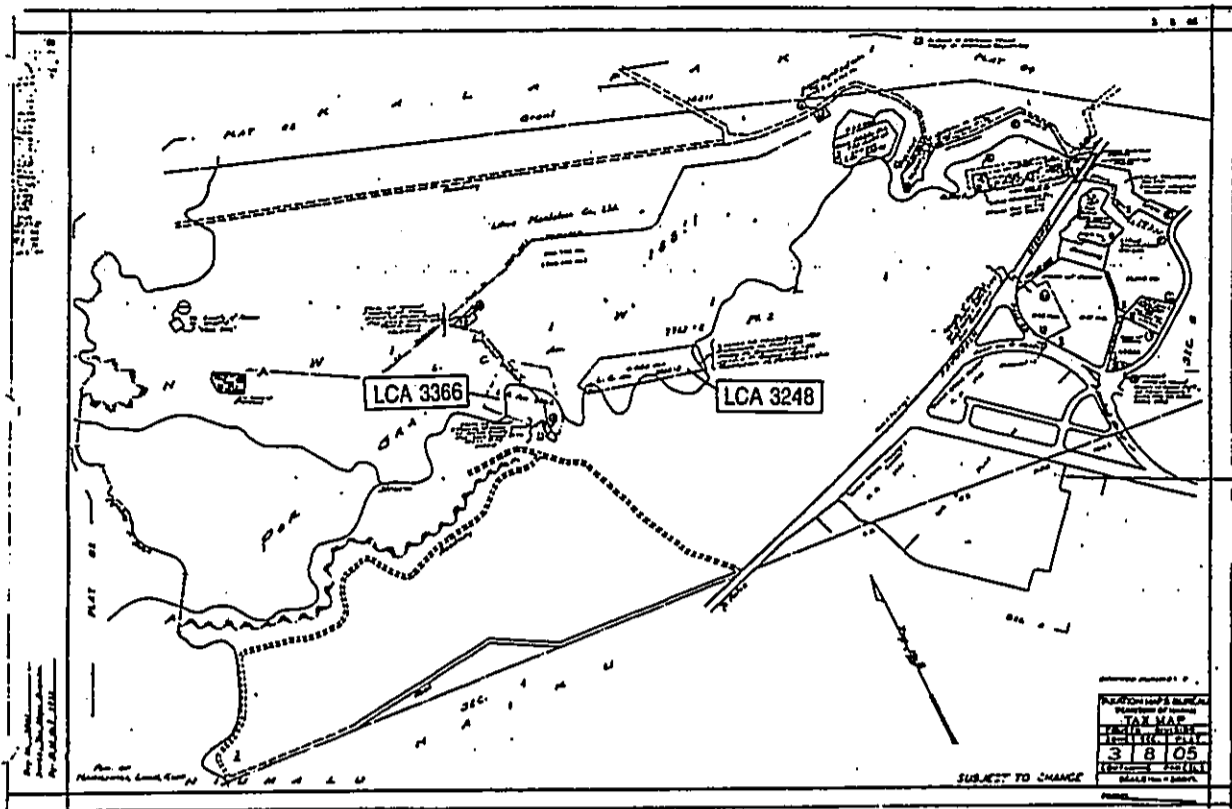


Figure 3 Tax map showing locations of Land Commission Awards north of the Kaumuali'i Highway project area

There is a fine tract of land which the late governor selected as a site for a plantation, many acres of which he caused to be planted in cane, and also built a large church, and a house for himself. But death soon terminated his scheme, and his city, that was to be, still retains its original diminutiveness ... (in Joesting 1984:153)

Kaikiowa's activities at Lihū'e did, however, draw a small community of westerns, including Dr. Lafon and his family, to the area, which impelled the creation of a horse trail between Kōloa and Lihū'e area. Accounts of 19th century travellers on the trail between Kōloa and Lihū'e present the first record of the lands surrounding the present Kaumuali'i Highway. William DeWitt Alexander, son of the former Waiohi missionary William P. Alexander, described a return visit to Kōloa in 1849, six years after his family had left the island. Traveling on horseback from Kōloa to Waitua, Alexander noted in his diary:

We then rode through a gap in the hills, leading out from Kōloa. The scenery was very fine, and worthy of Kōloa. Mauna Kāhili was close on the left, & on the right a beautiful range of hills extending towards the northeast, and terminating in an abrupt peak which goes by the name of "Hoary Head" [Hā'upul]. We rode on over a beautiful undulating table land, dotted with groves of lauhalā and kukui. After riding about five miles, we crossed a stream fitly called Stoney Brook. We afterwards crossed many other streams on our way. Five miles further we passed Dr. Lafon's former residence. Here we began to descend towards the sea. (Alexander 1991:122)

Apparently, Alexander observed no conspicuous Hawaiian settlements between the Gap and Dr. Lafon's residences in the Lihū'e area.

Mahale and Land Commission Award Documentation

The Organic Acts of 1845 and 1846 initiated the process of the *Mahale* - the division of Hawaiian lands - which introduced private property into Hawaiian society. In 1848 the crown and the *ali'i* (royalty) received their land titles. The present Kaumuali'i Highway project area crosses three *ahupua'a*: Kōloa, Hā'ikū, and Nāwiliwili. Kōloa *ahupua'a* was awarded - Land Commission Award (LCA) 7714-B - to Moses Kekuaiwa, brother of Alexander Lāhōlilo (Kamehameha IV) and Lot Kamehameha (V). Hā'ikū and Nāwiliwili *ahupua'a* were awarded - LCA 7713 - to Victoria Kamamalu, sister of Kamehameha IV, Kamehameha V, and Moses Kekuaiwa. Documents associated with these awards give no indication of specific land uses or activities within the present highway project area.

Kūleana awards for individual parcels within the *ahupua'a* were subsequently granted in 1850. These awards were presented to tenants - native Hawaiians, naturalized foreigners, non-Hawaiians born in the islands, or long-term resident foreigners - who could prove occupancy on the parcels before 1846 (Apple 1978:45). Current tax maps indicate only two *kūleana* awards in the near vicinity of any portion of the present project area. The two awards - LCA 3366 to Nika and LCA 3248 to Hanale - are located in Nāwiliwili *ahupua'a*, along Nāwiliwili Stream, to the north of the present highway project area

(Figure 3). Records associated with these awards indicate that the two awarded parcels comprised *taro lo'i*. Additionally, testimony recorded for LCA 3366 indicates that the parcel was "bounded mauka by upper road from Wailua to Kōloa" (Foreign Testimony, vol.13, pg.147), suggesting that, at mid-19th century, the road extending eastward from Kōloa toward the Līhu'e area and on to the northeast coast of Kaua'i ran somewhat to the north of the present project area route.

C. 1850s to 1900

Western commerce at Kōloa and Līhu'e during the second half of the 19th century would further compel the development of an increasingly direct roadway between the two economic centers.

The landing at Kōloa became the official port-of-entry for Kaua'i in the 1850s and the Kōloa inhabitants participated in the profitable trade with the whaling industry whose peak years ran from the 1830s to the 1860s. An article in the *Pacific Commercial Advertiser* of Feb. 19, 1857 described the port and its flourishing commerce at the mid-19th century:

The anchorage is an open roadstead, the tradewind blowing along and a little off shore . . . For the trade of the port there is a small rude pier constructed which might be improved at no great outlay of labor. . . . Large quantities of firewood, bullocks and sweet potatoes are furnished to whalers in this port, and these chattels can no where be procured cheaper or better. It is estimated that 10,000 barrels of sweet potatoes are cultivated annually here, which are thought to be the best in the islands. Nearly all the potatoes furnished for the California market are produced here. . . . Sweet potatoes, sugar and molasses constitute the chief trade of the port.

The records of the Collector General of Customs at Kōloa document the exuberant trade in whale ship provisioning and produce shipping at the port. Typical entries, in addition to potatoes, include: pigs, goats, butter, wood, fowls, oranges, bananas, and eggs. The Many of these goods were transported from east Kaua'i over the Kōloa-Līhu'e road, which continued to be improved. A visitor to Kaua'i in 1865, William T. Brigham, noted described the route between Līhu'e and Kōloa:

From Līhu'e the road led over the plain with the mountains on the left. A ditch crossed and recrossed the road as it wound along the hills from the fountains to the canefields below. Owls (pueo) were very abundant. The Pass over the mountains was very good and not at all steep, and all the way which was some twelve miles, the road was very good, in fact a carriage road. Two hours riding brought me to Dr. Smith's [in Kōloa] at eight. (Lyvigate 1991:143).

The "very good" "carriage road" that Lyvigata observed in 1865 reflected not only the prosperity and activity at Kōloa, but also the growth of Līhu'e. In 1849, the firm of H.A. Peirce & Co. was established for the development of a sugar plantation at Līhu'e. The

company obtained up to 3,000 acres of land and by 1851 a water-driven sugar mill was constructed (on the site of the present Līhu'e sugar mill).

Hawaiians made up the labor force. They built their homes on the land surrounding the mill . . . Planting was begun in 1850 and the first crop, amounting to a little over 100 tons of sugarcane, was ground in 1853. (Joesting 1984:173)

Mary A.G. Rice presented, in 1914, a description of Līhu'e in 1850's when the new plantation was transforming the Līhu'e landscape. Rice describes the area of Līhu'e surrounding the present project area corridor near the plantation mill and the present Līhu'e Public Cemetery:

Though the roads ran somewhat differently from now they are very much the same with the exception that our present grades are vastly improved. . . .

The land extending from the cemetery and up as far as Mr. Stewart's residence and across to Halehaka was formerly one large grove of Kukui trees, flanked on one side by a grove of Koa. Sandal-wood grew in such quantities on the ridges and in the valleys in some sections that there grew up quite a lucrative business in cutting and exporting the same to China.

The Hawaiian village at Pualoki, consisting of thatched houses, extended from near the present cemetery across to the property occupied now as the Hawaiian parsonage and Government school. There were also large settlements of Hawaiians in Halehaka valley, Niūmalu, Nawiliwili and Hanamaulu valleys. (Rice 1991:47)

The cemetery Rice mentions is the present Līhu'e Public Cemetery, located adjacent and to the south of the Kaunua'i Highway, near the present Līhu'e Mill Bridge. According to information provided by the Līhu'e Public Cemetery Association, William Harrison Rice, the manager of the Līhu'e plantation, was the first person buried in the cemetery in 1862 (personal communication: May 29, 1998). (The cemetery also contains the reinterment site of someone who died in 1854.) The cemetery was established by the Rice family and, in subsequent years, the cemetery also became the resting place for members of other prominent families that had settled on Kaua'i. In a ca. 1890s photograph, the cemetery site appears among a stand of trees at the top of a hill overlooking the sugar mill (Figure 4). The photograph also shows that no bridge then spanned Nawiliwili Stream, adjacent to the mill.

Whether the Kōloa-Līhu'e road, during the 1890s, passed below the cemetery, as does the present Kaunua'i Highway is unclear in the photograph. A traveller's description of the period, however, characterizes the roadway clearly. Eric A. Knudsen, recounting a trip around Kaua'i in 1895, describes a horse ride on the Kōloa-Līhu'e road:

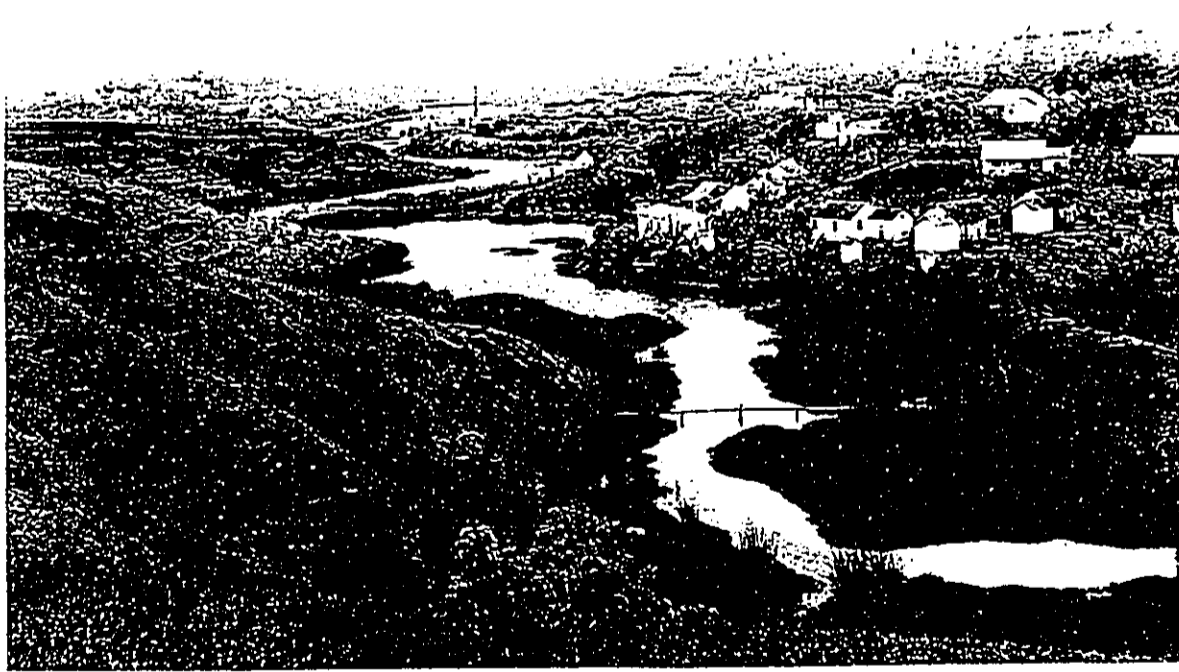


Figure 4 The sugar mill at Lihue, ca. 1890s, showing Lihue cemetery amid trees on hill overlooking the mill (Bishop Museum Archives)

... We dropped down into the Pō'e'e Stream, clambered up only to drop down again into the Ōnia'o River, and finally entered Kōloa Gap and joined the main road again near the base of Pu'u'uomoi [sic. Pu'uomoi].

From there the road led straight on towards Lihue. We crossed the Hulē in River at the Half-way Bridge and soon were riding down through the pasture lands of Grove Farm. The camp called Puhi was not in existence in those days [Knudsen's reminiscence was recorded in 1940] ... There had been a shower and the surface of the road was only half dry and as the horses dashed along they threw back clods of earth. (Knudsen 1991:151)

The area known as Grove Farm "was named from the grove of *kuiku* trees which had stood there since ancient days. In my childhood [Hannah Maria Rice, mid-1850's] it stretched almost up to our house [at Koamalulu]." (Damon 1931:29).

Koamalulu is most often thought of in terms of the Rice family home which was "Scarce a stone's throw" from the original Lihue Plantation store. Maria Rice reminisces about their family home:

Because the little panelled house from China stood in a grove of trees and was shaded by the sickle-shaped leaves of the silvery *koa*, it was called Koamalulu. It is said that Koamalulu was the name likewise of the land immediately surrounding the house, the store and a little further to the east down to Pualoki village, where is now the public grammar school. None of the oldest maps now extant give this name for the land, but one can well imagine that the soft shade of old *koa* trees, growing thick alongside giant *kuiku*s, had imprinted its name upon the land years before white men had planted there a house from across the China sea. (Damon 1931:451-52)

Near the end of the 19th century, the route through the Gap and on to Lihue remained an unpaved, dirt carriage road.

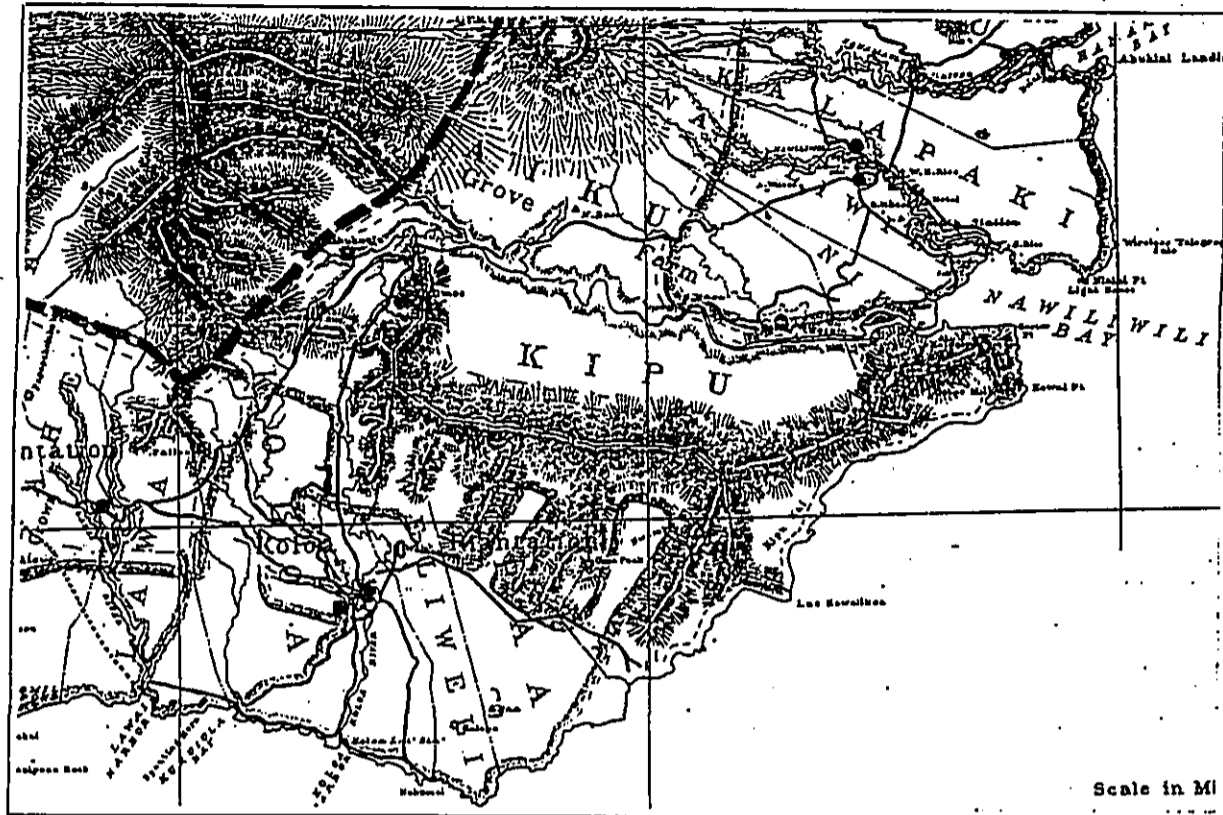


Figure 5 Portion of 1903 Hawai'i Territory Survey map of Kaua'i showing road from Lihue to south and southwest Kaua'i

D. 1900s to Present

By the first decade of the 20th century, the road between the Gap and Lihue was a portion of a road system extending from the southwest coast to the northeast coast of Kaua'i. A Hawaii Territory Survey map of 1903 shows that the road between the Gap and Lihue followed a much more irregular route, likely following the most accessible contours of the landscape, than that of the present Kaunuaui'i Highway project area (Figure 5). The map indicates that, toward Lihue, the road did not extend to the sugar mill but veered to the southeast (along the route of the present road to Niwiliwili).

Other 20th century documents record improvements to the Kaua'i road system and developments to the landscape adjacent to the present Kaunuaui'i Highway project area. Hans Isenberg, minister of the Lutheran church at Lihue, observed in his journal in 1909: "Macadam roads increasing on the island" (in Damon 1931:914). According to Isenberg, at the Lihue cemetery, in 1911, some trees had been planted and the outer graves fenced to keep out horses. Also on May 6th of that year, the first meeting of the Lihue Public Cemetery Association was held (*Ibid.*:914).

The 1903 map also shows the Kōloa-Lihue road extending across "Grove Farm", a sugar plantation which had been established several decades earlier in the 19th century:

George N. Wilcox bought the embryo Grove Farm plantation in 1870 from Herman Widemann for \$12,000, three-quarters of which was borrowed. Four years later he had 200 acres under cultivation. In 1881 Wilcox bought 10,500 acres of land at Haiku from Princess Ruth. This increased the acreage of Grove Farm tenfold and made the plantation economically feasible. With machines, irrigation ditches, and Wilcox's ability, it became a very profitable enterprise. (Joesting 1984:221)

In the 1920s, Grove Farm began a building program at Puhi, along the route of the present Kaunuaui'i Highway:

About 1920 George [Wilcox] began construction of a completely modern camp at Puhi in the heart of the expanding plantation. Instead of building houses haphazardly as new families moved in, a complete village was laid out with streets, a playground, room for gardens, and lawns. The houses had proper kitchens equipped with running water and enough bedrooms for each family depending upon the number of children. (Krauss 1965:310)

As indicated by an aerial photograph of 1924, Lihue, was by then a burgeoning plantation town and the county seat, with sugar plantation operations existing in close proximity to government buildings (Figure 6). Another photograph from the 1920s indicates that the Kōloa-Lihue route remained a dirt road minimally cut through the surrounding terrain (Figure 7).



Figure 5. View of road between Lihine and Kolen, Kamerun, 1925. Bishop Mission Archives.

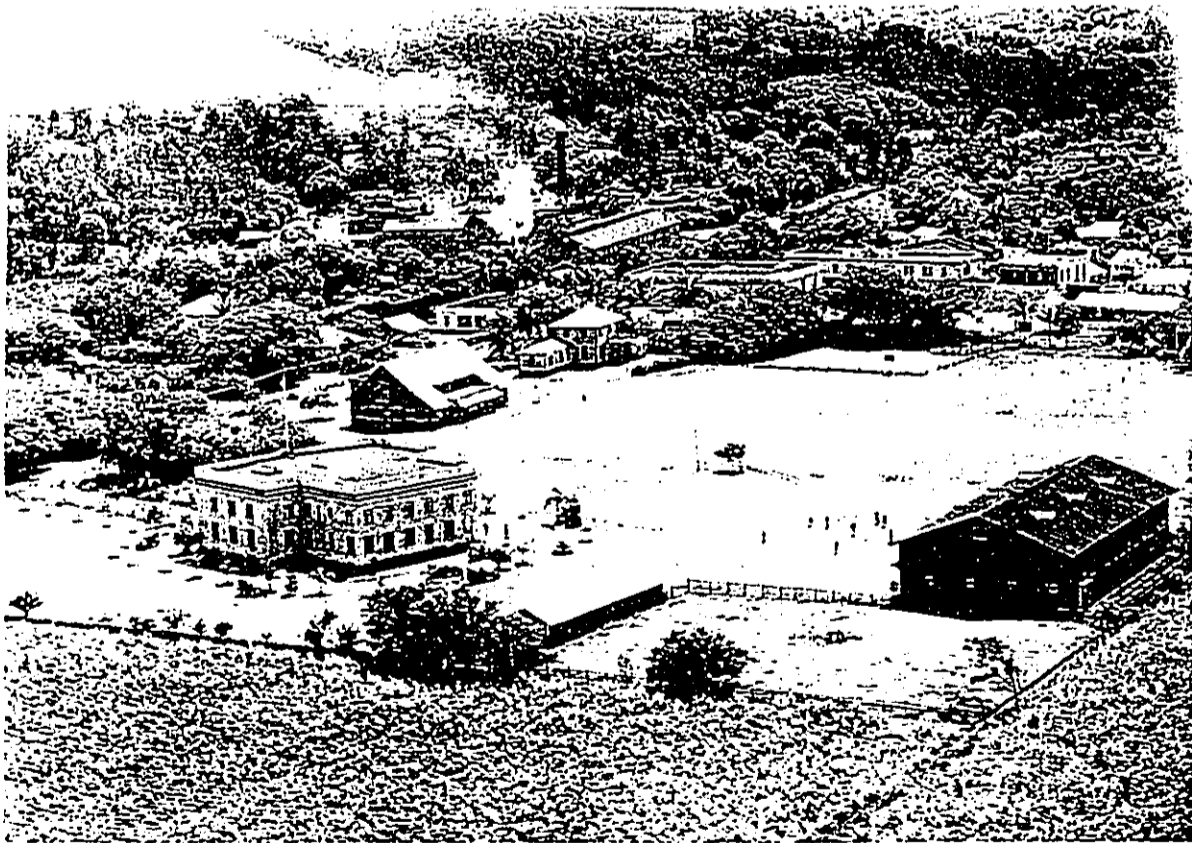


Figure 6. The center of Lihine, Kamerun, 1924. Bishop Mission Archives.

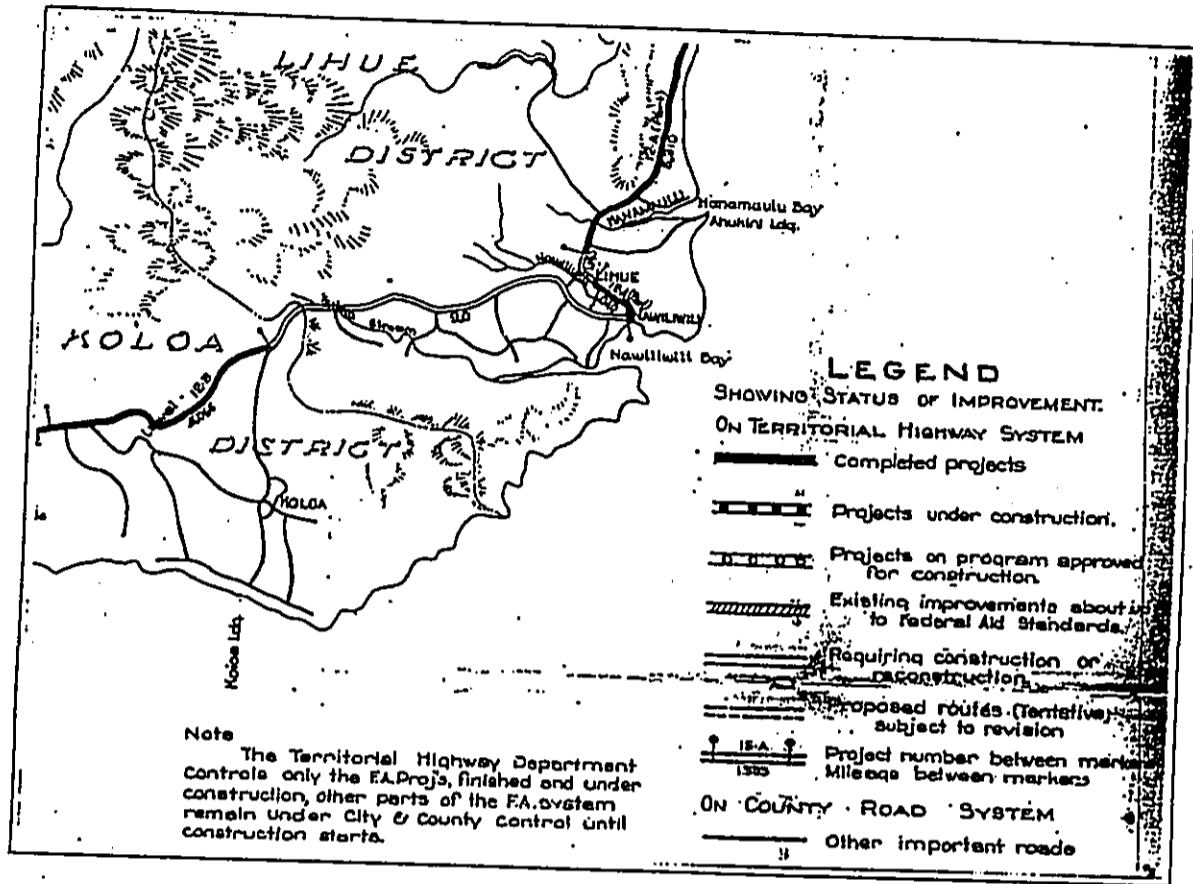


Figure 8 1935 Territorial Highway Department map showing the completed portion - Project NRH 12-B - of the Kaua'i Belt Road-present Kaunualii Highway project area

It was during the 1930s, when Federal funds became available to assist the Territory Highway project area accelerated. On October 10, 1933, Hawaiian Contracting Co., Ltd. was awarded a \$354,366.63 contract for construction of a 5.066-mile long portion of the Kaua'i Belt Road (i.e. the present Kaunualii Highway) extending west from the junction with the road to Koloa. The project, identified as NRH 12-B, was funded by the National Recovery Highway Fund, the Federal Aid Fund, and a contribution by the County of Kaua'i. A 1935 map issued by the Territorial Highway Department shows that project 12-B had been completed and that the rest of the Belt Road to Lihue required "construction or reconstruction" (Figure 8).

The "construction or reconstruction" of the Belt Road was completed incrementally during subsequent years. In 1936, Hawaiian Contracting Co. was awarded contracts for construction of the road east of the Koloa, projects WPH-12-H and FAP-12-G comprising a total of 2.573 miles. The Territorial Highway Department map of July 1, 1936 indicates that the two projects were then under construction (Figure 9).

At the same time that the Belt Road construction program was underway, during the mid-1930s, Grove Farm was further expanding into Puhii. It moved its headquarters there, constructing a new office building, shop and stables.

The new plantation headquarters was a snug, concrete building with grey-white walls and a Hawaiian style roof of grey cement shingles. Broadbent (the plantation manager) and Alexander (the assistant manager) shared a room almost as big as the entire old office. Time keepers had the main room, the bookkeeper a space for himself. The engineering department worked in another small room and supervisors had desks for filling out reports.

Nearby, across the compound, young Bill Moragne was busy erecting an all electric-powered plantation repair shop. By the end of 1935, Grove Farm would be the most modern, best-equipped plantation in the Territory of Hawaii. (*Ibid.*:336)

A 1938 photograph shows the plantation headquarters building at Puhii, adjacent to the newly-completed section (FAP 12-P) of the Belt Road (Figure 10).

By December of 1950, the Kauai Belt Road from Koloa to Lihue was completed, the total route comprising two projects (Figure 11). Project No. F 12 (17) covered the construction to Nāwiliwili; final cost of the project was \$255,860.00. At the Nāwiliwili road junction, an additional project - No. F 24 (2) costing \$34,162.56 - extended the Belt Road 0.616 miles directly into Lihue Town over the Lihue Mill Bridge. The bridge itself was constructed by the Territorial Highway Department in 1936. Adjacent to the Lihue Mill Bridge, the Ho'omana Bridge had been constructed earlier, in 1928, by the Lihue Plantation over a railroad alignment leading to its sugar mill.

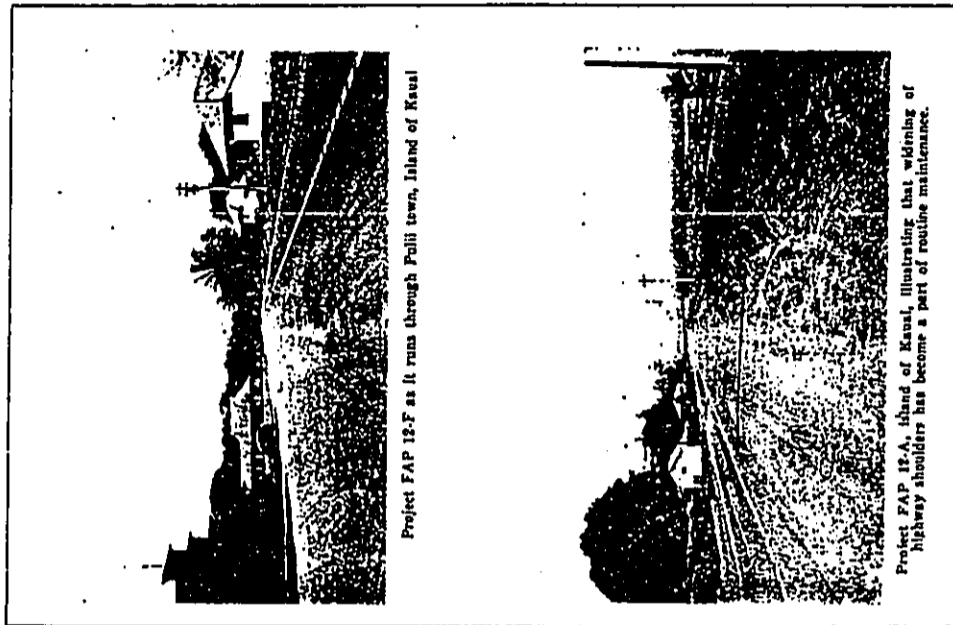


Figure 10 Grove Farm buildings at Puhi in 1938 (from Report to the Governor... by the Superintendent of Public Works for the Year Ending June 30, 1938)

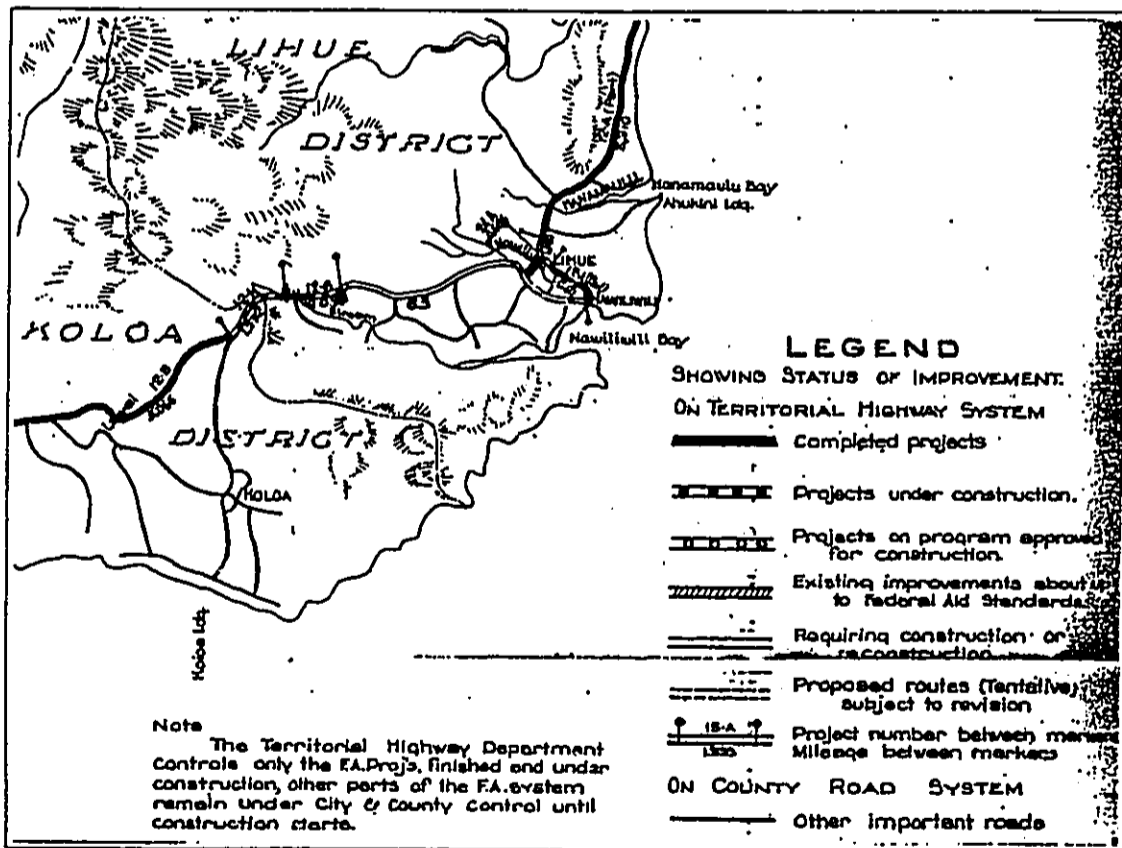


Figure 9 1936 Territorial Highway Department map showing portions of the Kaula'i Belt Road-present Kaula'i Highway project area then under construction

A set of aerial photographs (taken on November 22, 1950) of the Kaua'i Belt Road - present Kaumuali'i Highway project area (on file at Cultural Surveys Hawaii) shows sugarcane fields planted on the flat lands along almost the entire length of the Belt Road, just before its December 20, 1950 completion date. The only areas where historic-era constructions are visible in close proximity or adjacent to the Belt Road-present Kaumuali'i Highway project area are at Pūhi and at the Lūhū'e (east) end of the project area (Figures 11 & 12). At Pūhi, the Grove Farm plantation camp and headquarters buildings are visible immediately adjacent to the road right-of-way, just as shown in the earlier 1938 photograph (See figure 10 above).

At the Lūhū'e end of the present project area are the Hō'omana Overpass and Lūhū'e Mill bridges. Also visible, in the 1950 aerial photograph, are buildings on both sides of the Belt Road, just beyond the mill bridge. According to information provided by Mr. Hoby Goodale, a longtime *Kama'āina* resident of Kaua'i, these buildings comprised the "Kiipāki Camp", named for the plantation workers from the Gilbert Islands who once resided there (personal communication: May 29, 1998). Mr. Goodale also recalled vegetable gardens planted in the camp area. The camp remained in existence through the 1950's and into the 1960's. Sometime later, the camp was removed.

1977-78 orthophotoquad maps of the entire length of the present Kaumuali'i Highway project area show the sugarcane fields that, through most of this century, have girded the route between Lūhū'e and the Gap (Figures 13 & 14). The only significant area, along the present Kaumuali'i Highway corridor, that appears to have escaped sugarcane cultivation is the Hūle'ia River Gulch. This gulch area would be otherwise impacted in 1989 when the Kaumuali'i Highway was improved by a new 420-foot concrete bridge across the Hūle'ia River. The bridge replaced the old "Halfway Bridge" which had been constructed in the 1930s. The new bridge marked the last major construction and modernization project within the present Kaumuali'i Highway project area until the present.

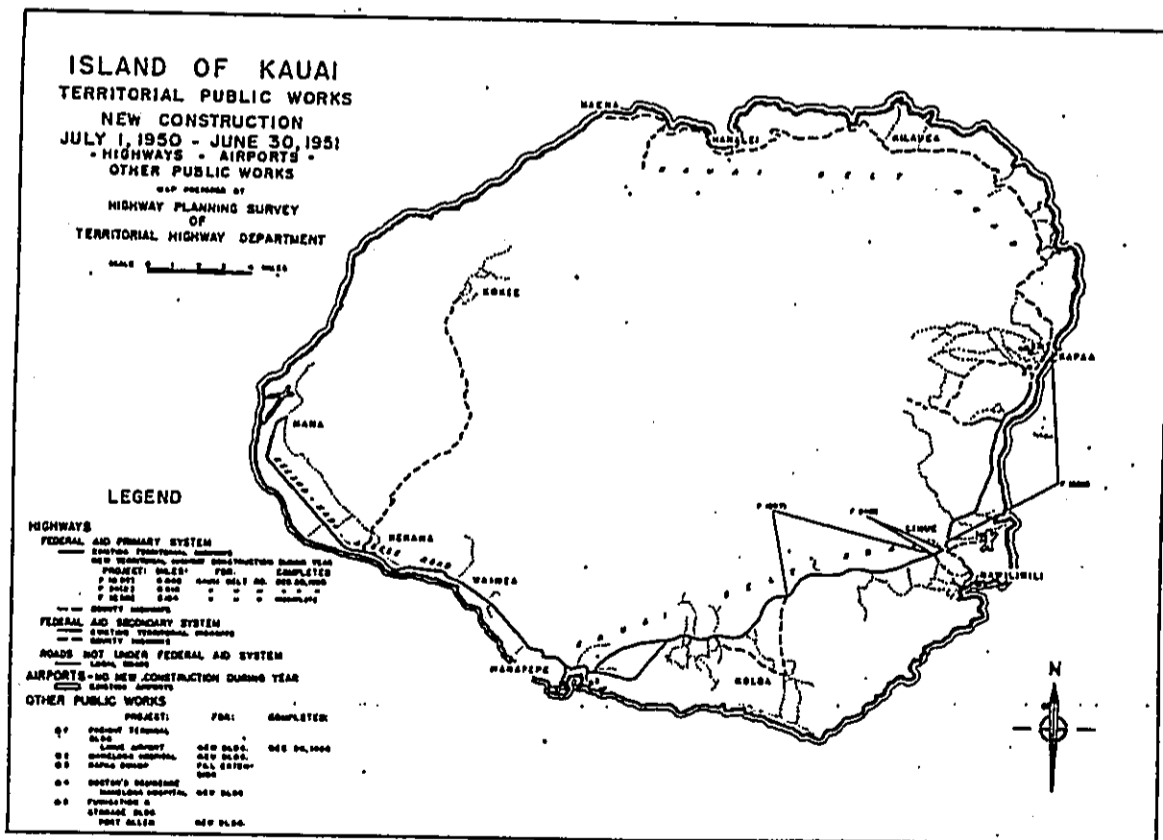


Figure 11 1951 Territorial Highway Department map showing completed Kaua'i Belt Road projects F 12 (17) and F 24 (2)



Figure 13 1950 aerial photograph showing Lahur'e end of Kana'a Belt Road (Lt M Towill)

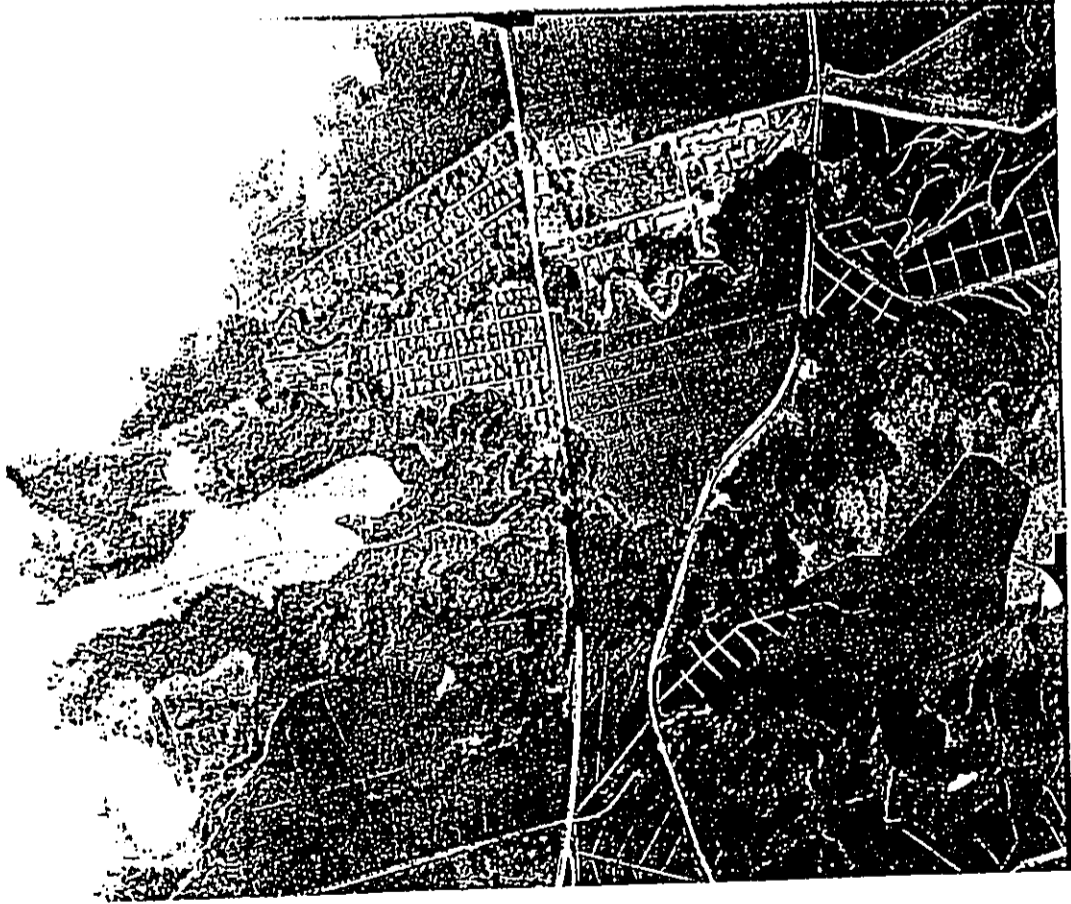


Figure 12 1950 aerial photograph showing Kana'a Belt Road through Grove Farm Poho Camp area (Lt M Towill)

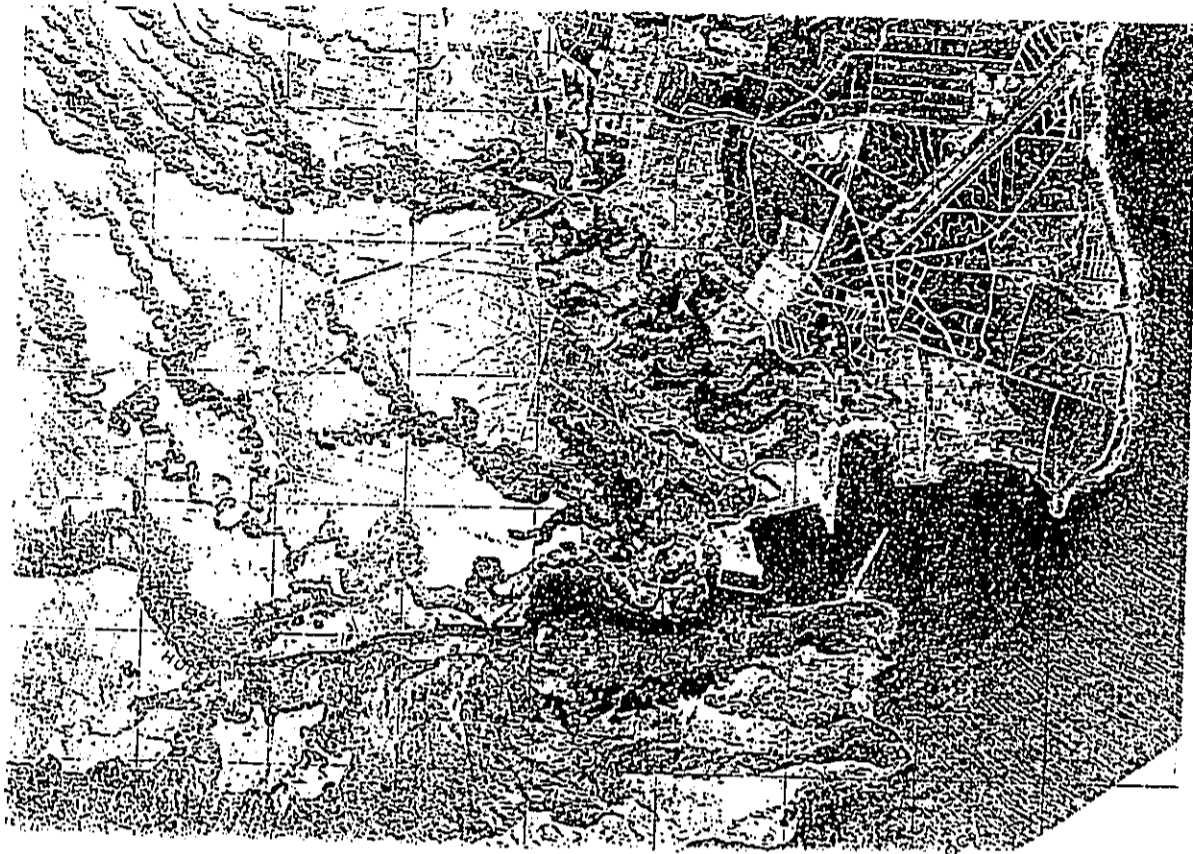


Figure 15 1977-78 U.S.G.S. orthophotoquad map showing eastern portion of the Kaua'i Belt Road-present Kaunualii Highway corridor project area

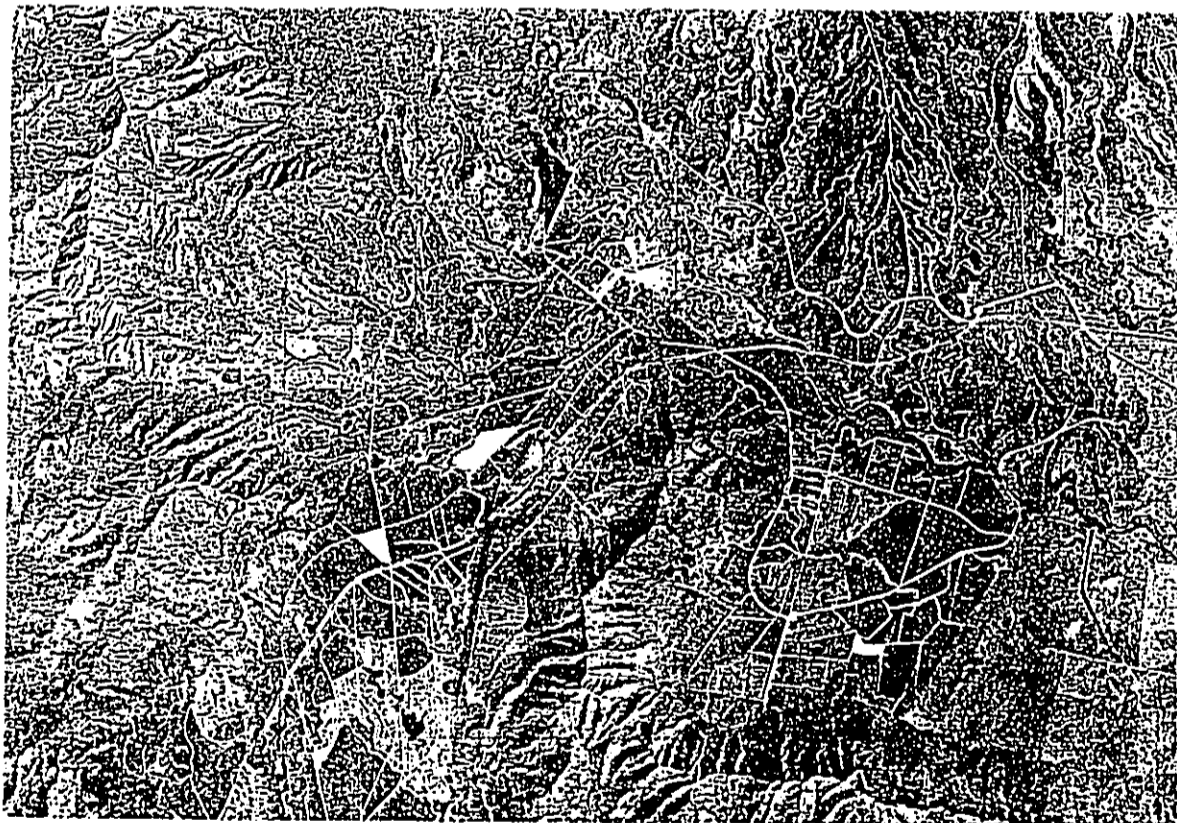


Figure 14 1977-78 U.S.G.S. orthophotoquad map showing western portion of the Kaua'i Belt Road-present Kaunualii Highway corridor project area

E. Annotated List of Place Names

An analysis of place names can offer insight into traditional life-ways. Sometimes, land use practices can often be gleaned from a study of place names in the vicinity. Often, names reflect native flora and fauna that once populated the landscape, such as Nāwiliwili, named for its huge grove of *wiliwili* trees. The following list of place names of the adjacent and surrounding areas of the Kaunualāi Highway corridor is an attempt to do such an analysis through study of the place names and their relationship to the surrounding environment.

The place names mentioned below are a testament to the rich and colorful folk-lore and mythology of the Hawaiian people. The majority of the names relate to a particular person or an event in time and act as cultural markers for these events. In Hawaiian culture, speech or the spoken word was of utmost importance. Thus, the saying at the end of a traditional prayer, "*Ua lēle ka pūlē*", meaning "*The prayer has flown*" — the words have been spoken; they have been given wings and have flown off (*lēle*), putting energy into motion. Once gone, they cannot be called back. A place name carries with it the story of that place, as well as any cultural values the story might impart (i.e., *Weoweopūlau*, a reminder to be hospitable to strangers). Place names are also a testament to how observant Hawaiians were of their world around them, of life cycles and relationships (i.e., when the *lau* flower is in bloom, the *hā'ūke'ūke* are *mōmona* or ready to be eaten). An attempt was made to relate to all things, both animate and inanimate. The more a place name is used, the more likely that its story will be retold and remembered. So, it is important to continue to use the old and traditional place names given so long ago, but it is even more important to tell their stories — for in the stories are imbedded the protocols and values that shaped and moulded Hawaiian culture and which provide invaluable insight into the not-so-distant past.

Hā'ikū: Land section, Līhu'e district. *Lit.*, speak abruptly or sharp break (Pukui, *et al.*, 1986:34). A more recent version of the meaning of Hā'ikū is told by Frederick R. Wichman. In this version, Hā'ikū means "pushed through" and relates to the story of Pele being raped by Kamapua'a and of their stormy relationship (1998:51).

Halenānāhau: Stream and reservoir, Līhu'e district. *Lit.*, charcoal house.

Hanamā'ulu: the birthplace and home of Kawaio and "an important part of the Līhu'e section" (Elbert 1982:32, *fn*; 112). *Lit.*, tired (as from walking) bay (Pukui, *et al.*, 1986:41). So named because it was off the beaten path and main trail. Thus, a traveler had to go out of his way and walk extra miles to get there, arriving with sore feet and little or nothing to eat at the end of the journey. An *'āelo no'eau* is a reminder of this: *No Hanamā'ulu ka ipu pūehū. From Hanamā'ulu, comes the empty gourd* (Judd 1988:51). Also a reference to stinginess. Once, some travelers heard the sound of poi pounders in the distance. Expecting to have fresh poi at the end of their journey, they were disappointed to find the villagers apologizing for not having any food for them. That night, the visitors went to bed hungry. Thus, the reputation that Hanamā'ulu people are stingy (Wichman 1998:60-61).

Hā'upu: peak (2,297 ft.) and ridge, Līhu'e district, probably named for a demigod and giant. Also called "Hoary Head" (Pukui, *et al.*, 1986:42). Hā'ika offered a chant in honor of Hā'upu Ridge (Emerson 1993:107) "A famous hill on Kaua'i, visible from O'ahu. When it was capped with a cloud, Hawaiians said, "*Ua kau mai ka pua'a i Hā'upu; e ua ana.*" If this occurred during the rainy season, it was a sign that it would soon clear (Emerson 1993:107, *fn*). *Lit.*, recollection (Pukui, *et al.*, 1986:42).

There are several stories related to Hā'upu Ridge. One tells of a giant by the same name who over reacted violently to sounds. The ruling chief, at that time, sent Hā'upu to the top of the mountain to watch for invading war fleets approaching by sea. One night, Hā'upu was awakened by voices and, in the distance, he could see lights approaching from the direction of O'ahu. Thinking it was an invasion, Hā'upu threw some huge boulders in the direction of O'ahu. The lights and the voices died out. A few days later, it was reported that the chief of Wai'anae, had held a fishing festival at night. The chief, along with many of his people, had been killed by huge rocks falling from the sky. A legendary stone called Pōhaku o Kaua'i is said to be at Ka'ena Point (Wichman 1998:55-56).

On the Hā'upu side, there is a profile of a woman holding her finger to her lips as in a warning. This is said to be Hinaiuka's profile, which warns all visitors that "Kaua'i's beauties are beyond compare." The profile is a reminder of a beauty contest between Pele'ula of O'ahu and Hinaiuka of Kaua'i. The prize was Kāhili, a handsome young chief (Wichman 1998:56).

Ho'inakāunalehua: Stream, Līhu'e district. *Lit.*, return [of] four *lehua* blossoms (Pukui, *et al.*, 1986:47).

Hulā'ia: older name for Hulē'ia Stream. *Lit.*, pushed through (Kamapua'a ravished Pele here) (Pukui, *et al.*, 1986:53).

Ka'ahu'ula: [Ka'ahu'ū'ula on the 1912 USGS Topographic map of Kaua'i] a ridge that comes down to the Puna plains from Kāhili Mountain and an odd reference to the "red parrotfish" (Wichman 1998:39). It would make more logic for this to be a reference to a "red feather cloak" due to its location inland where Hawaiian birds might have been caught for their prized feathers. Perhaps, we will never know the story behind this name.

Kāhili: land division and peak (3,016 ft.), Waimea District. *Lit.*, feather standard (Pukui, *et al.*, 1986:65-65).

Kahonua: land section near the border between Kōhala and Līhu'e districts. In the story of the battle between Kamapua'a and Makali'i, Kamapua'a kills Ahuli here at Kahonua (Elbert 1982:232). *Lit.*, coming up [of] the companion (Pukui, *et al.*, 1986:65). Also said to be the boundary between Kona and Puna districts (Boundary Commission, Kaua'i, Vol. 1: Hawai'i State Archives).

Kaliopaki: the story related to the name has been lost. *Lit.*, double-yolked egg (Wichman 1998:59).

Kahalaia: Mountain, Kōloa district. Pronunciation and meaning uncertain (Pukui, *et al.*, 1986:79).

Kamo'ōloa: Birthplace of Paiaha and the site of many battles fought between the warring Kona and Puna districts (Wichman 1998:39). *Lit.*, a long, narrow strip of land.

Kapaia: Village, stream and reservoir, Lihū'e district. *Lit.*, the walls or bowers (Pukui, *et al.*, 1986:87).

Kipū: land division, Lihū'e district. Mention is made of Kamapua'a landing at Kipū in the story of his battle with Makali'i (Elbert 1982:226). *Lit.*, hold back (Pukui, *et al.*, 1986:113).

Kōloa: not to be confused with the Hawaiian "Kōloa" duck. 'Aikanaka built a sacrificial *aeiau* at Maulili (*Lit.*, constant jealousy; Wichman 1998:40) in Kōloa. Taken for dead, Kawelo was brought to Maulili to be sacrificed. Instead, he rose up and killed 'Aikanaka (Elbert 1982:108). In another account, the district was named for a steep rock called *Pai'o* (Pukui, *et al.*, 1986:116). Also the old name for Waitā Reservoir at Grove Farm (Pukui, *et al.*, 1986:228). It's traditional meaning is lost and Pukui, *et al.*, does not attempt to offer a translation.

Wichman (1998:43) suggests two other possible meanings: 1) a reference to the native Kōloa (without any diacritical markings) duck; 2) a reference to long or tall sugarcane (*Kō*). Wichman notes: "Kōloa is the preferred pronunciation today as it reflects the area's history of sugar manufacturing, which began in 1835 and ended in 1996. Yet the correct name may be Kōloa, for a now extinct three-foot-high flightless bird whose skeleton has been found in this area (1998:178).

La'auhaha'ihā'i: Land area, Kōloa district. *Lit.*, broken yam vine.

Lihū'e: formerly included the land divisions of Kawaihau and Lihū'e. "Lihū'e, in a local sense, and from which the name of the district was derived, meant only that little portion of land upon which the present village, as consisting of bank, post office and store, now stands." (Rice in Kaunā'i Papers 1991:46) *Lit.*, cold chill (Pukui, *et al.*, 1986:132). According to Wichman (1998:59), Governor Kaikio'ewa, the first governor of Kaunā'i, built a home and named it Lihū'e after his home town on O'ahu. The old name for Lihū'e was Kala'iamea (calm reddish brown place).

Makaleha: stream and mountains, Kawaihau district, Kaunā'i. *Lit.*, eyes looking about as in wonder and admiration.

Nāwiliwili: Just like the name implies, this area was once famous for its grove of *wiliwili* trees. Nāwiliwili paka 'āwiliwili trees upon which raindrops fall, twisting the leaves so the rain touches both sides (*wiliwili* trees upon which raindrops fall, twisting the leaves so the rain touches both sides) is said to be the full name of this land section (Wichman 1998:58-59). *Lit.*, the *wiliwili* trees (Pukui, *et al.*, 1986:164).

Niumalu: land division. *Lit.*, shade (of coconut trees) (Pukui, *et al.*, 1986:166). A reference to the story of Kapūnohu who threw his spear toward Anahōhō. As it flew over Niumalu, it shaded the coconut trees (Wichman 1998:57).

Puhī: village and stream, Lihū'e district. Where Kaholiakāne (the sprouting (made) by Kāne), a shark god, lived in a cave. *Lit.*, blow (Pukui, *et al.*, 1986:192).

Pū'ukolo: hill in south central Kaunā'i, said to be the legendary home of Pāka'a and Kūapāka'a. *Lit.*, crawl or pull (Pukui, *et al.*, 1986:116).

Pū'uomoe: simply called "Omoe" on most modern historic maps. It's traditional Hawaiian meaning and related story seems to have been lost. It could be translated as "hill of sleep" or "hill of prostration".

Waitā: A historic Hawaiian name for the reservoir at Grove Farm, which was formerly called Kōloa. Pukui, *et al.*, conjectures a possible meaning of *wai* (for water) and *tā* (Japanese for rice paddy) (1986:228).

Weoweopillau: stream on the plains of Kamo'ōloa. It relates to a story of an upland farmer who went fishing for 'āweoweo down at the coast. On his way home, he passed an old woman who asked for a few fish. The farmer refused her request. As the farmer continued on his way, his load of fish got heavier and heavier. When he reached the stream, he put the fish down and went for a refreshing swim. Upon coming out of the stream, he smelled that his fish were rotten. He then realized that the "old woman" was Pele who had punished him for his stinginess (Wichman 1998:40).

F. Botanical Survey

A botanical survey was conducted by Winona P. Char (Char and Associates) in relation to three previously identified wetland sites along Kaunualii Highway. No other wetland sites were identified. Char and Associates identified a total of 21 plant species among the three wetland areas mentioned above. Of the 21 plant species identified, five are native and two are questionably native; one is a Polynesian introduction and one plant is questionably a Polynesian introduction. Twelve plant species are alien introductions. A botanical analysis may offer insight into patterns of native gathering practices. The 9 plants, along with their known uses, are discussed below.

Hawaiian Name: *neke* (from *nakeke*, to rustle); could refer to the sound of the fronds rubbing together (Valier 1995:58).

Other Names: Swamp cyclosorus

Scientific Name: *Cyclosorus interruptus* ("interrupted, circular spore clusters")

Ethnobotanical Uses: none known

Biogeographical status: indigenous

Hawaiian Name: *hau*

Scientific Name: *Hibiscus tiliaceus* L.

Ethnobotanical Uses: The bast fibers of this species were formerly used for cordage and the light wood for the spars of the outriggers of canoes, and occasionally for the outrigger float, as well as floats for fishnets. Fires were started by friction from rubbing a pointed stick of a harder wood such as *Perrottetia* against a grooved piece of the much softer *hau*. The flowers and bark were also used medicinally (Wagner, Herbert & Sohmer 1990:888).

Biogeographical status: indigenous?

Proverb: *Ka makani ho'ihai i lau hau o Olowalu*. The hau-leaf tearing wind of Olowalu (A gusty wind) (Pukui 1983:157; O.N. #1457).

Hawaiian Name: *kānole*; and further classified by *lau li'i* (small leaf) or *lau nui* (big leaf). Also called *alohalua*.

Other Names: *primrose willow*

Scientific Name: *Ludwigia octovalvis* (Jacq.) Raven

Ethnobotanical Uses: medicinal, tea, dyes (black or yellow); also used in *hana aloha* sorcery.

Biogeographical status: Polynesian?

Hawaiian Name: *kalo*

Other Names: *taro*

Scientific Name: *Colocasia esculenta* (L.) Schott

Ethnobotanical Uses: major food source; certain types of *kalo* were considered good to eat for a *lā'au lapa'au* student in training. *Kalo* was one of the foods that were "special" to Lono, the patron deity of *lā'au lapa'au* and it was used in the ceremony which marked a student passing from one level of training to the next higher level (Gutmanis 1989:15-16).

Biogeographical status: Polynesian

Proverb: Pukui lists 33 *'ā'alo na'enu* for *kalo*, signifying its importance in Hawaiian culture and as the staff of life.

Hawaiian Name: *niki*; also called *'aha nui*

Other Names: *saw-grass*; Pele grass, volcano grass

Scientific Name: *Cladium jamaicense* Crantz

Ethnobotanical Uses: the leaves were used for tying (like sennit, thus the nickname *'aha nui*)

Biogeographical status: Indigenous

Hawaiian Name: *makaloa*

Scientific Name: *Cyperus laevigatus* L.

Ethnobotanical Uses: woven into soft, fine mats for the *ali'i*

Biogeographical status: Indigenous

Proverb: *Moena pūwehe o Ni'ihau* (*Patterned mat of Ni'ihau*). A poetic reference to Ni'ihau which was famous for beautifully patterned makaloa mats (Pukui 1983:236; O.N. #2176).

Hawaiian Name: not known

Scientific Name: *Pycreus polystachyos* - (Retth.) P. Berau.

Ethnobotanical Uses: not known

Biogeographical status: Indigenous

Hawaiian Name: *'aka'akai*

Other Names: great bulrush

Scientific Name: *Schoenoplectus lacustris* (L.) Palla

Ethnobotanical Uses: the large stems were used like grass or *ti* leaves for thatching, or braided into mats for the under layers of beds and for temporary purposes. It is not a durable material (Neal 1965:89).

Biogeographical status: Indigenous

Hawaiian Name: *mau'u laiki*

Other Names: *ricegrass*

Scientific Name: *Paspalum scobiculatum* L.

Ethnobotanical Uses: used like *pili* to thatch houses (Neal 1965:73).

Biogeographical status: Indigenous?

On June 23rd, a field inspection of the proposed Kaunualii Highway corridor was conducted by two archaeologists walking on each side of the corridor, paying special attention to roadside plants. Species of native plants commonly growing alongside highways were identified, such as *laukahi*, *uhaloa*, *'āima*, *laua'e*, *kupukupu* and *utūle*. These plants are commonly found at similar elevations and environments throughout the islands and none of the above plants are rare or endangered. Other species seen alongside the roadway were *mai'a*, *kukui*, *niiu*, *hala* and mango, though no large groves or concentrations of these trees were noted.

III. RESULTS OF THE CULTURAL ASSESSMENT

The following areas relating to cultural practices were considered as part of this cultural assessment: trails, native hunting and fishing, native gathering, *heiau* and religious sites, other archaeological sites, burials and identifying knowledgeable *kāpuna* and *kama'āna* residents to interview. A discussion of each topic follows below.

A. Trails

Research of historic 19th century maps gave no indication of any specific routes or traditional Hawaiian trails that crossed over or went through the Kaumuali'i Highway corridor. However, it is probable that part of the Highway, especially near the Gap, does follow the old alignment. This area, which served to connect the Kona district with the Puna district, was documented in native testimonies to the Commission of Boundaries and in early 19th century accounts.

B. Native Hunting and fishing

Kaua'i is home to the black-tailed deer (Waimea Canyon), the wild pig and goat. Kaua'i is also a habitat for the honey bee. During the field inspection, a pig trail was observed in Hale'i'a Gulch. None of the above mammals were seen on the site visit. During the course of this study, no native hunting or fishing practices were identified within the immediate or adjacent areas of the highway corridor.

C. Native Gathering

The Highway corridor and adjacent areas are home to predominantly introduced and alien plant species. One individual, Cheryl Lovell-Obatake, indicated that when she was growing up, she had heard from a classmate that the valley way back behind Koamalu was a resource for gathering medicinal plants for healing. Her classmate's grandmother was a *kahuna* who practiced the healing arts. No other information regarding the valley name, exact location or this valley as an area of cultural practice was obtained. Ms. Lovell-Obatake did not know of anyone who performed cultural practices within the immediate Highway corridor.

No information related to current and ongoing cultural practices for gathering, or for religious or cultural purposes was identified.

D. Heiau and Shrine Sites

Wendell Bennett (1931) conducted the first comprehensive archaeological survey of Kaua'i in the early 1930's. Bennett's survey report identifies no *heiau* or religious sites within or in the vicinity of the present Kaumuali'i Highway corridor project area. "Talk-story" with people in the community did not offer any new insights regarding the likelihood of possible *heiau*, shrine or religious sites in and about the proposed project area.

E. Other Archaeological Sites

A review of reports presently on file in the library of the State Historic Preservation Division (SHPD) indicated that no archaeological surveys have been conducted within any portion of the present project area during the decades following Bennett's survey.

On March 24 and May 13, 1998, Cultural Surveys Hawaii conducted a reconnaissance survey of the Kaumuali'i Highway project area (Hammatt & Chiogioji 1998). No archaeological sites or features were encountered during the surface survey or areas adjacent to the highway corridor. For a more detailed description of the survey, the reader is referred to the above report.

F. Burials

Two people, Loren Mano'i and Wilma Holi, mentioned the possibility of burials (other than the Lihue Public Cemetery) near the area of the Mill Bridge. However, neither were able to provide detailed information regarding any burials or where they might be actually located. It was unsure, how far out of the corridor any possible burials might be located. Both *kama'āna* residents said this is something they had heard about over the years, but could not give further details regarding burials in the area. Wilma Holi and her family have land about a quarter mile from the present Kaumuali'i Highway in a valley they call *Moa'ula*. Their family burials are retained within the confines of their *āina*.

SHPD archaeologist for Kaua'i, Nancy McMahon, confirmed that she did not have any knowledge of any burials along the corridor or of any burials in adjacent areas to the present. She stated that at the last Kaua'i Island Burial Council meeting, Wilma Holi was present and indicated the possibility of burials near the Mill Bridge. It was the first time, Ms. McMahon had heard of this (personal communication:6/30/00).

Consultation with community residents and Hawaiian organizations did not reveal any information regarding burials near or in any part of the project area.

G. Identification of Knowledgeable *Kāpuna* and *Kama'āna* Residents

Much of the focus of this study was on the attempt to identify knowledgeable *kāpuna* and *kama'āna* residents who might be able to provide cultural information about traditional practices within the project area. Approximately 40 individuals and Hawaiian groups were contacted. As a result of this inquiry, a knowledgeable informant who could be interviewed did not surface. The results of this part of the study are presented in the table below.

Key:

Affiliation
 CSH - Cultural Surveys
 HCV - Hawaiian Civic Club
 KHPRC - Kaula's Historic Preservation Review Committee
 KHBC - Kaula's Island Burial Council
 OHA - Office of Hawaiian Affairs
 SHPD - State Historic Preservation Division

Y = Yes
 N = No
 S = Some knowledge
 A = Attempted (at least 3 attempts were made to contact individual, with no response)

TABLE 1: Results of Community Consultations

Name	Affiliation	Contacted (Y/N)	Personal Knowledge (Y/N/S)	Referrals	Comments
Akama, Kaijoe	CSH & Kaula's resident	Y	N	None	
Albao, Harriet	Kaula's resident	Y	N	Catherine Lo	Referred by Andy Bushnell
Aloot, Sebastian	OHA - Oahu	Y	N	Bonita Panui	
Beniamina, Ilei	Cultural Resource Specialist, Hawaiian Language Teacher	Y	N	None	Referred by Ka'umoana Carter
Bushnell, Andy	Kaula's resident	Y	N	Harriet Albao, Hobie Goodale	Referred by Tina Bushnell
Bushnell, Tina	CSH & Kaula's resident	Y	N	Andy (father)	
Carter, Ka'umoana	Haw'o language teacher - KCC	Y	N	Dennis Chun, Ilei Beniamina	Oahu resident & former KCC lecturer - Haw'o language
Chun, Dennis	KCC, Hokule'a crew, Kaula resident	Y	N	None	Referred by Ka'umoana Carter

Flores, Koloni	former member, KHPRC & Kaula's resident	Y	N	None	Referred by Collin Kippin (OHA). Kalloni was asked to do project, but declined because he didn't have any resources for the project area.
Goodale, Hobie (Holbrook)	Kaula's resident & grandson to Charlie Rice	A	-	-	Referred by Andy Bushnell
Grove Farm Museum Bob Schleck, Director	Grove Farm	Y	N	None	
Hammatt, Hal	CSH	Y	N	La France Kapaka	
Hohi, Wilma	Nawiliwili Bay Watershed Council	Y	S	La France Kapaka	Her family has land at Moa'ula (near Koamalu).
Ida, Gerald	CSH & Kaula's resident	Y	N	None	
Ikeas, Glenn	Park Engineering	Y	N	Jason Yasawa	
KHPRC Members	KHPRC	Y	N	None	
Kahn, Leimomi	Honolulu Civic Club, HCV	Y	N	Presidents of all Hawaiian Civic Clubs	She forwarded an e-mail regarding project to all club presidents. No response received.
Ka'ilikea, Sarah	Kaula's resident	Y	N	None	Kipuna - in her 90's
Kamai, Grace	KHC Kawaihau Reg. Rep. & Kaula's resident	A	N	N	
Kamai, Misy	CSH & Kaula's resident	Y	N	None	
Kaohi, Lionel	Kaunualii Civic Club, President; Kaula's Council, President	Y	N	Saber McClacken	Referred by Leimomi Kahn. He was unable to provide a phone number or a means to contact Ma. McClacken.

Kapuka, La France	Incumbent KIBC member	Y	N	Wilma Holi, Gussie Schumacher	
Keala, Jalna	OHA-O'ahu	Y	N	Sarah Ka'ilikea; Alo Like Kipuna program	
Kepeliela, Kana'i	SHPD-O'ahu	Y	N	Nancy McMahon	
Kikuchi, Pila	KHPRC, KCC, Anthonio's teacher	Y	N	Lihue Senior Citizens Ctr.	All the old-timers he knew are gone.
Kinimaka Alquiza, Kapu	Kumu hula-Hanalei	A			Out of town until 7/4/00. Halau is in Hanalei.
Kippin, Collin	OHA (O'ahu)	Y	N	Jalna Keala/Sarah Ka'ilikea	
Lo, Catherine	Kaua'i Resident	Y	N	None	Retired librarian & historian
Lovell-Obatake, Cheryl	KIBC, Chair & Kaua'i resident	Y	S	Wilma Holi	
McClacken, Saber (Ka'opua)	Honolulu Civic Club (Kaua'i resident)	A			Lives in Lihue. (No listing in phone book - didn't know how to get in touch with her. Referred by Lionel Kaohi.)
McMahon, Nancy	SHPD-Kaua'i	Y	N	None	
Mamo'i, Loren	Kaua'i Botanical Garden	Y	N	Wilma Holi's Uncle - Ivan	
Panui, Boots	OHA-Kaua'i	N/A			On sick leave & retiring @ end of June. Won't be back in office.
Pelekai, Pikake	OHA-O'ahu	N/A			On indefinite sick leave.
Tremboth, Healani	Alo Like Kipuna Program	Y	N	None	referred by Jalna Keala
Santos, Kaliko	KIBC, Lihue Reg. Rep.	Y	N	Sarah Ka'ilikea	

Schumacher, Gussie	Kaua'i resident	Y	N	None	Old-time kama'aina resident of German Hill area
Sumner, Ka'imi	KCC	Y	N	Loren Mamo'i	Teaches Hawaiian language @ KCC
Tsuchiya, Rick	KHPRC & Kaua'i resident	Y	N	None	
Wann, Presley	KIBC Lihue Reg. Rep.	A			
Yasawa, Jason	Parsons, Brinkerhoff Quade & Douglas	Y	N	None	

IV. SUMMARY AND RECOMMENDATIONS

A. Summary

The Kaunualii Highway corridor runs through a central plains area tucked between two mountain ranges, Hāupu on the south and Makaleha on the north. Background research suggests that the specific route of the highway was established to connect western commercial and social centers at Kōloa and Līhū'e in the 19th century. It is likely that at least a portion of the present highway follows the traditional trail alignment used prior to contact.

The majority of the affected lands surrounding the corridor were impacted since the early 19th century due to agriculture and the sugar industry. Much of the land, at one time or another, was planted in cane. The land is dominated by introduced and alien plant species.

Prior archaeological studies (Bennett in the 1930's and Hammiatt & Chiogioji in 1998) did not identify any prehistoric archaeological sites in the immediate or adjacent areas to the highway corridor. Decades of agricultural, commercial and construction activities have removed any evidences of surface sites.

Background research did not identify specific areas of traditional land use nor any documented records of traditional practices being conducted in the area. A good faith attempt was made to contact as many Kāua'i residents and Hawaiian organizations as possible in order to identify cultural practices and practitioners within the proposed project area and bordering lands; and, to identify knowledgeable persons who could be interviewed regarding traditional cultural practices. Approximately 40 individuals and organizations were contacted. These efforts did not identify any cultural practices or practitioners.

B. Recommendations

No traditional Hawaiian customs and practices were identified in relation to the widening of the Kaunualii Highway corridor project. The result of this assessment is that the corridor will not have an impact on traditional Hawaiian cultural practices or practitioners.

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APPENDIX K

List of Preparers

Appendix K LIST OF PREPARERS

Below is a listing of persons who were primarily responsible for preparing the Draft Environmental Assessment, their titles, years of experience and educational background.

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AUG 23 2000

FILE COPY

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*** IMPROVEMENTS TO
KAUMUALII HIGHWAY *
FROM LIHUE TO WEST OF MALUHIA ROAD**

KAUAI, HAWAII

**FINAL ENVIRONMENTAL ASSESSMENT/
FINDING OF NO SIGNIFICANT IMPACT**

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
AND
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

AUGUST 2000

FEDERAL HIGHWAY ADMINISTRATION
FINDING OF NO SIGNIFICANT IMPACT

For
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii

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

8/1/00

Date

Abraham Wong

For FHWA

**IMPROVEMENTS TO KAUMUALII HIGHWAY
LIHUE TO WEST OF MALUHIA ROAD
County of Kauai, Hawaii**


**Final
Environmental Assessment/
Finding of No Significant Impact**

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

U.S. Department of Transportation
Federal Highway Administration
and
State of Hawaii Department of Transportation
Highways Division

AUG 2 2000

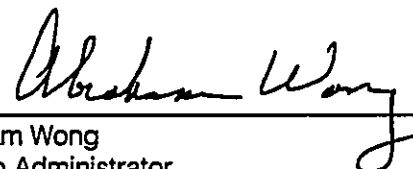
Date of Approval



Kazu Hayashida
Director of Transportation
State of Hawaii Department of Transportation

8/1/00

Date of Approval



Abraham Wong
Division Administrator
Federal Highway Administration

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

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This Final Environmental Assessment (EA) / Finding of No Significant Impact (FONSI) documents impact studies of proposed improvements to Kaumualii Highway from Lihue to West of Maluhia Road on the island of Kauai, Hawaii. This project will increase the vehicle capacity of Kaumualii Highway between Kuhio Highway in Lihue and Maluhia Road. Within these limits, Kaumualii Highway will be converted from a two-lane undivided roadway to a four-lane divided roadway. The west end of the project is located west of Maluhia Road to allow for a transitional section between the existing two-lane configuration and the future four-lane configuration. The project will require moving a section of Hoomana Road to maintain access to a small neighborhood called German Hill. The project is not expected to cause substantial environmental impacts because the widening will occur alternately on the north or south sides of the existing highway to avoid certain resources. Only one residence will be relocated due to the re-alignment of Hoomana Road. The project will fill approximately a quarter acre of wetlands, but these wetlands will be replaced. Also, for safety reasons, the project will replace the railings of the historic Lihue Mill Bridge.

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 Environmental Assessment are presented in metric units with the English equivalents in parentheses.

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

SUMMARY

S.1 INTRODUCTION

S.1.1 Applicant and Project Summary

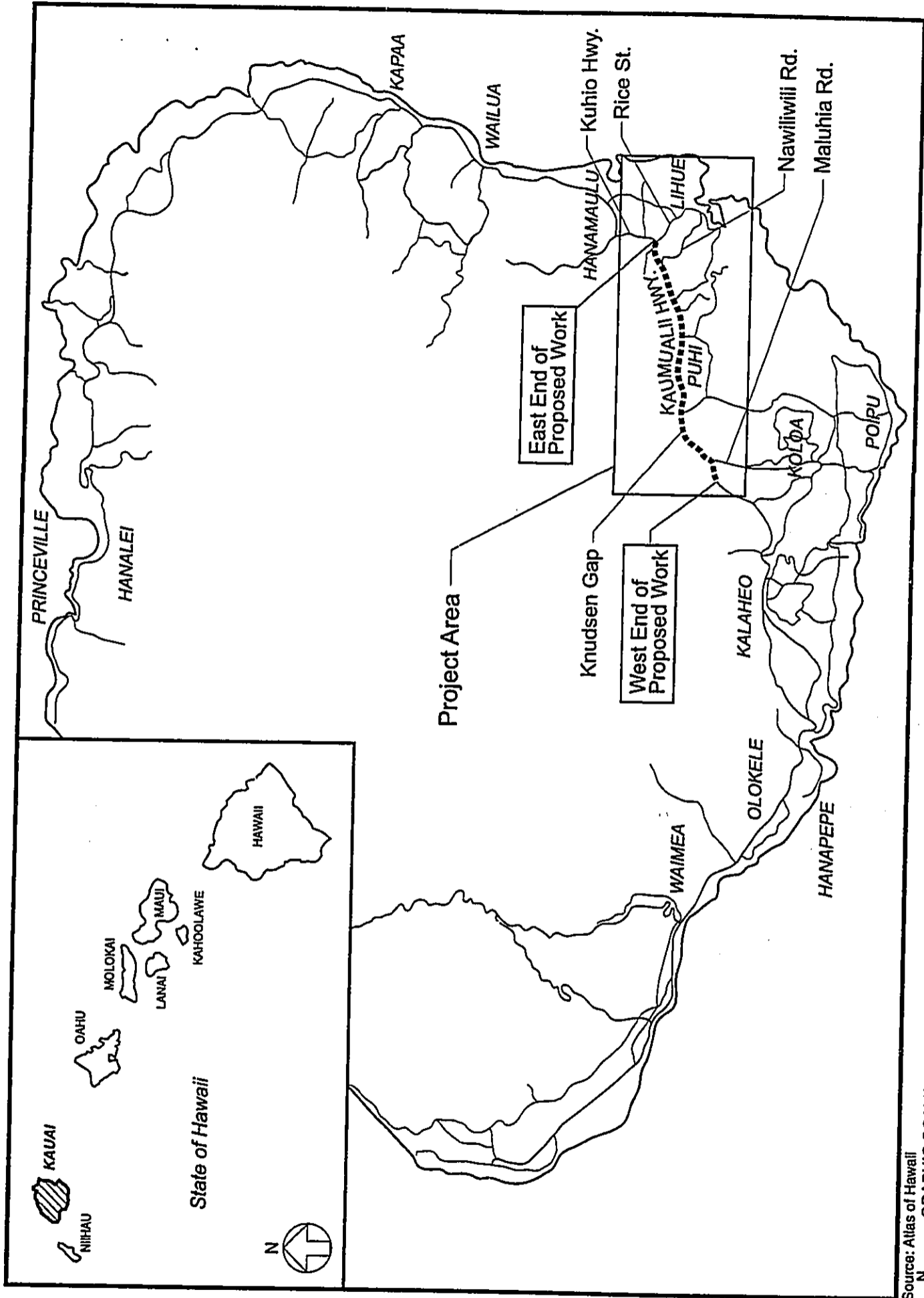
The Highways Division of the State of Hawaii Department of Transportation (SDOT) and the Federal Highway Administration (FHWA) are issuing this Final Environmental Assessment (EA) / Finding of No Significant Impact (FONSI) for this project, officially named "Improvements to Kaumualii Highway, Lihue to West of Maluhia Road." The project is located on the island of Kauai, County of Kauai, Hawaii (see Figure S-1), and will increase the vehicle capacity of Kaumualii Highway between Lihue and Maluhia Road. The project is included in the current *Statewide Transportation Improvement Program (STIP)*, which is the capital improvement program for near-term transportation projects in the State.

The FHWA and SDOT are the approving agencies at the federal and State levels, respectively, under the provisions of the applicable federal and State environmental review regulations.

S.1.2 Planning Context

Widening Kaumualii Highway between Lihue and Maluhia Road was recommended in the Kauai Long-Range Land Transportation Plan (May 1997). This improvement project is one element of a set of measures to meet transportation demands on Kauai through 2020. If approved, State and federal funding will be used to design and construct this project. Therefore, this project must undergo environmental review in accordance with Hawaii Revised Statutes (HRS) Chapter 343 (the Hawaii EIS Law) and the National Environmental Policy Act (NEPA).

An early assessment by the SDOT indicated that the project would not cause a "significant" impact to the environment. Therefore, an EA was deemed to be the appropriate environmental review document, as opposed to an environmental impact statement (EIS). Following agency and public review of the Draft EA, the SDOT and the FHWA have determined that the early assessment of no significant impact remains valid. Therefore, under HRS Chapter 343 and NEPA, both SDOT and FHWA have issued Findings of No Significant Impact (FONSI) and



Project Location
IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
 FIGURE S-1

Source: Atlas of Hawaii
 N
 GRAPHIC SCALE:
 0 2 mi 4 mi
 0 3 km 7 km

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

prepared this Final EA. This Final EA documents the analyses, reports, and reviews of agency and public comments received throughout project planning that support the FONSI determination.

S.1.3 History

The route between Koloa (at the western end of the project) and Lihue was developed in the first half of the 19th century, shortly after Western settlement on Kauai. Later, early in the 20th century, a roadway system was developed from the southwest coast of Kauai to the northeast coast. This roadway remained unpaved until federal funds became available in the 1930s. These funds assisted the construction of the "Kauai Belt Road", which included the present Kaumualii Highway. The last major project on Kaumualii Highway in 1989 was the construction of a 120 m (420 ft) long bridge over Huleia Stream to replace the old "Halfway Bridge," which was constructed in the 1930s.

S.2 PURPOSE OF AND NEED FOR THE PROJECT

Upon completion, the proposed project will satisfy the following purposes and needs:

- increase the roadway capacity between Lihue and Maluhia Road to meet both current and future travel demand;
- improve highway safety by correcting sight distance deficiencies and substantially reducing the chance of head-on collisions; and
- provide the flexibility to maintain system connectivity during a major incident (e.g., traffic accident).

S.2.1 Existing Capacity Deficiencies

Roadway performance is measured in terms of level-of-service (LOS). LOS is scored on a scale from "A" through "F", representing best to worst conditions. LOS levels of C or D are generally considered to be the lower limits of acceptability. LOS A corresponds to free-flowing traffic; LOS E and F indicate severe roadway congestion.

Traffic volumes on Kaumualii Highway east of Maluhia Road increased 26 percent from 1988 to 1994. Since no capacity improvements were made on Kaumualii Highway during that period, traffic conditions worsened considerably. Currently, travelers on Kaumualii Highway experience LOS E and F (below the acceptable range) along the project limits during peak periods, especially the section from Lihue to Puhi. Analyses of current morning and afternoon peak hour traffic conditions indicate that the town-bound section of Kaumualii Highway from Puhi to Lihue operates at LOS F in the morning. The afternoon peak hour congestion is in the out-bound direction, primarily between the traffic signals at Nawiliwili Road and Puhi.

S.2.2 Future Transportation Demand

Expected population and economic growth in the southern part of Kauai is expected to increase travel demand in the corridor between the southwest and southeast regions of the island. Since Kaumualii Highway is the only regional highway in south Kauai, the capacity of this highway, which is insufficient to accommodate current demand, will be even more overtaxed by traffic volumes projected for 2020. Unless steps are taken to increase the capacity of this roadway, the level of congestion on Kaumualii Highway will continue to worsen.

S.2.3 Highway Safety Improvements

Kaumualii Highway is a safe roadway, but there are a few sections where sight distances are less than current highway safety standards. In addition, as traffic volumes increase, the possibility of head-on collisions also increases on a two-lane undivided highway. The project will improve highway safety by increasing sight distances to current highway standards, and converting the highway to a divided roadway, which will substantially decrease the chance of head-on collisions.

S.2.4 System Connectivity Improvements

A benefit of converting Kaumualii Highway to a four-lane divided roadway is when major incidents (e.g., traffic accidents) occur that require lane closures. The use of cane haul roads as detours is becoming less reliable in areas where cane production has ceased, reducing the continued maintenance of these roads. With the project, the likelihood of a traffic incident blocking all four lanes of a divided highway will be highly unlikely. Therefore, the police and

the SDOT will have the flexibility in the future to detour traffic flow around any major incident by using the unaffected roadbed of the divided highway.

S.3 ALTERNATIVES

S.3.1 No Build Alternative

A No-Build Alternative was developed to serve as a frame of reference against which to compare the impacts of widening Kaumualii Highway. The No Build Alternative is defined as those roadway improvements that are expected to be implemented by 2020, according to the Kauai Long-Range Land Transportation Plan (May 1997), except for the proposed project. These roadway improvements include a Poipu-Nawiliwili connector road, expansion of Nuhou Road and a Lihue-Hanamaulu bypass road.

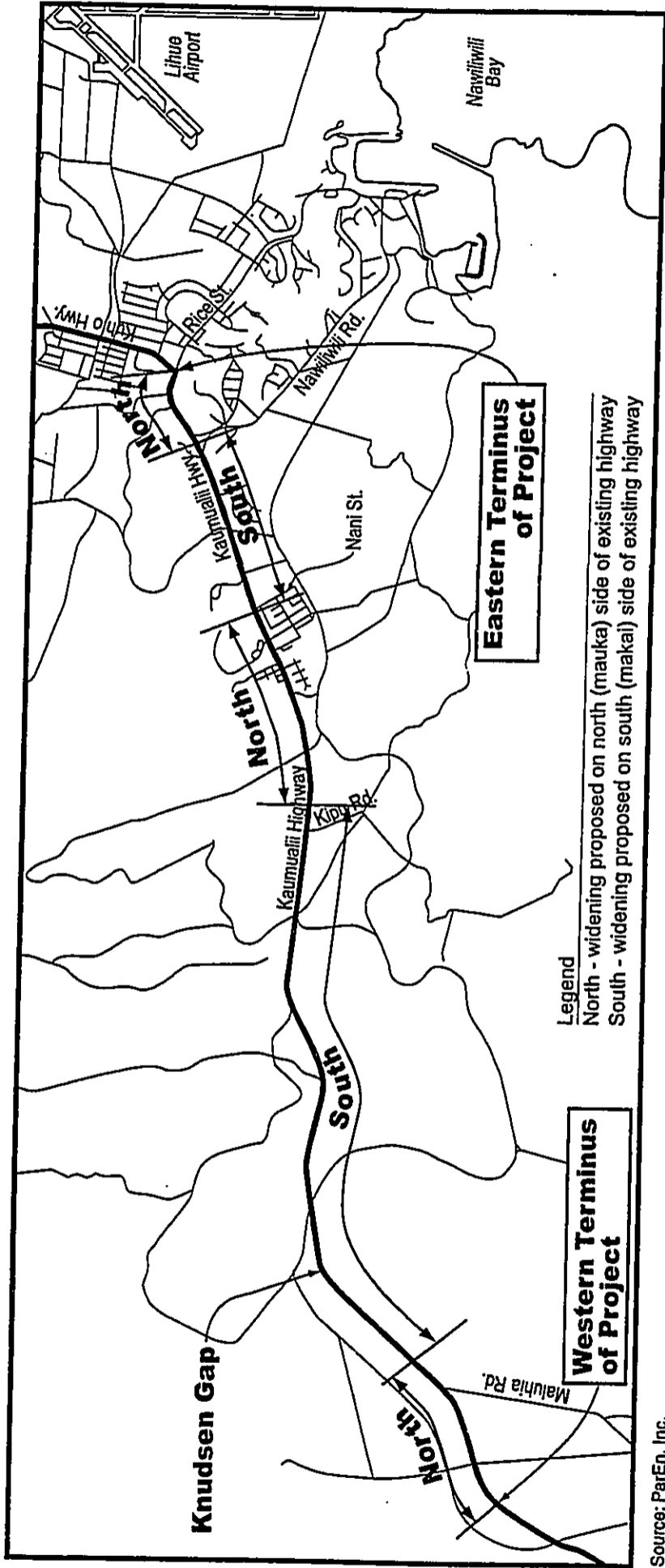
S.3.2 Build Alternative

The proposed project will extend from Kuhio Highway in Lihue to approximately 1340 m (4400 ft) west of Maluhia Road (12 km (7.5 miles)). Within these limits, Kaumualii Highway will be converted from a two-lane undivided roadway to a four-lane divided roadway. To avoid certain resources, the widening will occur alternately on the north (mauka) or south (makai) sides of the existing road (see Figure S-2).

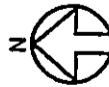
The Build Alternative will require relocating the section of Hoomana Road that intersects with Kaumualii Highway. This roadway is the only access to German Hill, a residential community of about 20 houses and a church. To maintain access to German Hill, the south (makai) section of Hoomana Road will be re-aligned, and a new intersection with Kaumualii Highway will be constructed approximately 90 m (300 feet) east of the existing intersection.

The estimated cost of the Build Alternative is estimated to be between \$75 million and \$110 million, which includes right-of-way acquisition and construction.

Due to funding constraints, the entire project will be constructed in phases. The first phase will extend approximately 5 km (3 miles) from Kuhio Highway in Lihue to Kipu Road. The limits of subsequent phases have not yet been determined. Construction of phase one is expected to



Source: ParEn, Inc.



GRAPHIC SCALE:
0 2500 ft 5000 ft

0 1 km 2 km

Direction of Proposed Widening of Build Alternative IMPROVEMENTS TO KAUMUALII HIGHWAY
Final Environmental Assessment
FIGURE S-2

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

begin in 2003, and be completed by 2005. The schedule of subsequent phases will depend on funding availability.

S.4 IMPACTS AND MITIGATION

Table S-1 summarizes the environmental and social impacts of the No Build and Build alternatives. A summary of mitigation measures for each adverse impact is also provided.

In general, the Build Alternative will not cause substantial environmental impacts because the proposed roadway improvements will occur beside the existing Kaunualii Highway. The only displacement or relocation will be one residence at the southern edge of the German Hill neighborhood. This residence will be displaced because of the re-alignment of Hoomana Road. Additional roadway right-of-way needed for the project will convert land that could be used for agriculture to transportation use. The project will also result in filling 0.1 ha (0.25 acres) of wetlands, and require the replacement of the historic Lihue Mill Bridge's steel railings. The removal of the railings will cause an "adverse effect" on the historic bridge, per Section 106 of the National Historic Preservation Act.

S.5 APPROVALS AND PERMITS

The following permits or approvals will be required prior to the construction of the highway.

- U.S. Department of the Army, Corps of Engineers (USACE) - Section 404 permit (Nationwide)
- SDOH - National Pollutant Discharge Elimination System (NPDES) permit
- SDOH - Water Quality Certification
- State of Hawaii Department of Land and Natural Resources (DLNR) – Stream Channel Alteration Permit
- State of Hawaii Department of Business, Economic Development and Tourism (DBEDT), Office of Planning - Coastal Zone Management consistency concurrence
- Department of Public Works - Grading, Grubbing, Stockpiling and Excavation permit

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

No Build Alternative	Build Alternative
LAND USE AND RELOCATIONS	
<u>Immediate or Construction Impacts.</u> None.	<u>Immediate or Construction Impacts.</u> Loss of approximately 35 ha (86 acres) of open space. Much of this land is former cane field, but presently fallow. One residence in German Hill will be displaced because of the re-alignment of Hoomana Road.
<u>Long-Term or Operational Impacts.</u> County land use plans show the area between Puhi and Lihue being developed for residential and commercial uses. The pace of such development would depend on market forces.	<u>Long-Term or Operational Impacts.</u> Similar to the No Build Alternative. Urban development west of Puhi is not expected due to the County's plans to promote diversified agriculture in this area.
<u>Mitigation.</u> None required.	<u>Mitigation.</u> The owner-occupant of the German Hill residence will be compensated and provided with relocation assistance in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act. The house may be relocated to another location in German Hill if the house is moveable, a suitable location is available, and the owner is agreeable.
FARMLAND	
<u>Immediate or Construction Impacts.</u> None.	<u>Immediate or Construction Impacts.</u> In the area west of Puhi, roadway right-of-way taken from fallow agricultural land will be converted to transportation use. Per the Farmland Protection Policy Act, the Land Evaluation and Site Assessment score corresponding to this farmland conversion is 134 points, below the 160 point threshold at which alternatives that avoid farmland impacts must be evaluated.
<u>Long-Term or Operational Impacts.</u> None.	<u>Long-Term or Operational Impacts.</u> None.
<u>Mitigation.</u> None required.	<u>Mitigation.</u> None required.
SOCIAL AND ECONOMIC	
<u>Immediate or Construction Impacts.</u> None.	<u>Immediate or Construction Impacts.</u> The project will infuse up to \$110 million of federal funds into the local economy, increasing short-term employment and the local purchase of goods and services.
<u>Long-Term or Operational Impacts.</u> None.	<u>Long-Term or Operational Impacts.</u> No neighborhood will be split, or isolated from the greater community. The relocation of one residence in German Hill will not affect social cohesion or activities in this neighborhood because the affected residence is located at the extreme southern edge of this neighborhood. Conversion of private property to public use will cause a decrease in County property tax revenue. No long-term employment impacts are anticipated. There are no minority or low-income populations that will experience disproportionately high and adverse impacts from the project in accordance with Executive Order 12898 regarding Environmental Justice.
<u>Mitigation.</u> None required.	<u>Mitigation.</u> None required.

**Table S-1
Summary of Environmental Impacts and Mitigation
(continued)**

No Build Alternative	Build Alternative
TRANSPORTATION	
<u>Immediate or Construction Impacts.</u> None.	<u>Immediate or Construction Impacts.</u> Two lanes of traffic (the same as at present) will be maintained during almost all phases of construction, minimizing traveler delays during project construction. Access to adjacent land uses will be maintained at all times, but detours may be used.
<u>Long-Term or Operational Impacts.</u> Traffic conditions on Kaunualii Highway will continue to deteriorate from the existing poor levels, which is already LOS F at certain intersections. The current level of bike and pedestrian service will remain the same. County bus service will deteriorate due to increasing congestion. The current level of highway safety will remain the same: motorists are vulnerable to head-on collisions, and sight distances are not up to current standards.	<u>Long-Term or Operational Impacts.</u> Traffic operations on Kaunualii Highway will improve from LOS F at certain intersections now and under the No-Build Alternative, to LOS B or C. Bike and pedestrian service will improve due to the provision of wider shoulders, bike lanes at intersections in urban areas, and sidewalks in urban areas. County bus service will improve because of better traffic operations on the highway. Highway safety will improve because the widened median will reduce the risk of head-on collisions, and sight distances will be corrected to current standards. However, the additional lanes will enable some motorists to exceed the speed limit, potentially increasing the risk of incidents.
<u>Mitigation.</u> None required.	<u>Mitigation.</u> A "Maintenance of Traffic Plan" will be prepared during the design phase to ensure that two lanes of traffic are available throughout construction, and that access to adjacent land uses is maintained. Maintenance of pedestrian and bicycle access will also be included.
COMMUNITY SERVICES AND FACILITIES	
<u>Immediate or Construction Impacts.</u> None.	<u>Immediate or Construction Impacts.</u> None.
<u>Long-Term or Operational Impacts.</u> None.	<u>Long-Term or Operational Impacts.</u> Access to community services and facilities, such as parks, hospitals, schools, and police, fire and ambulance services, will improve due to additional highway capacity.
<u>Mitigation.</u> None required.	<u>Mitigation.</u> None required.
AIR QUALITY	
<u>Immediate or Construction Impacts.</u> None	<u>Immediate or Construction Impacts.</u> During construction, fugitive dust emissions (particulate matter of relatively large size) will be generated from activities such as construction vehicles operating on unpaved roads, material blown from stockpiles and exposed areas, and other activities.
<u>Long-Term or Operational Impacts.</u> Under worst-case meteorological conditions, carbon monoxide (CO) concentrations near analyzed intersections are predicted to exceed the State Ambient Air Quality Standards (AAQS), but would be far below the National AAQS. The State CO AAQS is so stringent that it is exceeded at many locations in the State with even moderate traffic volumes.	<u>Long-Term or Operational Impacts.</u> CO concentrations will improve slightly in comparison to the No Build Alternative, yet three of the four intersections analyzed will exceed the State AAQS under worst-case meteorological conditions.

Table S-1
Summary of Environmental Impacts and Mitigation
(continued)

No Build Alternative	Build Alternative
AIR QUALITY (CONTINUED)	
<u>Mitigation.</u> None required.	<u>Mitigation.</u> Fugitive dust will be controlled by frequent watering, the use of wind screens when construction is near residences and commercial districts, and limiting the areas of disturbance. Open-bodied trucks will be covered when in motion if they are transporting wind-erodible materials.
NOISE	
<u>Immediate or Construction Impacts.</u> None.	<u>Immediate or Construction Impacts.</u> Construction will normally occur during daylight hours when occasional loud noises are more tolerable. Since most construction activities will be away from noise sensitive land uses, disruptions of normal activities from construction-related noise are not anticipated.
<u>Long-Term or Operational Impacts.</u> Future traffic noise levels at two residential areas in Puhi are predicted to slightly exceed existing levels. These are the only residential areas immediately adjacent to Kaumualii Highway within the project limits.	<u>Long-Term or Operational Impacts.</u> Future traffic noise levels at the two Puhi sites are predicted to be slightly lower than under the No Build Alternative. The FHWA Noise Abatement Criteria (NAC) will not be approached, nor will there be a substantial increase in noise per the SDOT Noise Analysis and Abatement Policy.
<u>Mitigation.</u> None required.	<u>Mitigation.</u> Specifications stipulated in the State Department of Health (SDOH) community noise control standards will be followed.
WATER RESOURCES	
<u>Immediate or Construction Impacts.</u> None.	<u>Immediate or Construction Impacts.</u> During construction, impacts on water resources will be associated with erosion and sedimentation that may be caused by the project's clearing and earthmoving activities, and alteration of existing drainage patterns. Although new culverts and bridges will be constructed at stream crossings, they will not change existing drainage patterns and flow capacities. Construction in the vicinity of Knudsen Gap could expose dike structures in Haupū Range. The widening will fill approximately 0.1 ha (0.25 acres) of a wetland area just west of Puhi. Although the project will span a regulatory floodplain along Nawiliwili Stream, base flood elevations at this stream will not change. The regulatory floodway does not have to be revised.
<u>Long-Term or Operational Impacts.</u> Increase in regional pollutant loading of surface waters because of increases in total regional VKT (vehicle-kilometers traveled).	<u>Long-Term or Operational Impacts.</u> Approximately 16 hectares (40 acres) of new impervious roadway surface will be created. However, because drainage structures will be designed to maintain existing surface water patterns, changes to existing hydraulic flows in the region are not anticipated. In addition, when compared to the total regional watershed, the amount of impervious surface provided by the project over a 12 km (7.5 miles) distance will not increase the risk of flooding. Numerical modeling indicates that base flood elevations at

Table S-1
Summary of Environmental Impacts and Mitigation
(continued)

No Build Alternative	Build Alternative
WATER RESOURCES (CONTINUED)	
	<u>Long-Term or Operational Impacts (Continued).</u> Nawiliwili and Huleia Streams will not change. The level of regional pollutant loading of surface waters will be similar to the No Build Alternative because total regional VKT will be the same.
<u>Mitigation.</u> None required.	<u>Mitigation.</u> Storm water runoff and erosion during project construction will be mitigated through the use of Best Management Practices (BMPs). Aquatic and wetland areas near construction activities will not be used to store machinery or equipment. In the event of a petroleum or hazardous materials release, established incident response procedures will be implemented. If groundwater is encountered at Haupu Range, it will be resealed as soon as possible. The filled wetlands will be replaced by creating new wetlands upstream from the existing wetlands. New and modified drainage structures will be designed to maintain remaining and new wetland areas.
FLORA	
<u>Immediate or Construction Impacts.</u> None.	<u>Immediate or Construction Impacts.</u> Vegetational communities will be cleared for roadway construction, but these communities do not contain threatened or endangered species. Therefore, this impact will be minimal within the context of the region's botanical resources. However, some of these floral resources may have aesthetic value, even though they are not threatened or endangered. For example, a few swamp mahogany trees along the north (mauka) side of Kaunualii Highway near Maluhia Road will be displaced. These trees are not part of the Maluhia Road tree tunnel. No trees that are part of the Maluhia Tree Tunnel will be affected.
<u>Long-Term or Operational Impacts.</u> None.	<u>Long-Term or Operational Impacts.</u> None.
<u>Mitigation.</u> None required.	<u>Mitigation.</u> Roadside landscaping will be provided, which will include native trees and shrubs wherever practicable. Details of the landscaping plan will be developed during the design phase. The displaced swamp mahogany trees will be relocated to open spots along the Maluhia Road tree tunnel, which is comprised of the same species of trees. Other trees that warrant preservation or relocation will be identified with the assistance of interested organizations.
FAUNA	
<u>Immediate or Construction Impacts.</u> None.	<u>Immediate or Construction Impacts.</u> Habitat of relatively common faunal communities along Kaunualii Highway will be displaced due to right-of-way requirements. Habitat of Federal Trust species (species listed as threatened or endangered) will not be affected by construction.

**Table S-1
Summary of Environmental Impacts and Mitigation
(continued)**

No Build Alternative	Build Alternative
FAUNA (CONTINUED)	
Long-Term or Operational Impacts. None.	Long-Term or Operational Impacts. None.
Mitigation. None required.	Mitigation. None required.
SOLID AND HAZARDOUS WASTE	
Immediate or Construction Impacts. None.	Immediate or Construction Impacts. Excavated material is expected to be free of contamination. Construction activities will generate solid and hazardous waste.
Long-Term or Operational Impacts. None.	Long-Term or Operational Impacts. None.
Mitigation. None required.	Mitigation. Solid and hazardous waste generated during construction will be properly handled and disposed of in accordance with SDOH requirements.
HISTORIC AND ARCHAEOLOGICAL RESOURCES	
Immediate or Construction Impacts. None.	Immediate or Construction Impacts. The historic Lihue Mill Bridge will be adversely affected because its deck will be widened and its steel railings will be replaced. The historic Hoomana Overpass Road bridge will be closed to vehicular traffic due to the relocation of Hoomana Road, but maintained without any alteration as a pedestrian/bike path. Therefore, the project will not cause an adverse effect to this bridge. Although a house in the German Hill historic district will be displaced, the historic district will not be adversely affected because the integrity of the district will remain intact.
Long-Term or Operational Impacts. None.	Long-Term or Operational Impacts. None.
Mitigation. None required.	Mitigation. A Memorandum of Agreement has been signed, which stipulates that photographic and written documentation of Lihue Mill Bridge will be obtained in accordance with the Historic American Building Survey standards. If an archaeological or historic site is uncovered during construction, work will stop immediately and the appropriate authorities will be contacted.
VISUAL AND AESTHETIC RESOURCES	
Immediate or Construction Impacts. None.	Immediate or Construction Impacts. None.
Long-Term or Operational Impacts. None.	Long-Term or Operational Impacts. The visual quality of the two identified viewsheds, the Haupu Range and the Maluhia Road "tree tunnel", will not be affected.
Mitigation. None required.	Mitigation. None required.

S.6 COMMENTS AND COORDINATION

Project scoping activities consisted of written correspondence with relevant government agencies, landowners, and environmental organizations. In addition, two public information meetings, the announcement and distribution of the project's Draft EA, and a formal public hearing were used to solicit comments about the project.

The following agencies, organizations and landowners were contacted early in the planning process for information to help prepare the EA and for comments on potential impacts to certain properties or resources.

- State of Hawaii Department of Land and Natural Resources (DLNR), Commission on Water Resource Management
- DBEDT, Office of Planning
- County of Kauai Planning Department
- County of Kauai Department of Public Works
- County of Kauai Department of Water
- County of Kauai Transportation Agency
- Amfac Land Company, Limited (Lihue Plantation)
- Grove Farm Properties, Inc.
- Island School
- Kauai Community College
- Kauai Electric Company
- Kauai Humane Society
- Kauai Outdoor Circle, The
- Kaunualii Investment Company & Koamalu Associates
- Kilohana/Wilcox Trust
- Knudsen Trust
- Lihue Public Cemetery Association

Since the project will require compliance with certain environmental laws and regulations, the following agencies were also consulted:

Section 7 of the Endangered Species Act

- U.S. Department of the Interior, Fish and Wildlife Service (USFWS)
- DLNR, Division of Forestry and Wildlife

Section 106 of the National Historic Preservation Act

- DLNR, State Historic Preservation Division
- Office of Hawaiian Affairs
- State of Hawaii Department of Hawaiian Home Lands
- Kauai Historic Preservation Review Commission

Section 404 of the Clean Water Act

- USACE
- U.S Environmental Protection Agency
- USFWS

Farmland Protection Policy Act

- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS)

Two public information meetings were conducted as part of the project's public involvement efforts. The first meeting was held on the evening of March 2, 1999 at the Wilcox Elementary School Cafetorium, and the second meeting was held on the evening of January 13, 2000 at the same location. Sixteen people attended the first meeting, and 53 people attended the second. Questions and comments during the first meeting were mostly about clarifying certain elements of the project, whereas questions and comments during the second meeting were primarily about access to German Hill. Many of the participants at the second meeting were German Hill residents who were informed about the re-alignment of Hoomana Road, and were invited to this meeting.

The project's Draft EA was publicly announced in the May 8, 2000 edition of the State Environmental Notice, which marked the start of a formal 30-day comment period on the Draft EA that ended on June 7, 2000. Copies of the Draft EA were distributed to federal, State and County agencies and elected officials who may have an interest in the proposed project. In addition, copies of the Draft EA were sent to affected landowners, and the Lihue Public Library.

The project's formal public hearing on the project was held on May 25, 2000 at the Wilcox Elementary School Cafetorium from 6:00 p.m. to 9:00 p.m. The hearing was conducted in an

"open house" format in which no formal presentation is made, but information about the project is provided in "science fair" types of displays, and a handout. In addition, experts were available to answer questions. The hearing display boards and handout provided information on the project's design characteristics, and traffic and environmental impacts. Since no formal presentation was made, the public could attend the hearing at any time during the hours stated above.

Forty written statements were received during the Draft EA comment period and at the public hearing. Of the 29 people who attended the public hearing, 22 provided comments either by writing their statements on a form provided at the hearing or by speaking to a court reporter stationed at the hearing. The number of commentors (written and oral) totaled 54. Among those commentors who expressed an opinion on whether the proposed project should proceed, those favoring the project outnumbered those opposing the project by a three to one ratio. Some of the more common themes expressed by the commentors include the need for landscaping and beautification along the highway consistent with the notion of Kauai being the "Garden Island"; the desire for overhead utility lines to be placed underground; concern for cyclists using the highway, and interest in creating a new, parallel two-lane roadbed substantially offset from the existing highway alignment to avoid creating a four-lane highway. HDOT responded to all written and oral comments. Some of the comments led to changes in the EA.

S.7 FINDING OF NO SIGNIFICANT IMPACT

In accordance with HRS Chapter 343 and HAR Chapter 200, the SDOT, as the approving agency, has rendered a Finding of No Significant Impact (FONSI) for the Improvements to Kaumualii Highway project based on an assessment of project impacts in relation to the Significance Criteria specified in HAR 11-200-12(b). Comments on the Draft EA from agencies and the public have been considered in the FONSI determination. A summary of the FONSI assessment is provided in Table S-2. As shown in this table, SDOT found that the project impacts (see Table S-1) fall under all of the Significance Criteria specified in HAR 11-200-12(b).

**Table S-2
Summary of Assessment of Project Impacts in
Comparison to Significance Criteria**

Criterion	Significant
Involves an irrevocable commitment to loss or destruction of any natural or cultural resource	No
Curtails the beneficial uses of the environment	No
Conflicts with the State's long-term environmental policies or goals and guidelines expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders	No
Substantially affects the economic or social welfare of the community or State	No
Substantially affects public health	No
Involves substantial secondary impacts	No
Involves substantial degradation of environmental quality	No
Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions	No
Substantially affects a rare, threatened or endangered species, or its habitat	No
Detrimentially affects air or water quality or ambient noise levels	No
Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a floodplain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters	No
Substantially affects scenic vistas and viewplanes identified in county or state plans or studies	No
Requires substantial energy consumption	No

Notes: "No" means project impact as it pertains to the criterion is considered to be not significant, and therefore, an EA is the appropriate HRS Chapter 343 review document.
"Yes" would mean project impact as it pertains to the criterion is considered to be significant, and therefore, an environmental impact statement (EIS) would be the appropriate HRS Chapter 343 review document.

Source: State of Hawaii Department of Transportation

Under NEPA, the determination of "significance" depends on an impact's "context" and "intensity", and how these qualities relate to each other. Context refers to the environment and the level or relative abundance of resources in the project area. Intensity refers to the specific impact, or how much of the resource(s) would be used or affected by the project. Based on the results of impact analyses contained in this document, and comments received on the Draft EA, FHWA has determined that the proposed project will not result in a significant impact as defined under NEPA, and has also rendered a FONSI.

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CHAPTER ONE

Purpose of and Need for Action

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CHAPTER 1 PURPOSE OF AND NEED FOR ACTION

1.1 INTRODUCTION

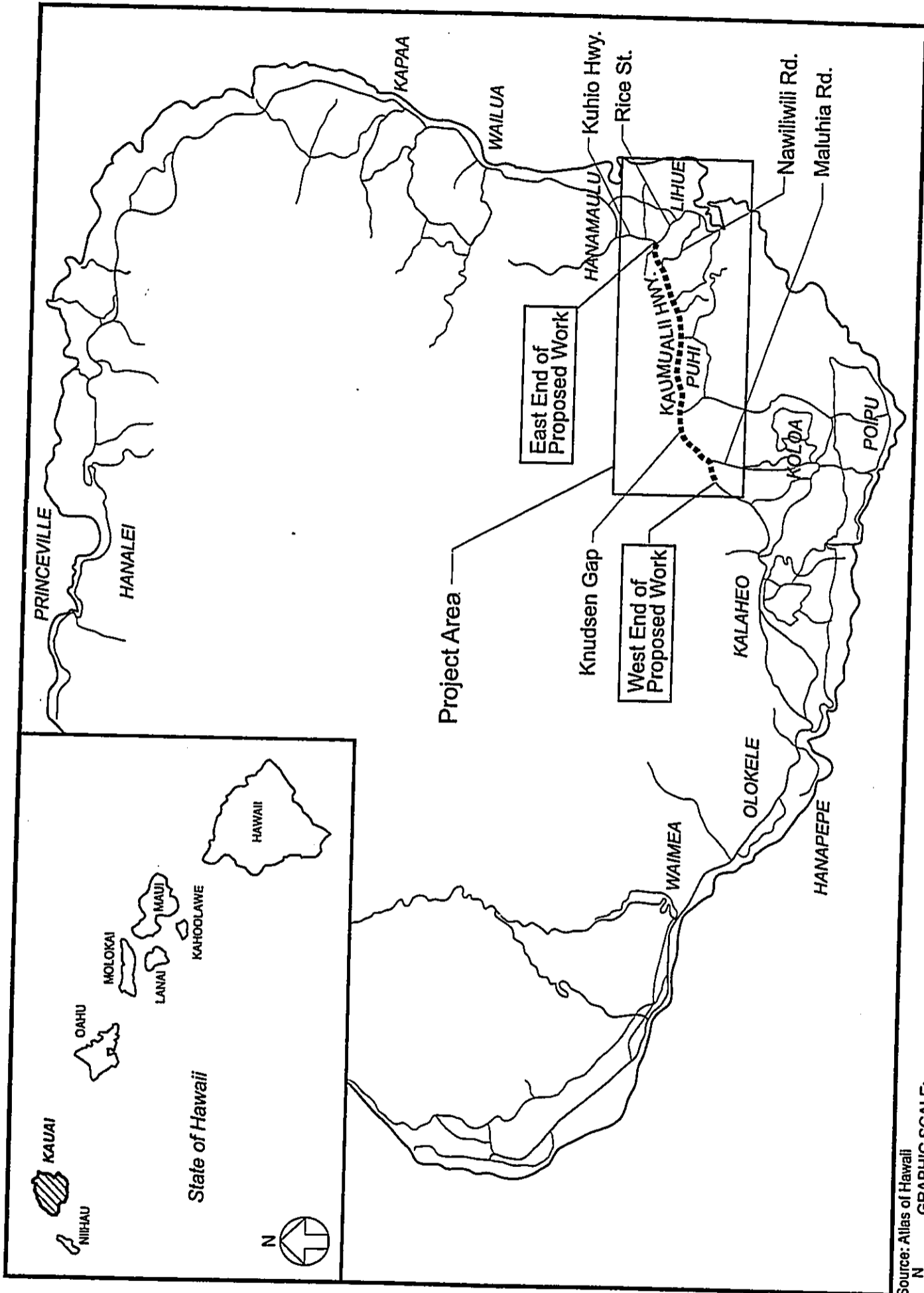
The Highways Division of the State of Hawaii Department of Transportation (SDOT) and the Federal Highway Administration (FHWA) are issuing this Final Environmental Assessment (EA) as the lead local and federal agencies for this project, which is officially named "Improvements to Kaumualii Highway from Lihue to West of Maluhia Road." The project is located on the island of Kauai, County of Kauai, Hawaii (see Figure 1-1), and will be designed to increase the vehicular capacity of Kaumualii Highway between Lihue and Maluhia Road. The project is included in the Statewide Transportation Improvement Program (STIP), which is the capital improvement program for near-term transportation projects in the State.

Under the provisions of the applicable State and federal environmental review processes, the FHWA and the SDOT are the approving agencies at the federal and State levels, respectively.

1.1.1 Planning Context

The Kauai Long-Range Land Transportation Plan (May 1997) includes this project as one element of a comprehensive set of transportation measures designed to meet Kauai's mobility requirements to 2020. If approved, State and federal funding will be used to design and construct the project. The proposed use of State and federal funds triggers the environmental review requirements of Hawaii Revised Statutes (HRS) Chapter 343 (the Hawaii EIS Law) and the National Environmental Policy Act (NEPA).

The environmental review process allows for three courses of action depending on a project's anticipated level of impact. The first course would be "exemption" from environmental review per the Hawaii Administrative Rules (HAR) Chapter 200 (Environmental Impact Statement Rules), and qualification as a "categorical exclusion" per 23 Code of Federal Regulations (CFR) 771 and 40 CFR 1508. These procedures are applicable to types of projects (e.g., road resurfacing, installation of guardrails, etc.) that normally do not impact the environment.



Source: Atlas of Hawaii

GRAPHIC SCALE:



Project Location
IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
FIGURE 1-1

However, the type of project being proposed is not listed as an "exemption" or "categorical exclusion".

The second course of action applies to projects whose environmental impact would not be "significant". The term "significant" has a technical definition under both HAR Chapter 200 and NEPA (see Chapter 6). For such projects, an "Environmental Assessment" (EA) is prepared, and is the appropriate environmental review document. Based on impact analyses presented in this document, and the commitment to implement the mitigation measures described in this document, the proposed project will not cause a "significant" impact to the environment. The basis for concluding that the project's impacts will not be significant is provided in Chapter 6.

An early assessment that the project would not cause a significant impact was presented in the project's Draft EA. As described in Section 5.3, the Draft EA was reviewed by the public and government agencies. No new information from comments received on the Draft EA (see Section 5.3) changed the preliminary FONSI assessment (see below).

The third course of action applies to projects expected to have a "significant" impact on the environment. For such projects, an Environmental Impact Statement (EIS) is prepared, and is the appropriate environmental review document. Since the impacts of the proposed project will not be "significant", an EIS was not prepared.

Following agency and public review of the Draft EA, SDOT responded to all comments received (see Section 5.3). Based on Significance Criteria specified in HAR Chapter 200 (see Chapter 6), comments received on the Draft EA, and SDOT's responses to these comments, SDOT and FHWA have rendered Findings of No Significant Impact (FONSI) under HRS Chapter 343 and NEPA, respectively. Therefore, this Final EA / FONSI has been prepared, and will be publicly announced in the State Environmental Notice.

This Final EA is intended to disclose the environmental and social impacts that could result from the project's implementation, and commit to the implementation of specific mitigation measures. The project is being designed for travel demand levels projected for 2020, the planning horizon of the Long-Range Plan. Therefore, some of the environmental impacts are assessed for that year. Additionally, short-term impacts generated during project construction and impacts occurring immediately after construction are also assessed. Finally, this Final EA

also contains a record of all comments and consultation activities that have been conducted as part of project planning.

1.1.2 History

Kaumualii Highway generally follows a traditional trail system that linked east and west Kauai, especially near the area called "Knudsen Gap"—a natural pass in the Haupu Mountain Range. Before western contact, the Gap was a well-known and highly-trafficked area. However, there are few clues about the exact route of the trail system east of the Gap.

After western contact, economic and population growth on Kauai increased travel demand between the Gap and Lihue, and investments in transportation improvements began in the first half of the 19th century. Immigrants started settling in the Koloa Ahupuaa in the 1830s, fostering a rapid change in the area to sugar cane cultivation and cattle herding. During the same period, settlements also arose in the area of present-day Lihue. Koloa became the official port-of-entry for Kauai in the 1850s, and a sugar plantation was established in Lihue. However, despite prosperity in Koloa and Lihue during the second half of the 19th century, the route from the Gap to Lihue remained an unpaved, dirt carriage road through the end of the 19th century.

At the beginning of the 20th century, the road between the Gap and Lihue was part of a roadway system that connected the southwest and northeast coasts of Kauai. The road remained unpaved, however, until federal funds became available in the 1930s to assist in the construction of the "Kauai Belt Road" (the present Kaumualii Highway). Kauai Belt Road was constructed incrementally, with the last section from Nawiliwili Road to Lihue Town completed in 1950 (Lihue Mill Bridge was actually constructed earlier in 1936).

The last major project on Kaumualii Highway was the construction of a 120 m (420 ft) bridge over Huleia Stream in 1989. This bridge replaced the old "Halfway Bridge," which was constructed in the 1930s.

1.2 PURPOSE OF AND NEED FOR THE PROJECT

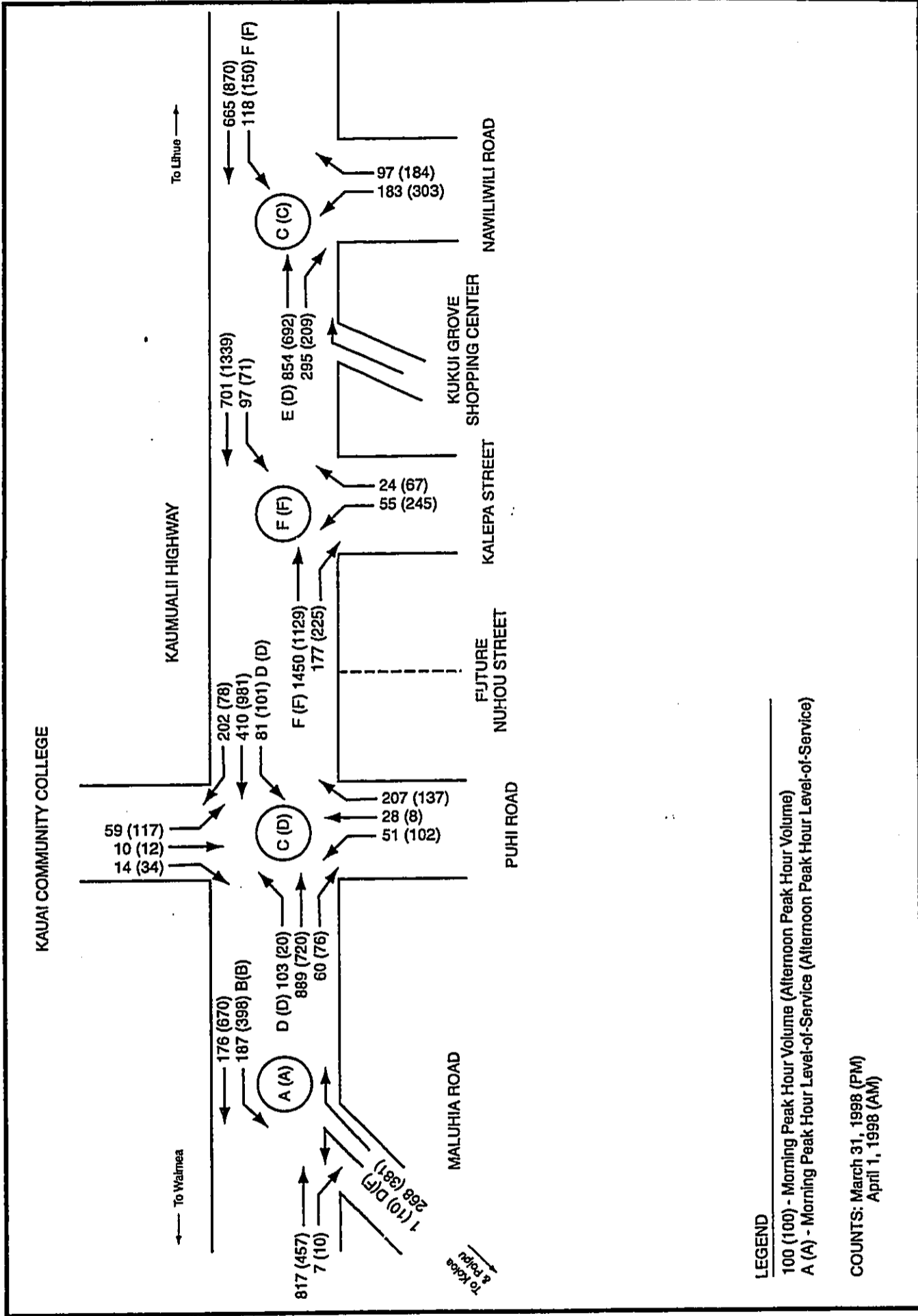
Increasing the vehicular capacity of Kaumualii Highway is proposed now because of existing deficiencies in roadway capacity. Since travel demand in the corridor is expected to increase, insufficient roadway capacity is expected to persist, and even worsen, unless the project is built. The project will also address two aspects of Kaumualii Highway that affect traffic safety: 1) sight distances that are less than current standards; and 2) a roadway vulnerable to head-on collisions. In addition, the project will provide the flexibility to maintain system connectivity during major incidents (e.g., traffic accidents).

1.2.1 Existing Capacity Deficiencies

Roadway performance is measured by level-of-service (LOS). LOS is reported on a scale from "A" through "F", representing best to worst conditions. The ratings are based on the ratio of traffic volume to roadway capacity (V/C ratio). High V/C ratios translate into traveler delay, which further generates driver discomfort, frustration, excess fuel consumption and air pollutant emissions, and lost travel time. LOS C or D is generally considered the least acceptable condition, with LOS E and F considered unacceptable.

According to the Long-Range Plan, traffic during the morning peak hour on Kaumualii Highway within the project limits operates at LOS E and F. This level of roadway congestion, especially on the west side of Lihue, is caused by the substantial amount of residential construction in the Eleele/Hanapepe and Lawai areas that has occurred since the late 1980s. In addition, the Poipu area has been slow to recover from damages sustained during Hurricane Iniki in 1992. Therefore, employment shifted to Lihue. Commuter travel that formerly flowed between residential areas west of Lihue and Poipu now moves between these residential areas and Lihue. These factors have combined to increase traffic volumes on Kaumualii Highway east of Maluhia Road 26 percent between 1988 and 1994 (Long-Range Plan), despite Hurricane Iniki. Since no capacity improvements have been made to Kaumualii Highway in that time frame, traffic conditions have worsened considerably.

Figure 1-2 shows peak hour traffic counts taken on Kaumualii Highway at four intersections from March 21 to April 1, 1998: Maluhia Road, Puhi Road, Kalepa Street, and Nawiliwili Road (Kaumualii Highway Widening, Lihue to Maluhia Road, Traffic Assessment Report, Kauai).



1998 Peak Hour Traffic Volumes and Levels-of-Service IMPROVEMENTS TO KAUMUALII HIGHWAY
Final Environmental Assessment
FIGURE 1-2



Hawaii, July 1998). The analysis of morning and afternoon peak hours of traffic in 1998 indicates that the section of Kaumualii Highway from Lihue to Puhi operates at LOS F, confirming the conclusion of the Long-Range Plan. The morning and afternoon peak hour congestion (LOS D to F) is primarily at intersections between Nawiliwili Road and Puhi (see Figure 1-2).

1.2.2 Future Transportation Demand

Population and economic growth in south Kauai is forecast to increase travel demand in this region. The Koloa-Poipu area is expected to remain an important visitor resort center, and is anticipated to experience employment and residential development. The Waimea to Port Allen region, and the Poipu to Lihue region, are both expected to experience population growth. According to the Long-Range Plan, the populations of the Waimea, Koloa, and Lihue districts are projected to increase by 7.8 percent, 35.3 percent and 31.7 percent between the years 1994 and 2020, respectively. Employment in the latter two is projected to increase 26.6 percent and 42.3 percent within the same years, respectively.

With Kaumualii Highway being the only regional highway in south Kauai, the capacity of this highway is insufficient to accommodate projected year 2020 traffic volumes due to population, employment and visitor growth (Long-Range Plan). Therefore, traffic conditions on Kaumualii Highway are expected to deteriorate below the already inadequate conditions reported in Section 1.2.1 if no capacity improvements are made to the highway. More information on the traffic conditions that will be experienced in the future if the project is not implemented is provided in Section 4.4.1.

1.2.3 Highway Safety Improvements

Kaumualii Highway is a safe roadway based on accident data. However, there are two aspects to roadway safety that will be improved by the proposed project.

First, there are a few sections of roadway with sight distances (how far ahead a driver can see) less than current highway standards. These sections of roadway exist because the highway was constructed before the adoption of current sight distance standards. Sight distance is important in terms of providing adequate passing and stopping distances. The project will

provide sight distances that conform to current highway standards along the entire section proposed for improvement.

Second, motorists using Kaunualii Highway are vulnerable to head-on collisions because Kaunualii Highway is a two-lane undivided roadway. Since many two-lane undivided highways have low traffic volumes, the number of head-on collisions on these roadways is relatively low. However, as traffic volumes increase, the possibility of head-on collisions also increases. Because Kaunualii Highway is a heavily used roadway, its conversion from an undivided roadway to a divided roadway will substantially reduce the chance of head-on collisions.

1.2.4 System Connectivity Improvements

When major incidents (e.g., traffic accidents) occur on Kaunualii Highway, one or both lanes have been closed to clear the highway and conduct investigations. When lanes are closed, traffic has been detoured onto cane haul roads, causing congestion and delays. Using cane haul roads for detour purposes is becoming more difficult because sugarcane is no longer being cultivated along much of the highway, and the haul roads are not being maintained. Therefore, their future utility as a temporary detour route cannot be assured. Since the project will provide two additional lanes in a divided roadway configuration, the likelihood of a major incident blocking all four lanes will be highly unlikely. Therefore, with the proposed project, the police and the SDOT will have the flexibility in the future to detour traffic flow around a major incident by using the unaffected roadbed of a divided Kaunualii Highway.

CHAPTER TWO

Alternatives

CHAPTER 2 ALTERNATIVES

This chapter describes the alternatives that receive detailed analysis in Chapter 4 of this Final Environmental Assessment (EA): one build alternative and the No Build alternative. It also briefly describes other alternatives that were considered, but were either rejected or modified in the evolution of the Build Alternative.

2.1 DESCRIPTION OF ALTERNATIVES

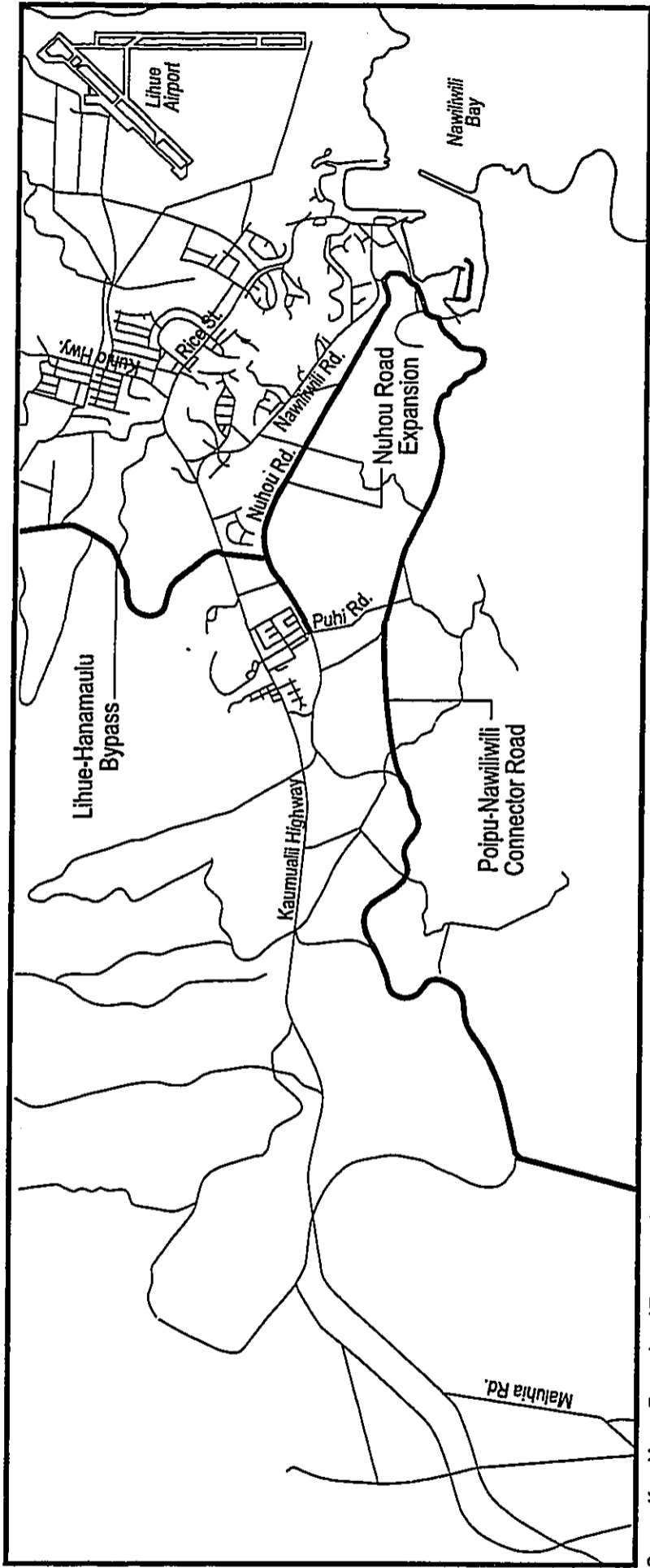
2.1.1 No Build Alternative

The No Build alternative consists of roadway improvements listed in the Kauai Long-Range Land Transportation Plan (May 1997) that are expected to be implemented by 2020, except for the proposed project addressed by this Final EA. Proposed roadway improvements in the vicinity of this project include (see Figure 2-1):

- Poipu-Nawiliwili Connector Road – new two-lane roadway makai of the existing Kaunualii Highway;
- Lihue-Hanamaulu Bypass Road – new four-lane divided roadway;
- Nuhou Road – new four-lane undivided roadway between Puhi Road and Nawiliwili Road;
- East Koloa-Poipu Bypass Road – widen to a four lane-lane undivided roadway between the proposed Poipu-Nawiliwili connector Road and Poipu Road; and
- Poipu Road – widen to a four-lane divided roadway between Lawai Road and the East Koloa-Poipu Bypass Road.

2.1.2 Build Alternative

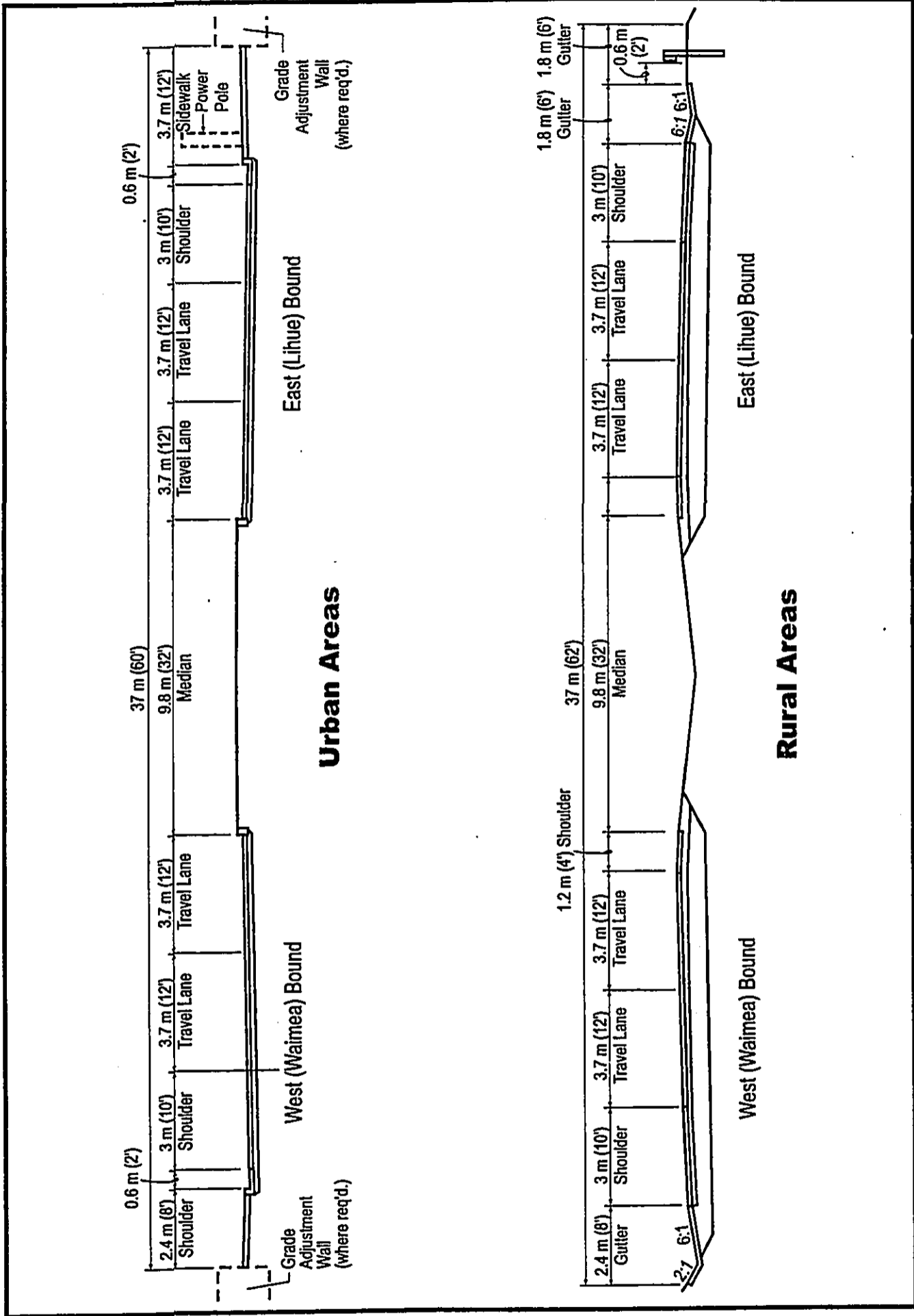
The proposed project will convert Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway (see Figure 2-2) between Kuhio Highway in Lihue to approximately 1340 m (4400 feet) west of Maluhia Road (see Figure 1-1). The west end was selected to provide a transitional section from the two-lane configuration west of Maluhia Road to the proposed four-lane configuration starting in the vicinity of the Kaunualii Highway / Maluhia



Source: Kauai Long-Range Land Transportation Plan, May 1997



Roadway Improvements Included in the No Build Alternative
IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
FIGURE 2-1



Source: ParEn, Inc.

Proposed Roadway Cross-Sections
 IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
 FIGURE 2-2

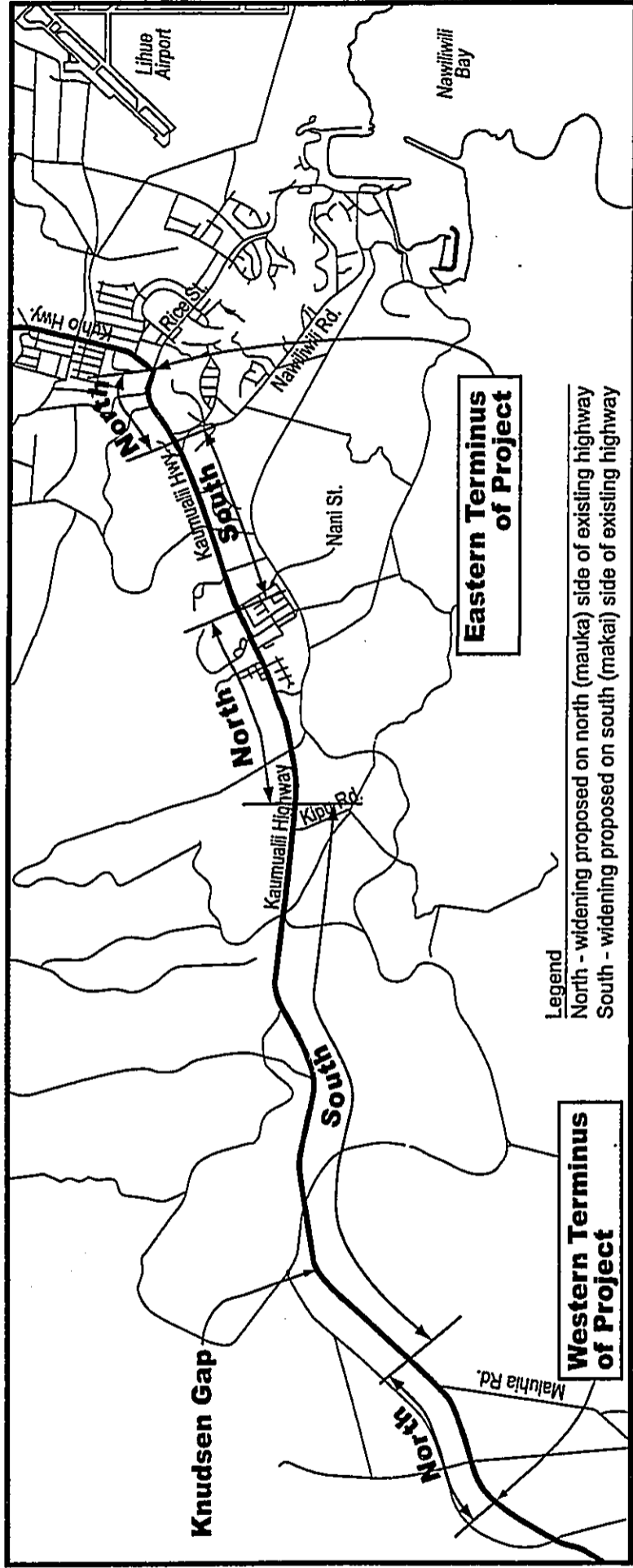
Road intersection. This intersection is essentially the project terminus as Maluhia Road provides access to Koloa and Poipu. The addition of two lanes on Kaumualii will substantially increase the vehicular capacity of the road. The total length of the project will be approximately 12 km (7.5 miles), and it will be constructed in phases.

Depending on location (see Figure 2-3), the widening will occur either on the south (makai) or the north (mauka) side of the existing highway alignment. As described in Section 2.2.1, widening Kaumualii Highway exclusively on the south (makai) or north (mauka) side was considered. However, a hybrid of mauka and makai widening was selected to lessen the environmental impacts of the project. In addition, an alternative was considered that would realign Kaumualii Highway between Knudsen Gap and the west end of the project to avoid both wetlands and the Maluhia Road tree tunnel, a unique collection of trees designated "exceptional" under the County's Exceptional Tree Ordinance (see Section 2.2.2). However, following a precise delineation of wetland areas along the project, it became possible to modify the Build Alternative to avoid these important resources (see Figure 2-4).

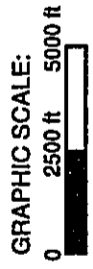
From Kuhio Highway in Lihue to Nawiliwili Road, Kaumualii Highway will be widened on the north (mauka) side to avoid:

- relocating the head shaft of a sugarcane conveyor that crosses Kaumualii Highway;
- displacing a Lihue Mill storage building;
- displacing part of Lihue Public Cemetery; and
- displacing part of a County Department of Water baseyard facility.

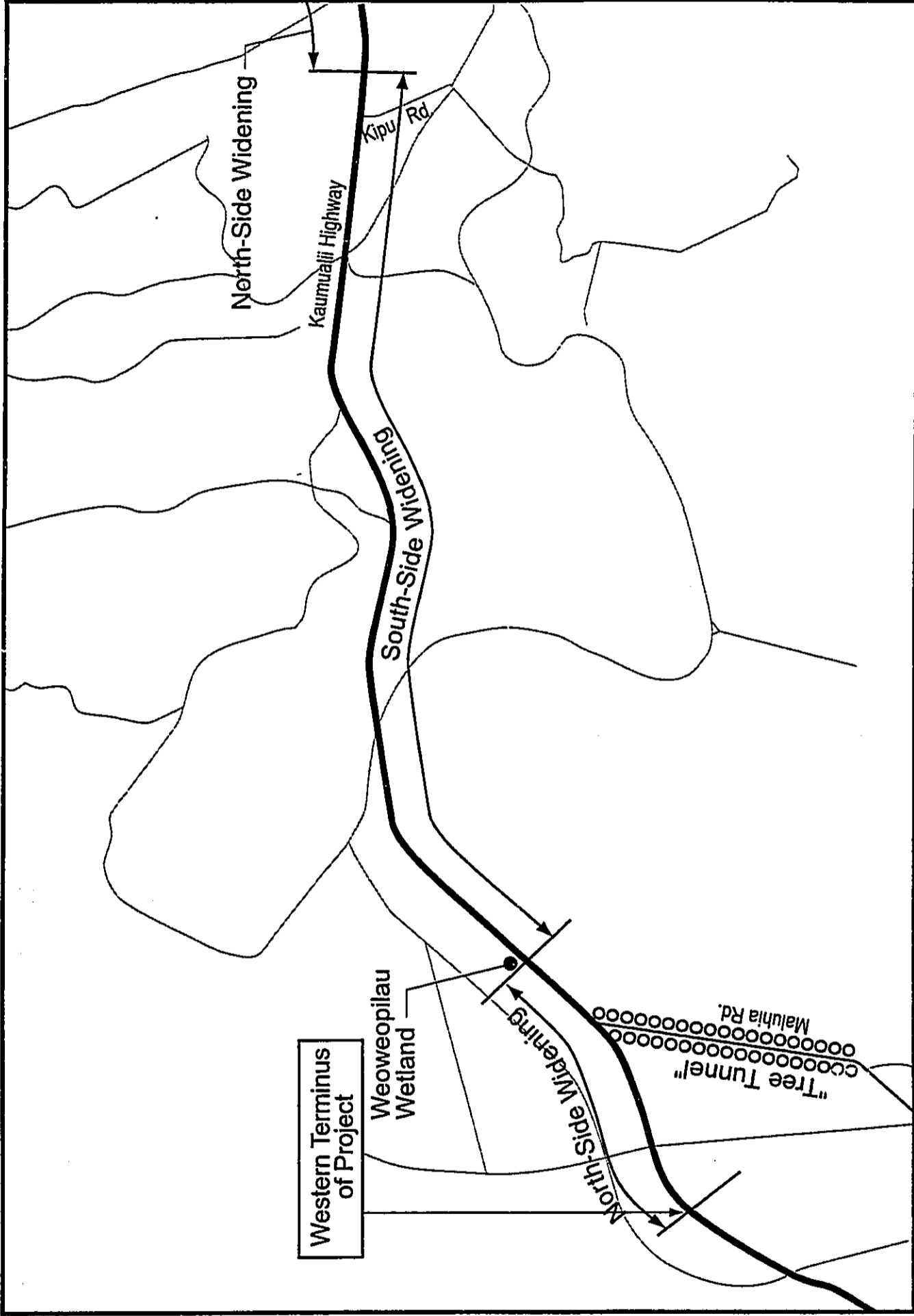
From Nawiliwili Road to Nani Street in Puhi, the proposed widening will switch to the south (makai) side to take advantage of existing SDOT right-of-way. From Nani Street to Kipu Road, the proposed widening will shift to the north (mauka) side to avoid businesses in Puhi, such as the Grove Farm office building (a potential historic property), Kauai Nursery and a Brewer Environmental Industries establishment. From Kipu Road to just west of a wetland adjacent to Weoweopilau Stream (see Section 3.7.3), a south (makai) side widening was selected to avoid the Haiku airstrip, Halenanahu Reservoir, the wetland, and an access road to a quarry at Huleia Bridge. From the wetland to the west end of the project limits, the proposed widening



Source: ParEn, Inc.



Direction of Proposed Widening of Build Alternative IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
FIGURE 2-3



Source: ParEn, Inc.



GRAPHIC SCALE:



Work Proposed in the Vicinity of Maluhia Road
IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
FIGURE 2-4

will be on the north (mauka) side to avoid displacing trees that are part of the Maluhia Road tree tunnel.

The area from Lihue to Puhi is mostly urban and is planned for further urban development. Therefore, the typical roadway cross-section for urban areas (shown on Figure 2-2) will be constructed from Kuhio Highway to Nuhou or Puhi Streets. The precise limits of the urban roadway section will be determined during the design phase.

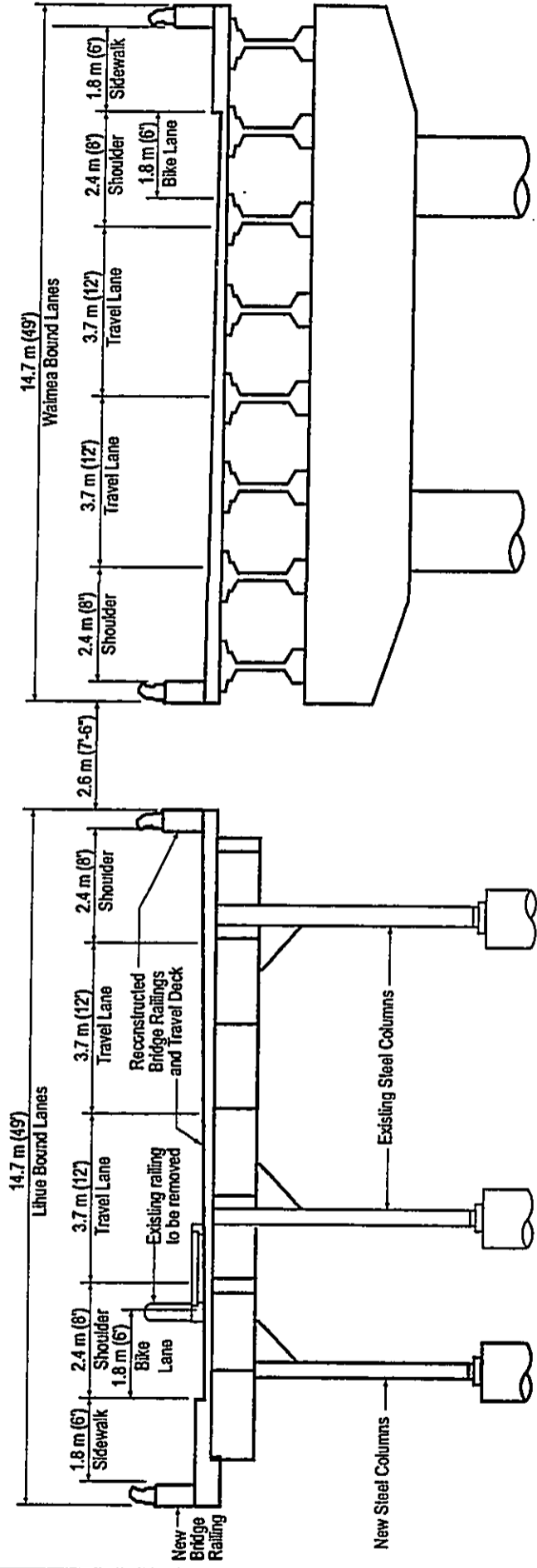
The section of Kaumualii Highway west of Puhi traverses agricultural and open space areas, and therefore the rural roadway cross-section shown on Figure 2-2 will be constructed.

The roadway will include two 3.7 m (12 feet) lanes in each direction, and paved 3 m (10 feet) wide shoulders (see Figure 2-2). The shoulders will be designated for use by cyclists. In urban areas, bike lanes will be striped at intersections because the 3 m (10 feet) wide shoulders will not be maintained in these areas. The urban areas will also include sidewalks conforming to the Americans with Disabilities Act. The median will be approximately 10 m (32 feet) wide in both urban and rural areas.

The roadway right-of-way will be at least 37 m (120 feet) wide, with the precise width of the right-of-way at any particular point depending on local terrain features, which will affect the amount of earthwork (grading) required.

Channels and culverts will generally convey the storm water runoff from the higher side of the road (mauka side) to the lower side (makai). Drainage from bridges over streams will be discharged into the streams. In urban areas, drainage facilities will include storm drains or grated catch basins along the curbs. New drainage facilities (culverts and piping) will generally be the same as those already on Kaumualii Highway, except that they will be of higher capacity, and will be extended or reconstructed to accommodate the additional two lanes, widened median, shoulders and other proposed new roadway elements.

The existing Lihue Mill and Huleia Bridges will remain in place, but will be converted to one-way traffic only (see Figures 2-5 and 2-6). New bridges will be constructed at these locations for traffic movements in the opposite direction. Lihue Mill Bridge, which crosses Nawiliwili Stream, will be modified to meet current federal safety standards. In particular, the existing

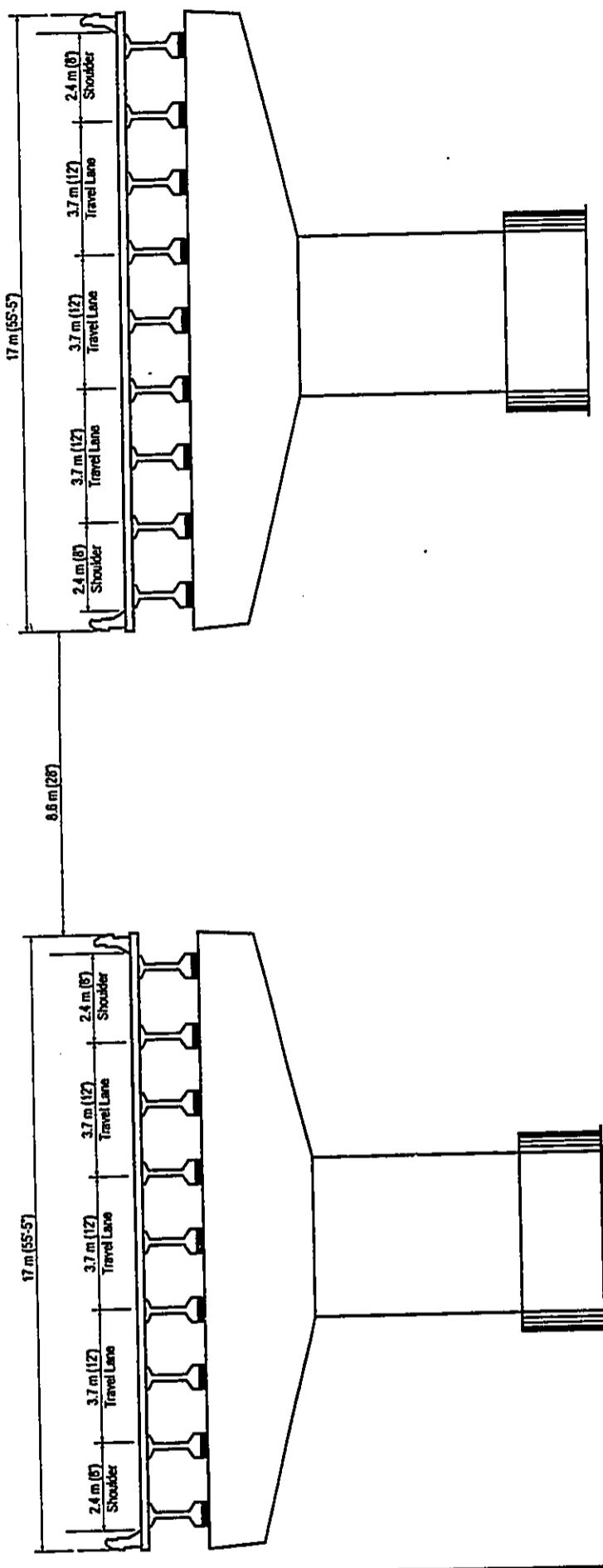


**Existing Bridge Structure
Modified for East (Lihue) Bound Traffic Only**

**New Bridge Structure
West (Waimea) Bound Traffic Only**

Source: ParEn, Inc.

**Cross-Sections of Modified and New Lihue Mill Bridges
IMPROVEMENTS TO KAUMUALII HIGHWAY**
Final Environmental Assessment
FIGURE 2-5



**New Bridge Structure
East (Lihue) Bound Traffic Only**

**Existing Bridge Structure
Modified for West (Waimea) Bound Traffic Only**

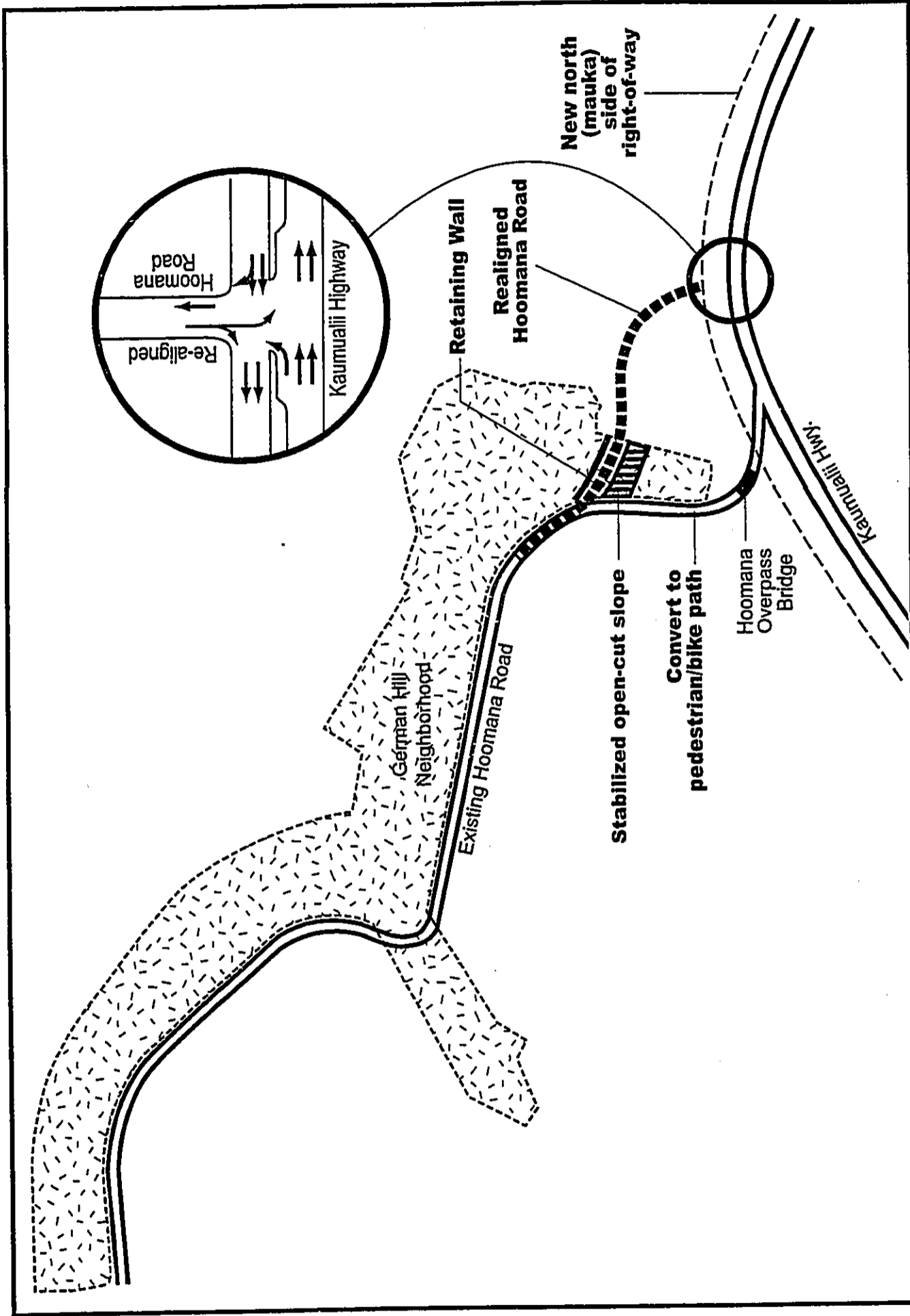
Source: ParEn, Inc.

**Cross-Sections of Modified and New Huleia Bridges
IMPROVEMENTS TO KAUMUALII HIGHWAY**
Final Environmental Assessment
FIGURE 2-6

steel railings, which are rusting, will be replaced with concrete railings. A second Lihue Mill Bridge will be constructed on the north (mauka) side of the existing bridge for west (Waimea) bound traffic (see Figure 2-5). This new bridge will be similar to the modified Lihue Mill Bridge in profile and style. The existing Huleia Bridge will also remain in place, and its lanes converted to west (Waimea) bound traffic only. A second Huleia Bridge will be constructed on the south (makai) side of the existing bridge for east (Lihue) bound traffic (see Figure 2-6).

The posted speed limit on Kaumualii Highway will remain at 80 km/h (50 mph) west of Puhi, 55 km/h (35 mph) from Puhi to Nawiliwili Road, and 40 km/h (25 mph) from Nawiliwili Road to Lihue. The existing traffic signals at Nawiliwili Road, Kalepa Street, Nuhou Street, and Puhi Road will be modified to accommodate the widened Kaumualii Highway. The Maluhia Road intersection may include new traffic signals if double left-turn lanes are provided for west (Waimea) bound to south (makai) bound traffic. Left-turn pockets will be provided at all intersections within the widened median.

Widening Kaumualii Highway on the north (mauka) side in Lihue, as proposed, will require closing the existing intersection with Hoomana Road (see Figure 2-7). Hoomana Road is the only access to German Hill, a residential neighborhood of about 20 houses and a church. To maintain access to German Hill, Hoomana Road will be re-aligned as shown on Figure 2-7. The new Hoomana Road intersection will be approximately 90 m (300 feet) east of the existing intersection. Unlike the existing Hoomana Road intersection, all left-turn movements will be allowed at this new intersection. The section of Hoomana Road from Kaumualii Highway to where the new alignment will meet the existing road will be closed to vehicular traffic, but will be converted to a pedestrian/bike path accessing the new north (mauka) shoulder of the widened Kaumualii Highway. As shown on Figure 2-7, a retaining wall will be constructed on the north (mauka) side of the re-aligned road so that no or little right-of-way will be needed from the adjacent property. An open cut-slope will be used on the south (makai) side because the property affected will have to be acquired anyway because the re-aligned road will cut-off this property's access to Hoomana Road.



Realigned Hoomana Road
 IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
 FIGURE 2-7

Source: ParEn, Inc.

Not to Scale



2.2 ALTERNATIVES CONSIDERED BUT DROPPED FROM CONSIDERATION

The following build alternatives were considered, but were dropped from further consideration. In this section, these alternatives are described and the basis of their rejection presented.

- widen Kaumualii Highway only on the south (makai) side (Option A);
- widen Kaumualii Highway only on the north (mauka) side (Option B);
- widen Kaumualii Highway between Lihue to Knudsen Gap and re-align highway between Knudsen Gap and west end; and
- transportation system management.

In addition, the project had to consider options for certain elements of the project. These options shown below and the rationale for their rejection are also described in this section.

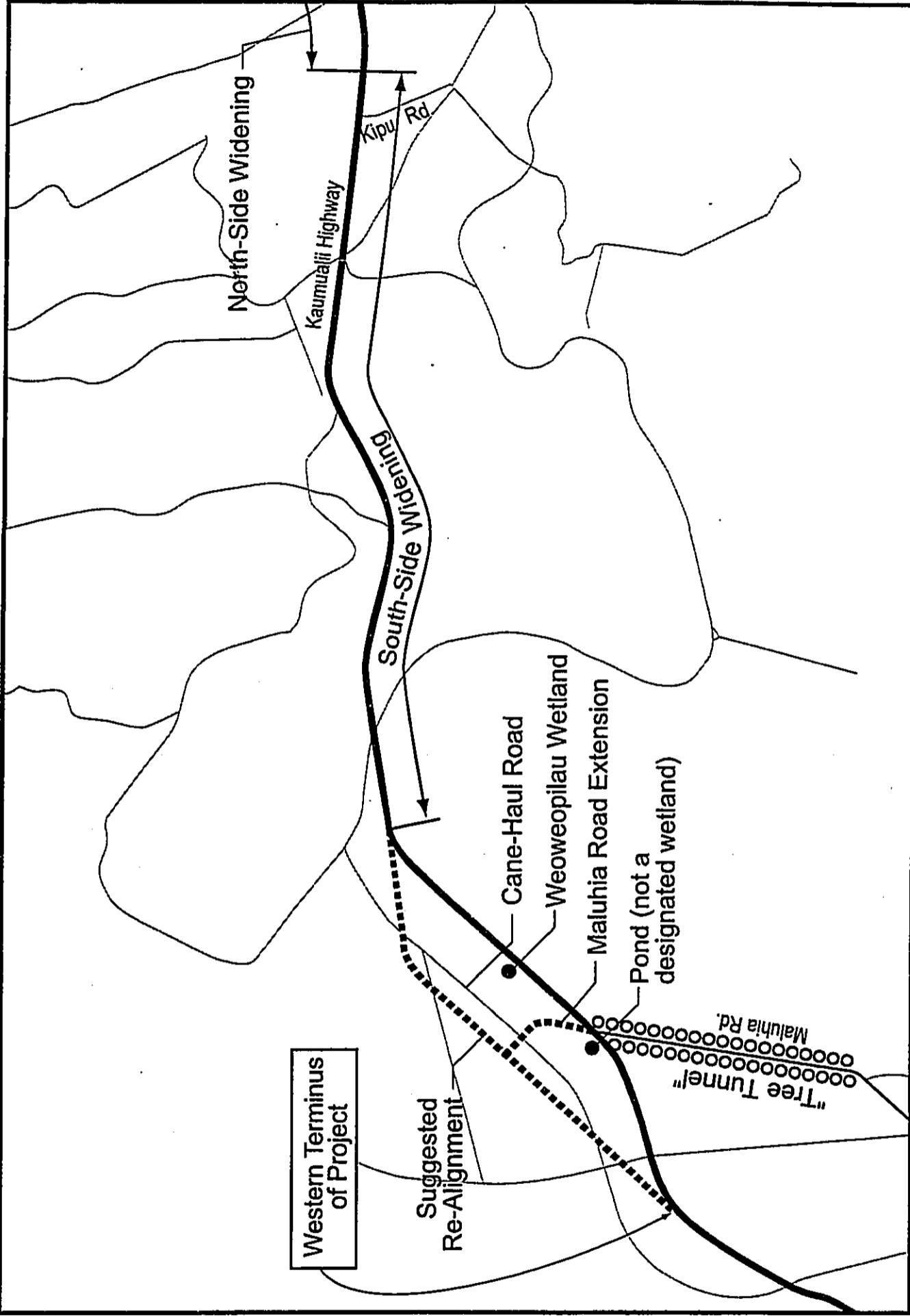
- options for maintaining access to German Hill; and
- alternative for modifying Lihue Mill Bridge.

2.2.1 Widening on North or South Side Only

Options A and B were eliminated from further study because a hybrid approach could achieve the project's purposes and needs while avoiding impacts to Lihue Public Cemetery, Lihue Mill, Grove Farm office building, a Brewer Environmental Industries site, Kauai Nursery, Puhi businesses, County of Kauai Department of Water facility, and the need for substantial modification to a cane conveyor system owned by Lihue Plantation.

2.2.2 Partial Re-Alignment

To avoid what was initially considered two wetland areas (Upon subsequent investigation, one of the areas initially thought to be a wetland did not meet the regulatory definition of a wetland. See Section 3.7.3) and the north (mauka) end of the Maluhia Road tree tunnel, an alternative was suggested during the March 2, 1999 public meeting (see Section 5.2) that would re-align Kaumualii Highway between Knudsen Gap and the west end (see Figure 2-8). Upon conceptual engineering, the re-aligned highway would be displaced approximately 370 m



Source: ParEn, Inc.

N

GRAPHIC SCALE:



**Partial Re-Alignment Alternative
IMPROVEMENTS TO KAUMUALII HIGHWAY**
Final Environmental Assessment
FIGURE 2-8

(1200 feet) to the north (mauka) of the existing highway. This new roadway segment would be approximately 2830 m (9300 feet) long and require a right-of-way width of up to 60 m (200 feet). The section of Kaumualii Highway that would be replaced by the re-alignment would be abandoned and perhaps converted to agricultural use. Maluhia Road would be extended to meet the new alignment.

Following delineation of wetlands in the project area according to the US Army Corps of Engineers' regulatory definition, the boundaries of the wetlands near the Maluhia Road tree tunnel were clarified. The Build Alternative was then modified to avoid both the Maluhia Road tree tunnel and the wetlands in the vicinity. Since the objectives of the partial re-alignment alternative were now met by the modified Build Alternative at substantially less cost, the rationale for continuing to study the partial re-alignment alternative was no longer valid and it was dropped from further consideration.

2.2.3 Transportation System Management

Transportation system management (TSM) is the application of construction, operational, and institutional actions to make the most efficient and cost effective use of existing transportation infrastructure. TSM actions are categorized as being either "supply-side" or "demand-side". Supply-side actions are intended to increase the capacity of existing infrastructure (e.g., a roadway) using relatively "low cost" and localized solutions, such as use of contraflow lanes, intersection channelization, improved pavement or signage, synchronized traffic signals, etc. Individual supply-side actions are often undertaken in localized areas to alleviate traffic problems at spot locations.

Demand-side actions are intended to reduce congestion by decreasing the number of vehicles traveling at the same time by such measures as increasing vehicle occupancy, lowering the peak travel demand by shifting the time of travel, or making the use of single-occupant vehicles less attractive. Demand-side actions include high-occupancy vehicle (HOV) lanes, ride-sharing programs, parking management, and transit service improvements. Except for HOV facilities, most demand-side actions are more appropriate within the context of a regional or metropolitan area.

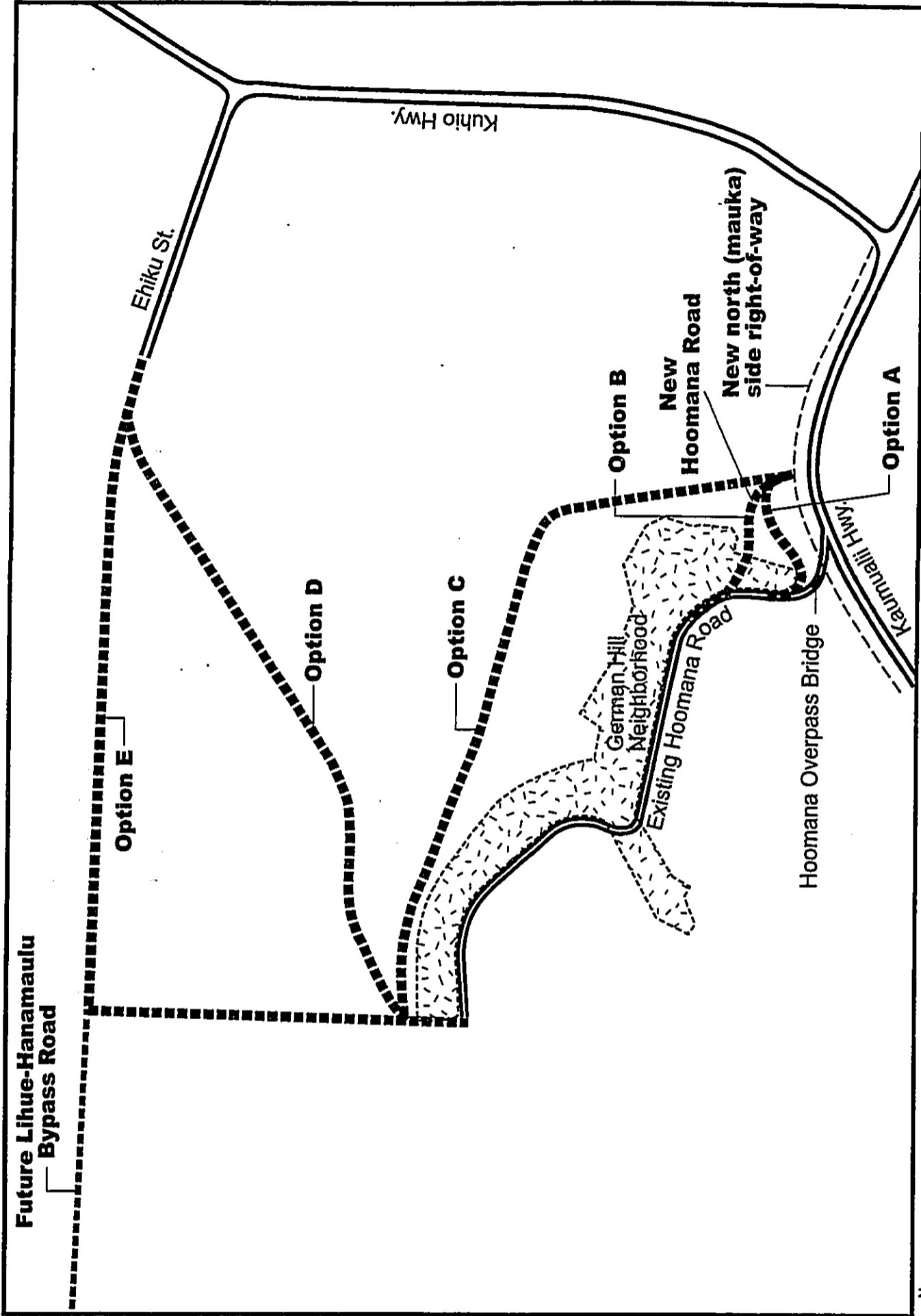
For this project, supply-side TSM actions to address the purpose and need of the project were assessed. However, without widening the highway, low-cost actions to improve the intersections on Kaunualii Highway would not sufficiently increase capacity to address existing and future travel demand. Providing HOV lanes were not considered because that would require widening the highway. Therefore, a TSM alternative was eliminated from further consideration.

2.2.4 Options to Maintain Access to German Hill

As described in Section 2.1.2, the north (mauka) side widening of Kaunualii Highway in Lihue will force the closure of the existing Hoomana Road intersection, the only access to a small residential neighborhood called German Hill. Five optional routes were considered as shown on Figure 2-9. As described in Section 2.1.2, Option B was selected to be part of the Build Alternative. Options C, D or E, which would provide access to the neighborhood from the north (mauka) side, was not selected because the German Hill residents, as communicated during a January 13, 2000 public meeting and subsequent comment letters (see Appendix A), strongly objected to these options. They believe that any of these routes would cause unacceptable impacts to their community, as well as to Lihue Plantation. Option A was also generally not favored by the German Hill residents, but was not as objectionable as Options C, D and E. Option A would not meet County design standards because of its tight curves, and therefore, was not supported by the County Department of Public Works (see Appendix A) who would retain jurisdiction of the road after it is constructed. For this reason, SDOT decided to drop Option A from consideration.

2.2.5 Alternative for Modifying Lihue Mill Bridge

As described in Section 3.10.2, Lihue Mill Bridge is considered historic and eligible for National Register of Historic Places. Although the Build Alternative will not displace the bridge, it will modify it by converting its two lanes to one-way traffic, widening the bridge deck and replacing the steel railings. In accordance with Section 106 of the National Historic Preservation Act (see Section 4.10.1), the proposed modification will have an "adverse effect" on this historic property (see Section 4.10.2). A second alternative to modify the bridge was developed to explore the possibility of preventing the "adverse effect" determination under Section 106 (see



Source: ParEn, Inc.
Not to Scale



Options Considered to Maintain Access to German Hill
IMPROVEMENTS TO KAUMUALII HIGHWAY
Final Environmental Assessment
FIGURE 2-9

Figure 2-10). However, since this alternative would still remove the steel railings (an important characteristic making the bridge historic), and require the widening of the bridge deck despite a separate pedestrian bridge, it would not change the "adverse effect" determination. Therefore, this alternative was dropped from consideration.

2.3 ESTIMATED COST, PHASING AND SCHEDULE

The estimated cost of the Build Alternative is between \$75 million to \$110 million in year 2000 dollars. This cost includes right-of-way acquisition and construction.

Due to funding constraints, the entire project will be constructed in phases. The first phase will extend approximately 5 km (3 miles) from Kuhio Highway in Lihue to Kipu Road. The limits of subsequent phases have not yet been determined.

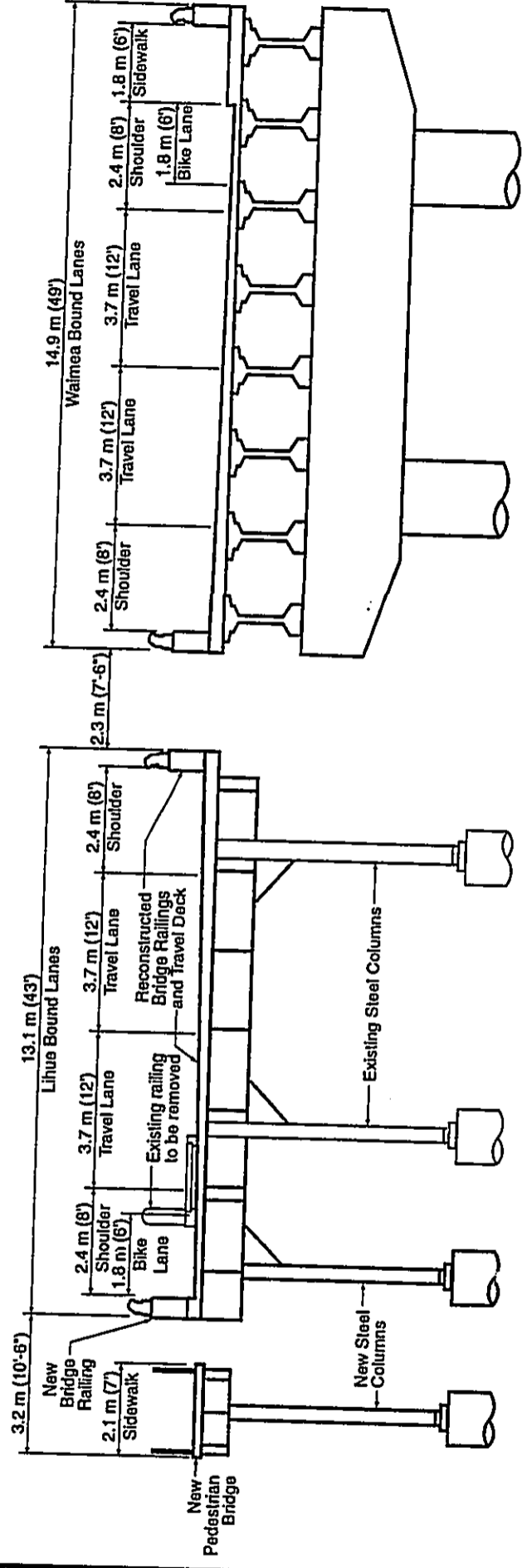
The present project schedule is shown on Table 2-1. The environmental review process will be completed by September 2000. Design, permitting and right-of-way acquisition is expected to last up to two years, and is scheduled begin immediately after completion of the environmental review. Construction of phase one is expected to begin in 2003, and the first phase of improvements to Kaumualii Highway is scheduled to open for service in 2005. The schedule of subsequent phases will depend on funding availability.

**Table 2-1
Proposed Project Schedule**

Activity	Period
Design, Permitting and Right-of-Way Acquisition ¹	Fall 2000 to 2002
Construction of Phase One	2003
Open for Service	2005
Construction of Subsequent Phases	TBD

Notes: ¹ Design will be completed for all phases. Permitting and right-of-way acquisition will only be done for the first phase.
TBD: to be determined, based on funding availability.

Source: State of Hawaii, Department of Transportation, March 2000.



**Existing Bridge Structure
Modified for East (Lihue) Bound Traffic Only**

**New Bridge Structure
West (Waimea) Bound Traffic Only**

Source: ParEn, Inc.

CHAPTER THREE
Affected Environment

CHAPTER 3 AFFECTED ENVIRONMENT

This chapter describes existing environmental conditions in the area potentially affected by the project. Impacts of the proposed project on these conditions are discussed in Chapter 4.

3.1 LAND USE

3.1.1 Regional Setting

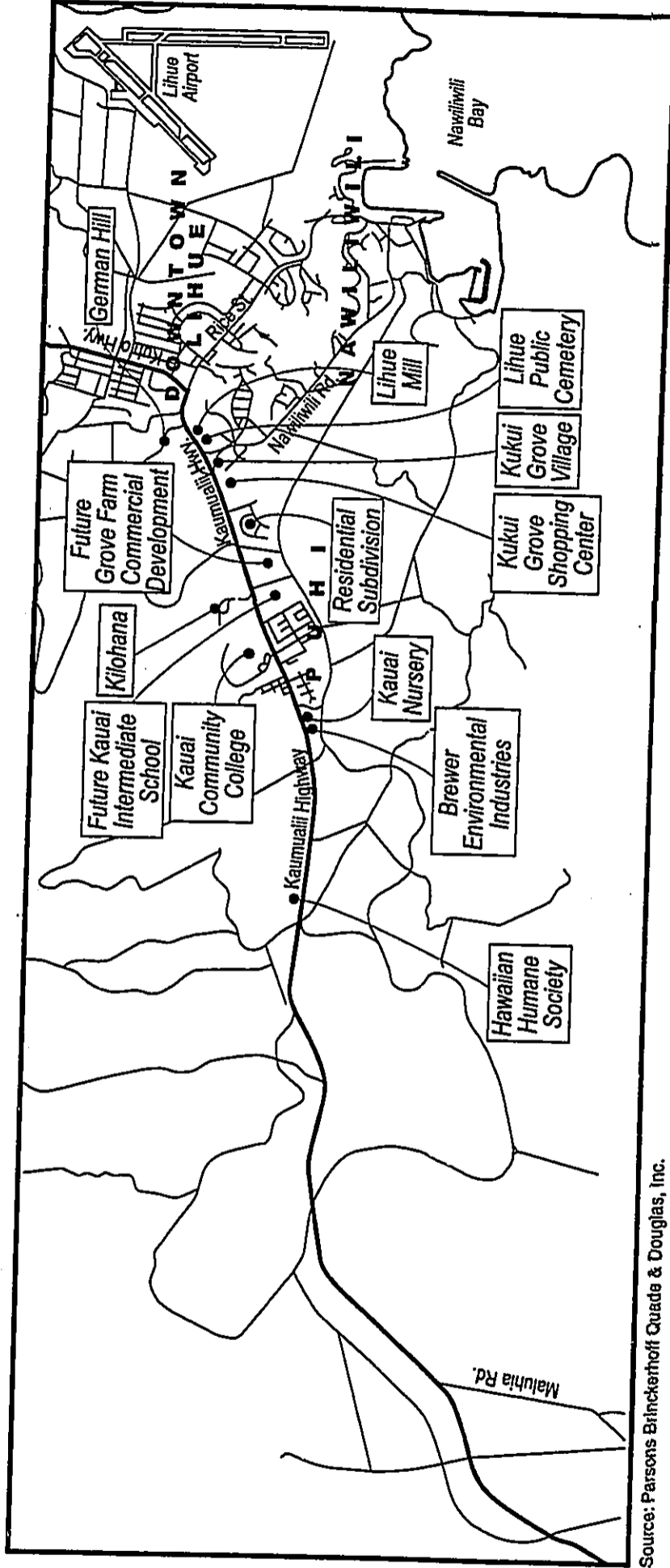
The County of Kauai consists of two major islands, Kauai, the "Garden Isle", and Niihau, the "Forbidden Isle". The 1997 population of the County was estimated at 56,000 (State of Hawaii, Department of Business, Economic Development and Tourism, 1997), making it the least populous of the four counties in the State. With the population of Niihau at about 230 (1990 census), over 99 percent of the population in the County resides on the island of Kauai. Kauai is the fourth largest island in the Hawaiian Archipelago, with an area of approximately 1431 km² (552 square miles).

The project will be located in the southeast portion of the island between Lihue, the largest urban area on the island, and Maluhia Road (see Figure 1-1). Some construction will extend west of Maluhia Road to provide a transition from existing two-lane configuration to the proposed four-lane configuration.

Neighborhoods and communities near the proposed project include Lihue, German Hill, Nawiliwili and Puhi. The locations of these neighborhoods and communities are shown on Figure 3-1.

3.1.2 Existing and Planned Land Uses

The eastern portion of the project area is characterized by urban land uses and open space. The western portion of the project area is open space, primarily former sugarcane fields. Selected land uses are shown on Figure 3-1.



Source: Parsons Brinckerhoff Quade & Douglas, Inc.



GRAPHIC SCALE:



**Existing and Planned Land Uses
IMPROVEMENTS TO KAUMUALII HIGHWAY**
Final Environmental Assessment
FIGURE 3-1

Near the eastern terminus of the project (the Kaumualii Highway / Kuhio Highway / Rice Street intersection) is the Lihue town center. The town center includes the County Building and Civic Center, a State office building, and other commercial establishments. Northwest of the eastern terminus is a small residential neighborhood called German Hill. German Hill consists of about 20 houses and a church. Access to this neighborhood is via Hoomana Road, a narrow roadway extending mauka from Kaumualii Highway immediately east of Lihue Mill Bridge (Nawiliwili Stream). To the immediate south (makai) of Lihue Mill Bridge, within the Nawiliwili Stream floodplain (see Section 3.7.4), is Lihue Mill, which is owned by Amfac Land Company, Ltd. To the west of the mill and on a hill above Kaumualii Highway is Lihue Public Cemetery. Just outside of Lihue, along the south (makai) side of Kaumualii Highway and adjacent to Nawiliwili Road, is Kukui Grove Village, a business park, and Kukui Grove Shopping Center, the largest shopping center on Kauai. A residential subdivision is located near the shopping center.

Puhi is the town closest to Lihue along Kaumualii Highway. This community has its roots in the island's sugarcane industry, and is the location of the Grove Farm headquarters, which was established in the mid-1930s (see Section 3.10.2). Puhi includes a small commercial business core, Kauai Community College on the north (mauka) side of the highway, a small industrial district located approximately 0.5 m (1/3 mile) south (makai) of the highway, and residences that include some low-density multi-family units. Kauai Nursery, a flower nursery, and a Brewer Environmental Industries establishment is located just west of Puhi on the south (makai) side of the highway. Open space (former agricultural lands) predominates west of Puhi. A Hawaiian Humane Society facility is located approximately 2.5 km (1.5 miles) west of Puhi.

Most of the land adjacent to the remainder of the Highway is open space and agricultural land, with the exception of Kilohana, a building on the Hawaii Register of Historic Places, which was once the residence of a prominent family on Kauai.

According to the County Planning Department, planned urban development in the project area would be limited to the south (makai) side of Kaumualii Highway between Puhi and Lihue. Grove Farm Properties, Inc., the major landowner in this area, is planning to develop both commercial and residential uses in this locale. The State is constructing Kauai Intermediate School just east of Puhi, adjacent to the Nuhou Road extension (see Figure 3-1). Based on

County planning documents, such as the currently proposed update of the Kauai General Plan (see Section 3.1.3.2a), Puhi would eventually merge with Lihue and Nawiliwili.

3.1.3 Governmental Plans, Policies And Controls for the Affected Environment

3.1.3.1 Hawaii State Plans and Controls

3.1.3.1a Hawaii State Plan

The Hawaii State Plan (June 1991) consists of comprehensive goals, objectives, policies and priorities in all areas of government functions. These functions include the protection of the physical environment, the provision of public facilities, and the promotion and assistance of socio-cultural advancement.

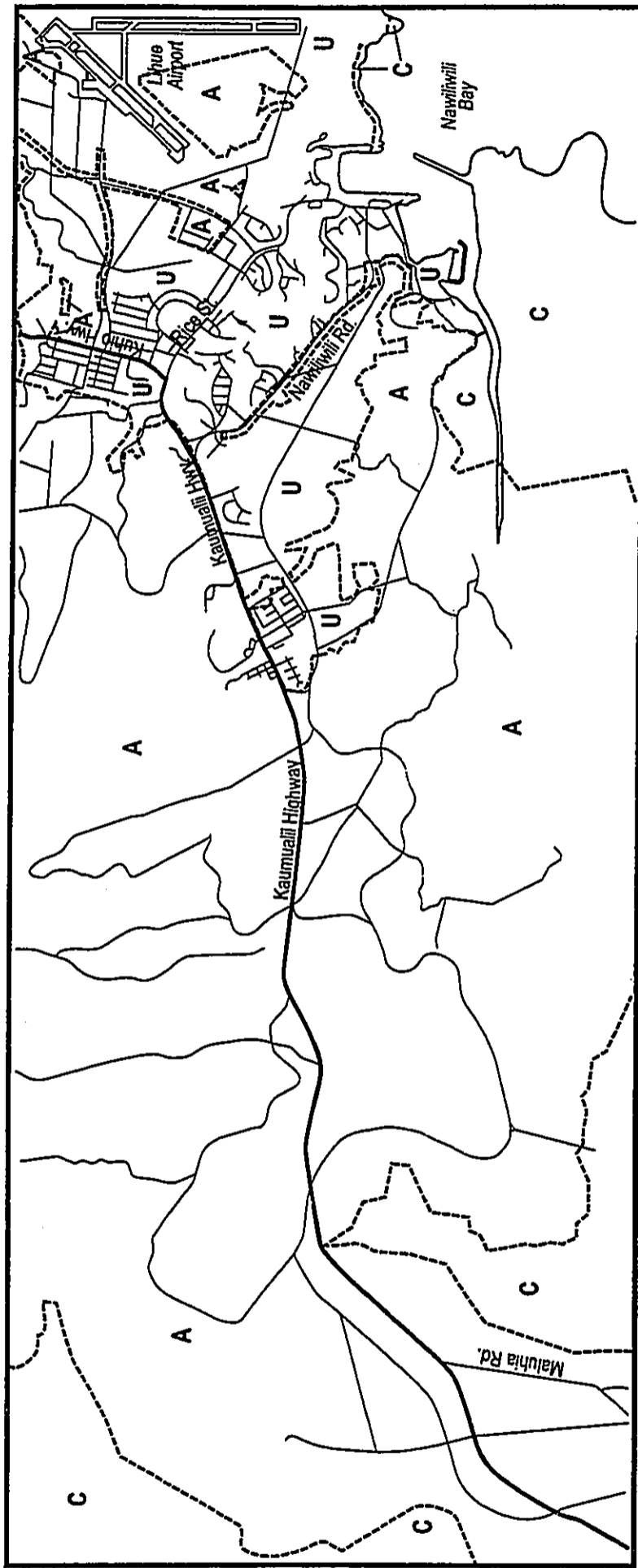
3.1.3.1b Hawaii State Land Use Controls

Chapter 205, Hawaii Revised Statutes (HRS), relating to the State Land Use Commission (SLUC), regulates land use through classification of State lands into four districts: Urban, Agriculture, Conservation and Rural. The intent of the land classification is to accommodate growth and development while retaining the natural resources of the state. Each district has specific land use objectives and development constraints.

Figure 3-2 shows the State land use districts in the study area. Urban designated lands in the study area are primarily in Lihue and Puhi. Kaunualii Highway traverses Agriculture designated lands along most of the project limits.

3.1.3.1c Coastal Zone Management Act (CZM) (Chapter 205A, HRS)

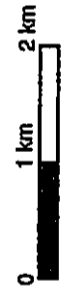
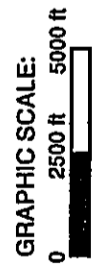
Kaunualii Highway is within the State's Coastal Zone Management (CZM) area. The objectives and policies of the Hawaii CZM Program are to protect and manage Hawaii's coastal resources. Federally assisted activities affecting Hawaii's coastal zone, such as the proposed project, must be consistent with the CZM objectives and policies.



Source: State Land Use Commission

LEGEND

- A: Agricultural
- C: Conservation
- U: Urban



State Land Use Districts
IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
FIGURE 3-2

3.1.3.1d Kauai Long-Range Land Transportation Plan

The State of Hawaii Department of Transportation (SDOT) and the County of Kauai cooperatively prepared the Kauai Long-Range Land Transportation Plan (May 1997). The Long-Range Plan guides the development of major surface transportation facilities and programs in the County, identifying short and long-range (year 2020) strategies and actions leading to an integrated intermodal transportation system. The Long-Range Plan identified improvements to Kaunualii Highway as a high-priority action because of the existing congestion along this corridor, and because future residential and employment growth is expected to occur between Waimea and Lihue. The Long-Range Plan stated that Kaunualii Highway from Koloa Road to Kuhio Highway / Rice Street (in Lihue) should be widened from its present two-lane undivided configuration to a four-lane divided configuration.

3.1.3.2 County of Kauai Plans and Controls

3.1.3.2a General Plan

In accordance with the Kauai County Charter, the General Plan establishes "policies to govern the future physical development of the County" and "guide[s] all future council action regarding land use and development regulations, urban renewal programs and expenditures for capital improvements." The first General Plan, adopted in 1971, led to the creation of the County's Comprehensive Zoning Ordinance, Subdivision Ordinance and several functional plans. An update of the General Plan was adopted in 1982, and is still the official General Plan for the County.

Goals of the General Plan relevant to the proposed project are as follows:

- To maintain the concept of Kauai as "The Garden Isle"; thus, insuring any growth be in consonance with the unique landscape and environmental character of the island.
- To insure that all physical growth is consistent with the overall ecology of the island.
- To recognize those aspects of the island and its people which are historically and culturally significant, and to maintain and enhance such aspects as a continuing expression of the island's physical and social structure.

- To manage development of social and physical infrastructure based on growth targets, priorities and efficient utilization of facilities and services.

The General Plan includes simplified land use designations (as opposed to detailed zoning designations) to serve as a flexible policy tool. The General Plan land use designations for the study area is provided in Figure 3-3.

The County is currently in the process of updating the General Plan. A Discussion Draft was completed in December 1999, and public hearings are being held to obtain comments on the General Plan update. According to the County Planning Department, the new General Plan may be adopted by the end of 2000 or early 2001 (interview held on January 13, 2000). Since the new General Plan is not yet adopted, the proposed project is using the 1982 General Plan, the current official plan, to determine project consistency.

3.1.3.2b County of Kauai Zoning

The County Planning Department administers the zoning ordinance. Most of the project area is zoned Agriculture or Open (space). The urban areas in the project area are Lihue and Puhi. Although most of Lihue is zoned "Residential up to 20 units per acre (R-20)", it does have relatively large areas zoned Commercial and Industrial. Puhi also has residential areas zoned up to R-20, and much of these areas are undeveloped. Puhi also has Commercial zoned land adjacent to Kaunualii Highway and a relatively large Industrial zoned district (Limited Use).

3.1.3.2c County of Kauai Special Management Area

Chapter 205A outlines special controls, policies and guidelines for development within the area along the shoreline designated by the 1975 Shoreline Protection Act as the Special Management Area (SMA). This Act gave the counties authority to issue permits for development activities proposed within the SMA. The proposed project is not located in the SMA.

3.2 FARMLAND

Amfac maintains active sugarcane fields on the north (mauka) side of Kaumualii Highway between Puhi and Lihue. Lihue Mill, owned and operated by Amfac, is located on the south (makai) side of Lihue Mill Bridge. A cane conveyor structure crosses Kaumualii Highway just east of Lihue Mill Bridge. The conveyor is used to transport cultivated sugarcane from the fields north (mauka) of Kaumualii Highway to the mill for processing.

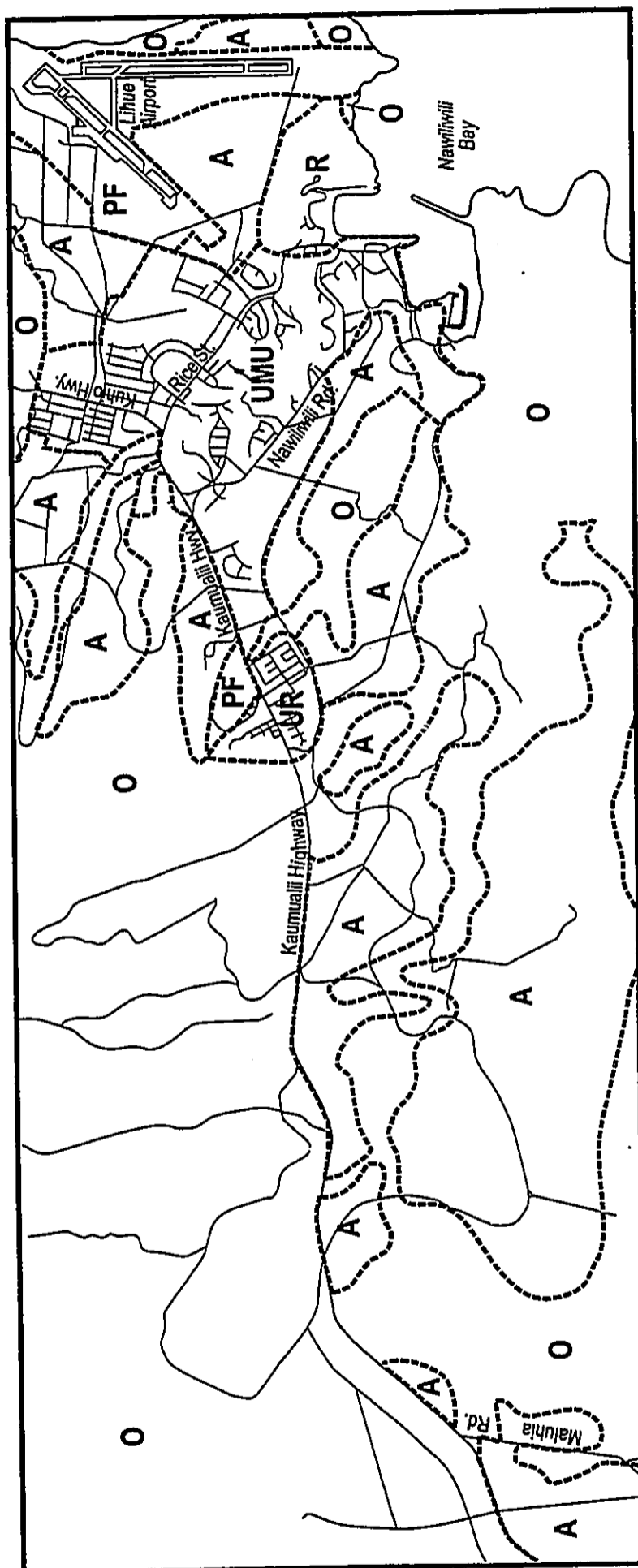
Former sugarcane lands exist from Puhi to the west end of the project. These lands are not presently used for farming, but are still zoned for agriculture.

3.3 SOCIAL AND ECONOMIC ACTIVITY

This section summarizes the demographic, housing and income characteristics of residents in the study area. For the purpose of this exercise, the study area is defined by U.S. census tracts (CTs) 404, 405 and 406 (see Figure 3-4). CT 404 covers the area from Puhi to Hanamaulu, a community located to the north of Lihue (see Figure 3-4); CT 405 encompasses Lihue; and CT 406 includes Koloa and Poipu. The information presented in this section is used to determine whether any minority and low-income population will experience disproportionately high or adverse impacts from the proposed project per the Executive Order on Environmental Justice (#12898) (see Section 4.3.4).

3.3.1 Demographic Characteristics

Table 3-1 exhibits selected demographic characteristics of the study area. In 1990, the population of the study area in the CTs listed above was 15,647, or approximately 30 percent of the County population. Table 3-1 also displays the number of households, families, ethnicity and age distributions for the study area in 1990. Filipinos, Whites, Japanese and Hawaiians comprised 31, 29, 23 and 11 percent of the overall population in the study area in 1990, respectively. Since these four racial groups made up 94 percent of the total population of the study area in 1990, the representation of other racial groups was very small. The percentages of Whites, Japanese and Hawaiians in the population of the study area are roughly the same or close to their percentages in County and State population totals. Filipinos, on the other hand,



Source: 1982 Kauai General Plan Update, 1982

LEGEND

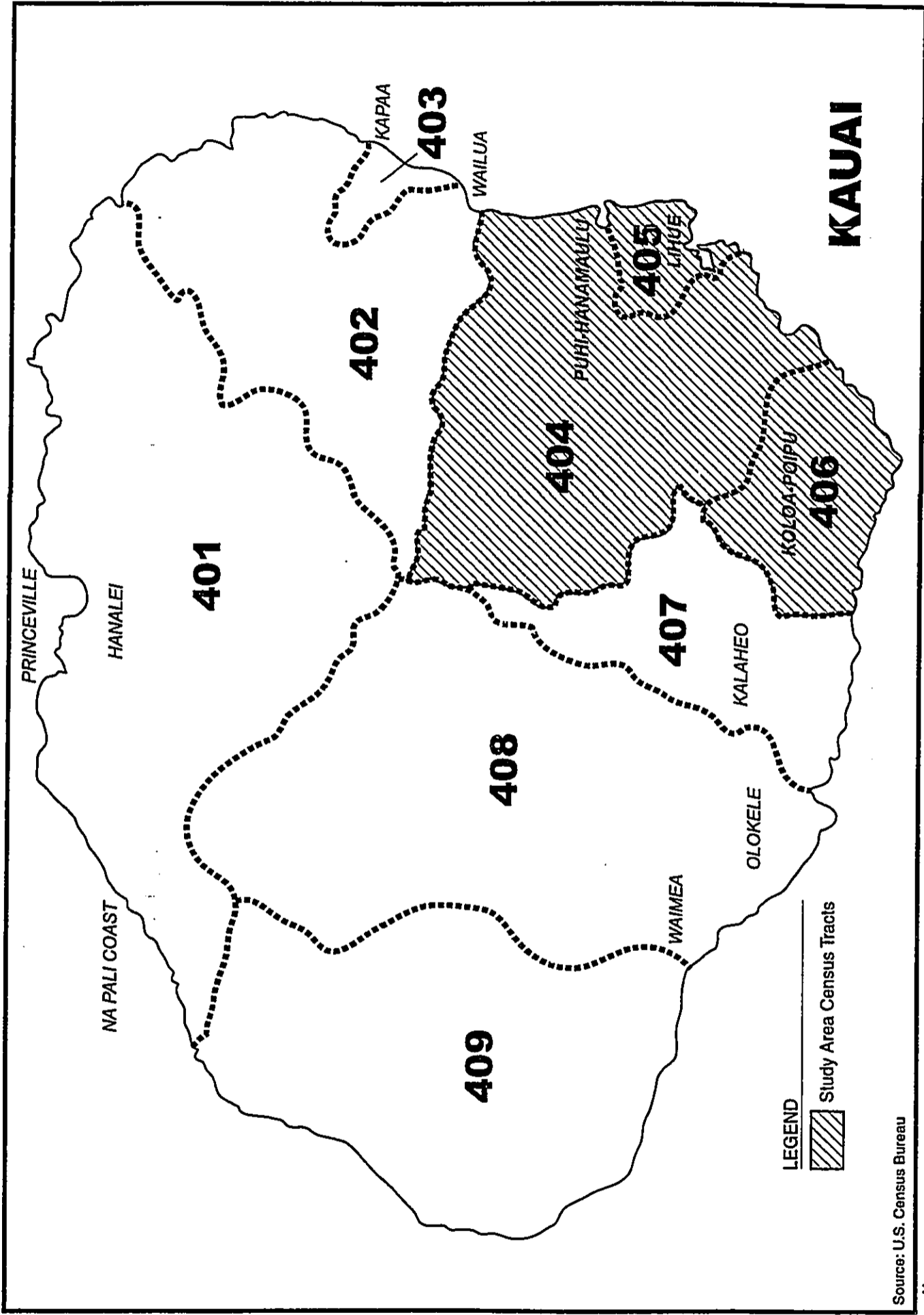
- O: Open
- A: Agricultural
- UR: Urban Residential
- URM: Urban Mixed Use
- R: Resort
- PF: Public Facility



GRAPHIC SCALE:
 0 2500 ft 5000 ft

0 1 km 2 km

**General Plan Land Use Designations
 IMPROVEMENTS TO KAUNUALII HIGHWAY**
 Final Environmental Assessment
 FIGURE 3-3



Census Tracts of Study Area
IMPROVEMENTS TO KAUMUALII HIGHWAY
Final Environmental Assessment
FIGURE 3-4

are over-represented in the study area when compared to the total County and State population totals. Between Puhi and Hanamaulu (the region surrounding Lihue), Filipinos made up the majority (55 percent) of the residents. The age distribution of residents in the study area does not appear to be substantially different from the age distribution of the County or State.

**Table 3-1
Demographic Information of Selected Areas**

	Puhi - Hanamaulu	Lihue	Koloa-Poipu	Kauai	State
	CT 404	CT 405	CT 406		
Population	5,462	5,292	4,923	51,177	1,108,229
Sex					
Males	53%	51%	51%	51%	51%
Females	47%	49%	49%	49%	49%
Households	1,392	1,983	1,683	16,326	356,748
Families	1,207	1,291	1,267	12,502	266,439
Ethnicity					
White	18%	30%	41%	35%	33%
Chinese	1%	3%	1%	2%	6%
Filipino	55%	18%	20%	26%	15%
Japanese	13%	33%	23%	20%	23%
Other Asian	0%	0%	2%	1%	3%
Hawaiian	10%	15%	10%	14%	12%
Pacific Islander	0%	0%	0%	1%	2%
Black	0%	0%	0%	0%	2%
Other Race	3%	1%	3%	3%	2%
Age					
Less than 5 years	9%	4%	7%	8%	7%
5 to 17 years	21%	16%	20%	20%	18%
18 to 34 years	28%	22%	24%	24%	29%
35 to 64 years	31%	37%	36%	35%	34%
65 or more years	11%	20%	14%	13%	11%

Note: CT = census tract

Source: U.S. Census Bureau

3.3.2 Housing Characteristics

Table 3-2 exhibits certain housing characteristics of selected areas in 1990. Overall, 77 percent of the housing units were one-unit structures, with Puhi-Hanamaulu and Koloa-Poipu having housing stocks comprised of 89 percent and 84 percent single-family units,

respectively. Lihue, as the County's largest urban area, has a more mixed housing stock that comprised of 64 percent single-family units, and 31 percent in structures containing five or more units.

**Table 3-2
Housing Information of Selected Areas**

	Puhi - Hanamaulu CT 404	Lihue CT 405	Koloa-Poipu CT 406	Kauai	State
Housing Units	1,417	2,145	1,800	17,613	389,810
Units in Structure					
1 Unit	89%	63%	84%	86%	61%
2 to 4 Units	6%	5%	4%	6%	6%
5 or More Units	2%	31%	10%	6%	32%
Mobile or Other	2%	0%	2%	2%	1%
Tenure					
Owner-Occupied	65%	53%	61%	59%	54%
Renter-Occupied	35%	47%	39%	41%	46%
Occupancy					
Occupied	97%	93%	90%	93%	91%
Vacant	3%	7%	10%	7%	9%

Note: CT = census tract

Source: U.S. Census Bureau

Overall the owner versus renter occupancy ratio for the study area was 59:41 in 1990, which is the same as the owner-renter occupancy ratio for the County. Within communities of the study area, this ratio varied from 65:35 in Puhi-Hanamaulu to 53:47 in Lihue. The overall occupancy rate of the study area is not much different than occupancy rates for the County or State. However, within particular areas it varied, such as a 97:3 ratio in Puhi-Hanamaulu to 90:10 ratio in Koloa-Poipu. The relatively high number of visitor accommodation units in Koloa-Poipu could explain this difference.

3.3.3 Income and Employment Characteristics

Table 3-3 exhibits certain income characteristics for selected areas in 1990. Median household incomes in the study area were higher than the median income for the County, which was \$37,425 in 1989. Incomes varied from a low of \$38,942 in Koloa-Poipu to a high of \$41,169 in Lihue. The poverty rates of residents in the study area were lower than the rate for

the County or State, ranging from a low of five percent in Lihue to seven percent in both Puhimau and Koloa-Poipu.

**Table 3-3
Income Information of Selected Areas**

	Puhi - Hanamaulu	Lihue	Koloa-Poipu	Kauai	State
	CT 404	CT 405	CT 406		
Median Household Income	\$40,739	\$41,169	\$38,942	\$37,425	\$38,829
Selected Sources of Income (Percent of Households)					
Social Security	34%	34%	29%	30%	25%
Retirement	24%	26%	22%	20%	20%
Public Assistance	13%	5%	4%	7%	7%
Households Below Poverty Level	7%	5%	7%	8%	8%

Note: CT = census tract

Source: U.S. Census Bureau

From 1987 to 1997, the unemployment rate for Kauai County ranged from 2.8 percent in 1989 to 14.3 percent in 1994. Within the period from 1992 to 1997, the unemployment rate was no less than 10.3 percent, which occurred in 1992 the year that Hurricane Iniki struck the island causing catastrophic damage to the hotels and the visitor industry. The year before Hurricane Iniki, the unemployment rate was 4.1 percent.

3.3.4 Economic Characteristics

Kauai's most important industry is tourism. The island features some of the State's most spectacular and scenic areas, such as the Na Pali Coast and Waimea Canyon. The year following Hurricane Iniki, the island attracted 571,800 visitors. Since then, the number of visitors per year has steadily increased, and in 1998, Kauai attracted 1,038,800 visitors, close to the pre-Hurricane Iniki annual visitor counts. In 1998, there were approximately 17,200 visitors on Kauai per day, which is about 30 percent of the resident population. About 42 percent of all jobs on Kauai are directly or indirectly related to the visitor industry. Visitor accommodation areas on Kauai are located in Princeville on the north end of the island; Kapaa-Wailua on the east end of the island; Lihue; and Poipu-Kalaheo on the south end of the

island. Kapaa-Wailua and Poipu-Kalaheo contain 30 percent and 34 percent of the island's hotel units, respectively.

Agriculture was once Kauai's principal industry, but because of the difficulties faced by the State's sugarcane and pineapple industries in the past few years, the role of the agricultural industry in the County's economy is relatively small. In 1998, the County estimated that agricultural jobs made up only 3.2 percent of the total jobs, despite the fact that 140,800 acres, or about 40 percent, of the island's land area is classified as Agriculture by the State. The County is developing diversified agriculture to replace sugarcane and pineapple cultivation with some success. Between 1990 and 1997, sales of diversified agricultural crops have more than quadrupled from \$6.8 million to \$30.6 million. The fallow agricultural lands on the west end of the project area may be used for diversified agriculture.

Kauai's high technology industry is dominated by the Pacific Missile Range Facility, located on the west side of the island, approximately 40 km (25 miles) from the west end of the proposed project. The facility is one of the of the largest employers on the island, with a total workforce of approximately 870, with 360 of these in high technology fields.

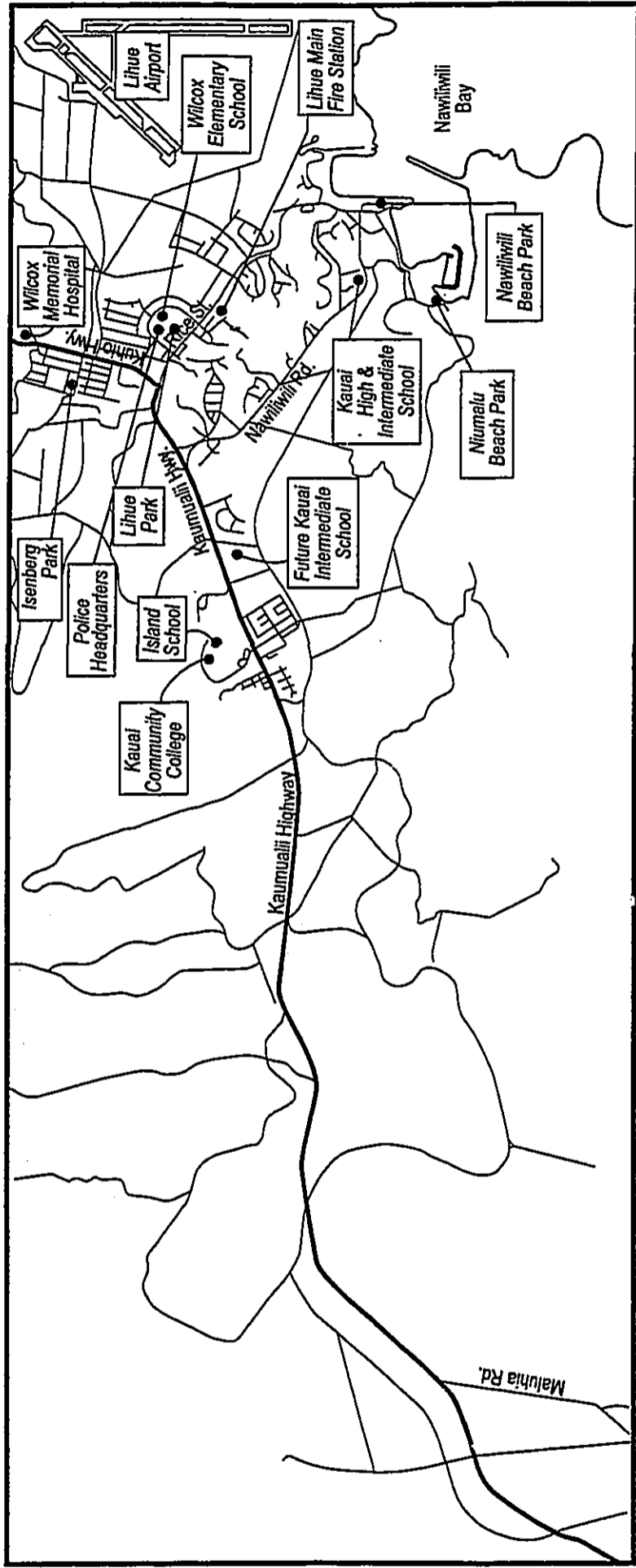
3.3.5 Public Facilities and Services

The locations of public facilities in the vicinity of the project are shown on Figure 3-5.

Police patrols in the study area operate out of the main police headquarters in Lihue (see Figure 3-5). The main fire station is also located in Lihue, and another fire station is in Koloa (see Figure 3-5).

The schools in the project area include Wilcox Elementary School in Lihue, Kauai High and Intermediate School in Nawiliwili, King Kaumualii Elementary School in Hanamaulu, and Kauai Community College and Island School in Puhi (see Figure 3-5). An intermediate school is under construction near Kaumualii Highway just east of Puhi.

The hospitals in the general vicinity of the project area include Wilcox Memorial Hospital in Lihue, and West Kauai Medical Center in Waimea (see Figure 3-5). Wilcox Memorial Hospital provides full surgical and support services. Its emergency center provides comprehensive emergency treatment 24 hours a day, seven days a week. West Kauai Medical Center



Not Shown: Koloa Fire Station, King Kaunualii Elementary School, West Kauai Medical Center, Hanamaulu Beach Park
 Source: Parsons Brinckerhoff Quade & Douglas, Inc.



GRAPHIC SCALE:



**Public Facilities and Services
 IMPROVEMENTS TO KAUMUALII HIGHWAY**
 Final Environmental Assessment
FIGURE 3-5

provides emergency, maternity, surgical, intensive care, long-term care, coronary care and rehabilitation services.

There are no parks or recreational resources adjacent to Kaumualii Highway within the project limits. The nearest parks are in Lihue and Nawiliwili, which include Lihue Park, Isenberg Park, Nawiliwili Beach Park, Niumalu Beach Park, Hanamaulu Park and Hanamaulu Beach Park (see Figure 3-5). A park is currently being planned south (makai) of Kaumualii Highway, just west of Nuhou Street.

3.4 INFRASTRUCTURE

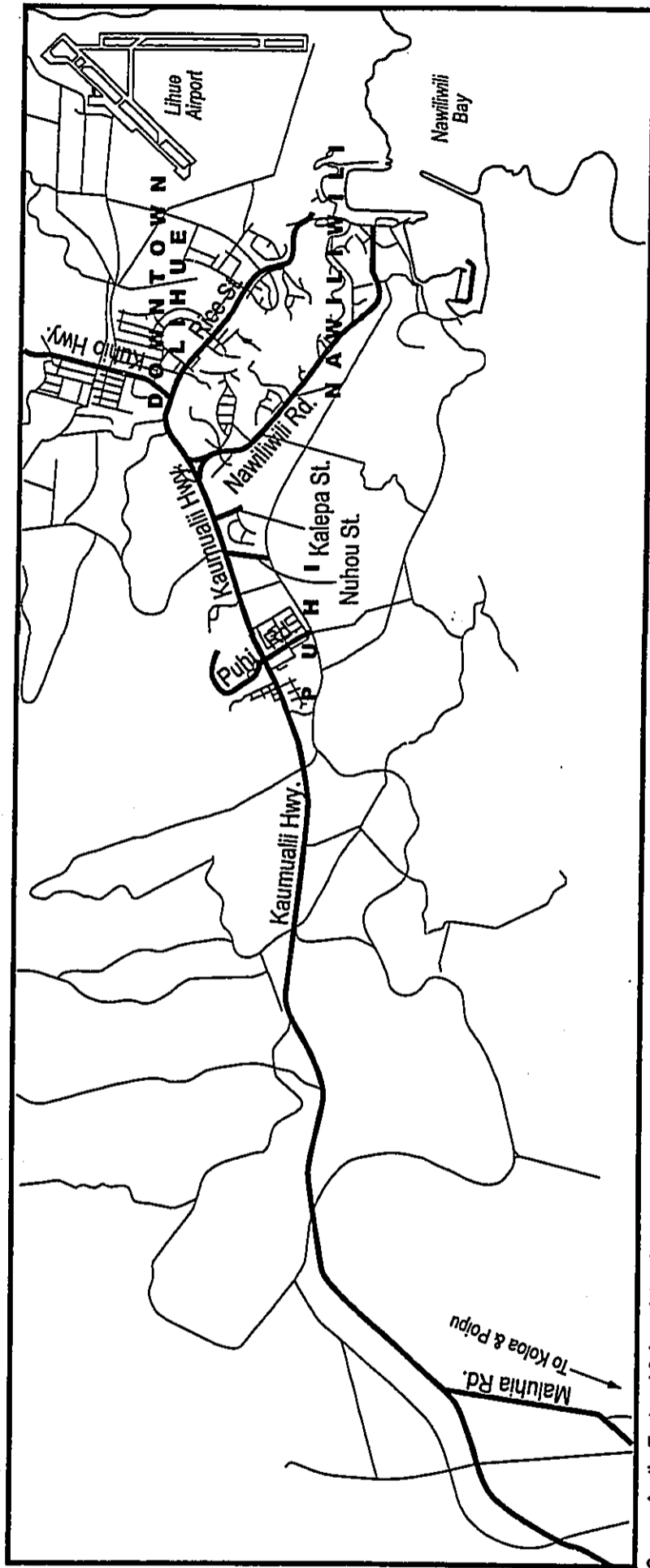
3.4.1 Transportation

3.4.1.1 Roadway System

Major roadways in the project area are shown on Figure 3-6.

Kaumualii Highway is a major State primary arterial, designated Route 50, running east-west between Lihue and west Kauai, a distance of approximately 55 km (35 miles). The highway is the primary, or in some areas, the only access route for the communities between Lihue and Barking Sands, which include Poipu, Koloa, Lawai, Eleele, Port Allen, Hanapepe, Kalaheo, Waimea, and Kekaha. Kaumualii Highway links with Kauai's other major highway, Kuhio Highway (State Route 56) in Lihue. Kuhio Highway is the primary arterial roadway serving east and north Kauai. Kaumualii Highway also links with Rice Street, a major County collector in downtown Lihue.

The major cross streets along Kaumualii Highway within the project limits include Nawiliwili Road, Kalepa Street, Nuhou Street, Puhi Road, and Maluhia Road. Nawiliwili Road is a State arterial running between Kaumualii Highway and Nawiliwili Bay. It is a four-lane divided roadway at Kaumualii Highway, but most of this facility is a two-lane roadway. Nawiliwili Road services residential communities in south Lihue, Nawiliwili, and Kukui Grove Shopping Center. Kalepa Street is a four-lane undivided County collector that services a small residential community to the west of Kukui Grove Shopping Center, as well as the shopping center. Nuhou Street is a two-lane County collector that was recently constructed to serve the future



Source: Auslin, Tsutsumi & Associates, Inc.



GRAPHIC SCALE:
 0 2500 ft 5000 ft

0 1 km 2 km

Major Roadways
IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
FIGURE 3-6

Kauai Intermediate School, and planned commercial development. Puhi Road is a County collector that services the Puhi community to the south (makai) of Kaumualii Highway, and Kauai Community College to the north (mauka) of Kaumualii Highway. Maluhia Road is a two-lane County arterial providing access to the Koloa and Poipu communities. Maluhia Road is known as the "tree tunnel" road because of the trees that line both sides of the road starting at the intersection with Kaumualii Highway.

3.4.1.2 Bicycle and Pedestrian Facilities

Kaumualii Highway is presently designated a bike route from Lihue to Knudsen Gap, although the highway has no bike lanes. The highway shoulders can be used for cycling. Bike Plan Hawaii: A State of Hawaii Master Plan (April 1994), prepared by the SDOT, recommended that Kaumualii Highway be made into a bike route. As described above, a portion of Kaumualii Highway has been designated a bike route since the Bike Plan was completed. A bike route is any street or highway designated for shared use of bicycles and motor vehicles or pedestrians or both.

Because of its rural environment, existing pedestrian facilities in the study area are limited to some of the residential neighborhoods.

3.4.1.3 Transit Services

The County Transportation Agency, an agency under the Office of the Mayor, provides regular route and para-transit services. The regular-route bus services the entire island from Kekaha on the southwestern end to Hanalei on the north side. The bus route uses Kaumualii Highway to service the communities between Kekaha and Lihue. Headways are between a half-an-hour to two hours, and service is from 5:30 a.m. to 7:00 p.m. Para-transit provides door-to-door service for qualified individuals, such as seniors, human service agency participants, and those certified and registered as eligible for ADA (Americans with Disabilities Act) service. The buses used for the regular routes are relatively small with capacities of about 15 to 26 persons.

3.4.1.4 Highway Safety

Relatively few vehicle incidents occur on Kaumualii Highway (see Appendix C). The number of vehicle incidents on Kaumualii Highway between the zero and 11 km (7 mile) marker, roughly

the segment between Lihue and Maluhia Road, ranged from a low of 13 to a high of 32 in the five years from 1995 to 1999. As a comparison, the number of vehicle incidents on Kuhio Highway between the zero (intersection with Kaumualii Highway) and 16 km (10 mile) marker ranged from a low of 300 to a high of 333 during the same five years. Based on these incident statistics, Kaumualii Highway appears to be a relatively safe highway despite its high volumes, undivided configuration and deficient sight distances.

3.4.2 Drainage

Stormwater sheet flows off of the roadway and onto adjacent areas. To prevent ponding on and along the roadway, drainage structures pass under Kaumualii Highway at several locations to convey stormwater downslope, from the north (mauka) side to the south (makai) side of the highway. Stormwater on the bridges and culverts is collected in drainage inlets and discharged into the streams and irrigation ditches.

3.4.3 Utilities

The right-of-way of Kaumualii Highway is used for overhead electrical and telephone lines. Water transmission lines are also within the right-of-way from Lihue to just west of Puhi. The County sewer system in Lihue does not extend into or along Kaumualii Highway. The wastewater system for Puhi is owned and operated by Grove Farm, and is located south (makai) of Kaumualii Highway. Kauai Community College operates its own wastewater treatment system. Treated wastewater from the College is discharged via an existing 20 cm (8-inch) sewer line that crosses Kaumualii Highway to Klussman Reservoir.

3.5 CLIMATE AND AIR QUALITY

3.5.1 Local Meteorology

The climate of Hawaii is relatively moderate throughout most of the State, although some differences in certain meteorological parameters may occur from one region to another. Most of these differences are caused by the islands' mountainous topography.

Hawaii lies well within the belt of northeasterly trade winds generated by the semi-permanent Pacific high pressure cell to the north and east of the islands. Long-term wind data collected at Lihue Airport, which is located about 6 km (4 miles) to the east of the project area, indicates that the northeast wind direction prevails throughout the year with a mean annual wind speed of 20 km/h (12.3 mph). Winds from the south are infrequent, occurring only a few days during the year and mostly in winter in association with Kona storms. Kauai has equable temperatures from day to day and season to season, with marked variation in rainfall from the wet to the dry season and from place to place.

At Lihue Airport, average annual daily minimum and maximum temperatures are 20 C (68°F) and 27 C (81°F), respectively. The extreme minimum temperature on record is 10 C (50°F), and the extreme maximum is 32 C (90°F).

Rainfall on Kauai is highly variable depending on elevation and location with respect to the trade winds. The Lihue area has a moderately wet climate. Normal annual rainfall at Lihue Airport is about 108 cm (43 inches). Three-fourths of this total on average occurs from October to April. Widespread rainstorms, which account for much of the precipitation, occur most frequently during this period.

3.5.2 Ambient Air Quality Standards

As required by the Clean Air Act, National Ambient Air Quality Standards (AAQS) were established by the U.S. Environmental Protection Agency (USEPA) 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. Current standards for ozone and PM_{2.5} were established in September 1997. The State of Hawaii has also established its own standards for these pollutants. Both the National and State AAQS are listed in Table 3-4. The State AAQS are considerably more stringent than the National AAQS for certain pollutants.

3.5.3 Attainment Status of Study Area

Section 107 of the 1977 Clean Air Act Amendments requires the USEPA to publish a list of geographic areas that are not in compliance with the National AAQS, and these areas called

non-attainment areas. Areas that have insufficient data to make a determination are unclassified, and are treated as attainment areas until proven otherwise. The designation of an area is made on a pollutant-by-pollutant basis.

The State of Hawaii is designated as an attainment area for all of the applicable pollutants.

**Table 3-4
National and State Ambient Air Quality Standards**

Pollutant	Standard		
	Hawaii State	Federal Primary	Federal Secondary
Carbon Monoxide (CO)			
1 Hour	10 mg/m ³ (9 ppm)	40 mg/m ³ (35 ppm)	40 mg/m ³ (35 ppm)
8 Hour	5 mg/m ³ (4.5 ppm)	10 mg/m ³ (9 ppm)	10 mg/m ³ (9 ppm)
Nitrogen Dioxide (NO₂)			
Annual Arithmetic Mean	70 ug/m ³	100 ug/m ³ (0.053 ppm)	100 ug/m ³ (0.053 ppm)
Particulate Matter < 10 micrometers (PM₁₀)			
24 Hour	150 ug/m ³	150 ug/m ³	150 ug/m ³
Annual Arithmetic Mean	50 ug/m ³	50 ug/m ³	50 ug/m ³
Particulate Matter < 2.5 micrometers (PM_{2.5})			
24 Hour	--	65 ug/m ³	65 ug/m ³
Annual Arithmetic Mean	--	15 ug/m ³	15 ug/m ³
Ozone (O₃)			
1 Hour	100 ug/m ³	235 ug/m ³ (0.12 ppm)	235 ug/m ³ (0.12 ppm)
8 Hour	--	157 ug/m ³ (0.08 ppm)	157 ug/m ³ (0.08 ppm)
Sulfur Dioxide (SO₂)			
3 Hour	1300 ug/m ³	--	1300 ug/m ³ (0.5 ppm)
24 Hour	365 ug/m ³	365 ug/m ³ (0.14 ppm)	--
Annual Arithmetic Mean	80 ug/m ³	80 ug/m ³ (0.03 ppm)	--
Lead (Pb)			
Quarterly Average	1.5 ug/m ³	1.5 ug/m ³	1.5 ug/m ³

Source: State of Hawaii, Department of Health, Clean Air Branch.
USEPA National AAQS, Updated July 1997.

3.5.4 Present Air Quality

The present air quality in the project area is mostly affected by air pollutants from vehicular, industrial, natural and/or agricultural sources. Table 3-5 presents an air pollutant emission summary for the island of Kauai for calendar year 1993. The emission rates shown on this table pertain to manmade emissions only, i.e., emissions from natural sources are not included. Much of the PM emissions on Kauai originate from area sources, such as agricultural activities. SO_x are emitted almost exclusively from point sources such as power plants and other fuel-

burning industries. NO_x emissions emanate predominantly from area sources (mostly motor vehicle traffic), but industrial point sources also contribute a substantial share. The majority of CO emissions occur from area sources (motor vehicle traffic), while hydrocarbons are emitted mainly from point sources.

**Table 3-5
Air Pollution Emissions Inventory for the Island of Kauai, 1993**

Air Pollutant	Point Sources (tons/year)	Area Sources (tons/year)	Total (tons/year)
Particulate	614	4,817	5,431
Sulfur Oxides	703	nil	703
Nitrogen Oxides	4,072	7,054	11,126
Carbon Monoxide	2,315	11,974	14,289
Hydrocarbons	859	224	1,083

Source: J.L. Shoemaker & Associates, Inc for the State of Hawaii Department of Health, Final Report, Review, Revise and Update of the Hawaii Emissions Inventory Systems for the State of Hawaii, 1996

The State of Hawaii Department of Health (SDOH) operates a network of air quality monitoring stations at various locations around the State. Each station, however, typically does not monitor the full complement of air quality parameters. The SDOH monitoring station closest to the project area is located at Lihue. PM₁₀ is the only pollutant monitored at this location, a pollutant not relevant to the proposed project.

Although very little ambient air quality data are available to characterize existing conditions, due to the relatively small number of emission sources in the project area, it is likely that all National and State AAQS are currently being met except perhaps for some areas near agricultural sources or locations affected by traffic congestion. In summary, the air quality in the project area is relatively good.

3.6 NOISE

3.6.1 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 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.

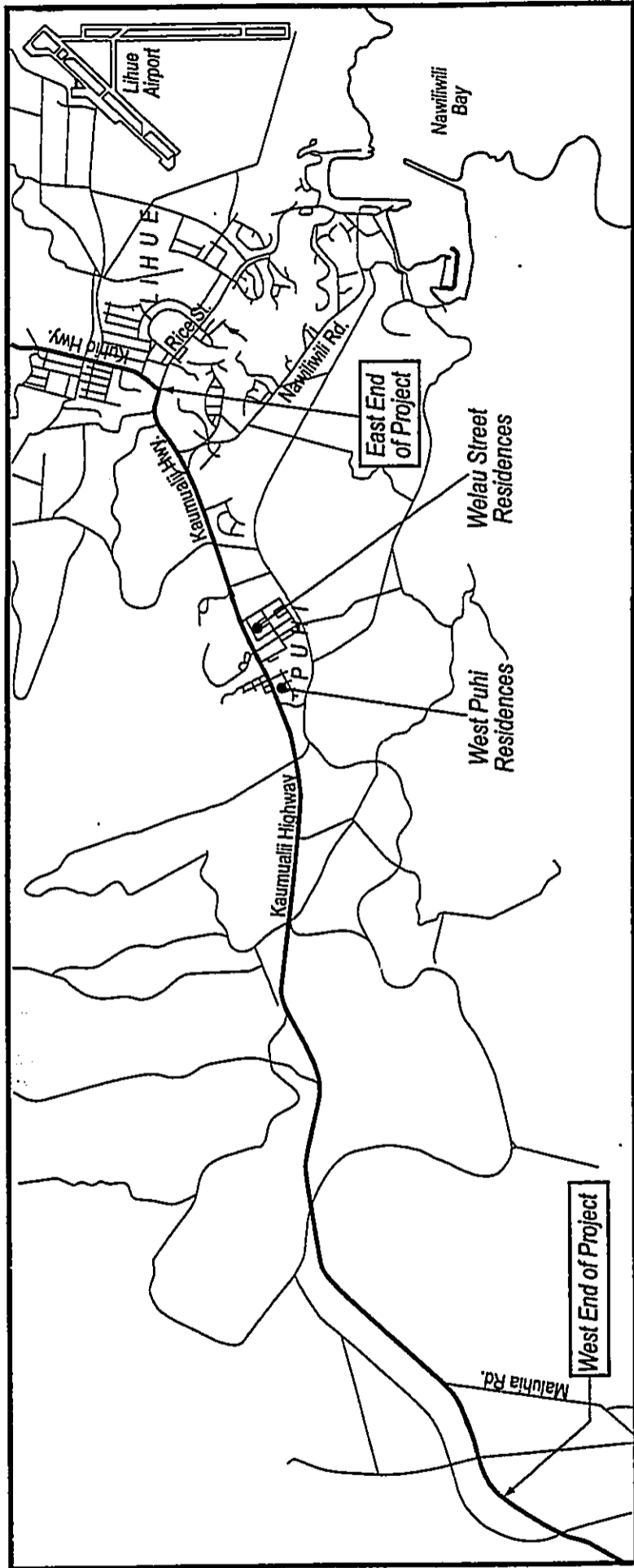
Since dBA describes a noise level at just one moment, and very few noises are constant, ways of describing noise over extended periods are needed. One way is describing fluctuating noise heard over a period as if it were a steady, unchanging sound. This type of an average is called the equivalent sound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

3.6.2 Noise Abatement Criteria

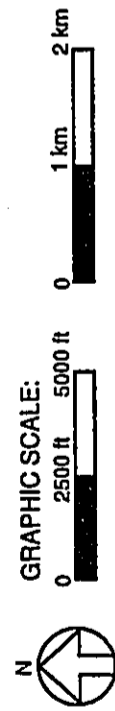
The Federal Highway Administration (FHWA) has developed Noise Abatement Criteria (NAC), which were adopted by the State of Hawaii (see Table 3-6). According to the SDOT's Noise Analysis and Abatement Policy (Noise Policy), a noise impact would occur when predicted traffic noise levels approach or exceed the NAC, or when predicted traffic noise levels substantially exceed the existing noise levels.

3.6.3 Measurements and Existing Conditions

Field measurements of existing noise levels were taken on February 1 and 2, 2000 at two sites, as shown on Figure 3-7. These sites are located in Puhi, and are considered to be noise sensitive receptors in accordance with the NAC (Activity Category B). The first receptor is a group of ten houses along Welau Street, which is parallel to Kaumualii Highway. These houses are set-back approximately 70 m (230 feet) from the highway. The second receptor is a small group of single-family and low-density multi-family residences on the west side of Anonui Street



Source: Parsons Brinckerhoff Quade & Douglas, Inc.



Noise Monitoring Locations
IMPROVEMENTS TO KAUMUALII HIGHWAY
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FIGURE 3-7

near Kaunualii Highway. The house nearest to Kaunualii Highway is set-back approximately 25 m (80 feet). The results of the field measurements at both receptor sites are provided on Table 3-7. It should be noted that although the measured noise levels indicated on Table 3-7 exceed the NAC for Activity Category B, the monitoring was not done from the residences, the locations at which the NAC apply.

**Table 3-6
FHWA Noise Abatement Criteria (NAC)**

Activity Category	L_{eq}(h) 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.

Notes: Interior noise level standards apply to:

1. Indoor activities for those parcels where no exterior noise sensitive land use or activities have been identified; and
2. Situations where the exterior activities are either remote from the highway or shielded so that while the exterior activities remain undisturbed, noise nevertheless affects interior activities.

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

**Table 3-7
Existing Noise Measurements**

Sensitive Receptor¹	Start Time/Date	Measured L_{eq}	Duration of Measurement
Welau Street Residences	7:00 a.m./Feb. 2	69	60 minutes
	4:00 p.m./Feb. 1	70	60 minutes
West Puhi Residences	7:00 a.m./Feb. 2	69	60 minutes
	4:00 p.m./Feb. 1	68	60 minutes

Notes: ¹ Monitoring for both sites was conducted approximately 8 m (25 feet) from the existing Kaunualii Highway right-of-way.

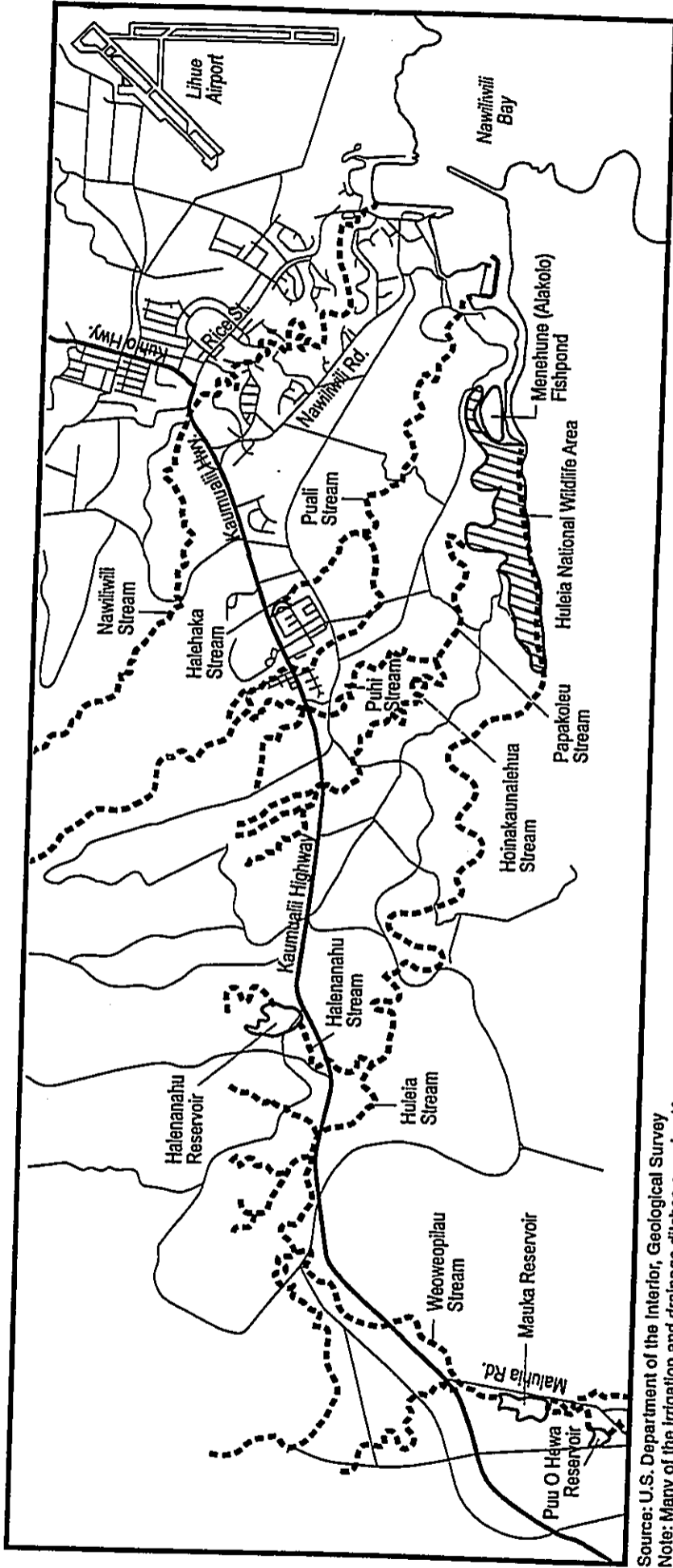
Source: D.L. Adams Associates, Ltd., February 2000.

3.7 WATER RESOURCES

3.7.1 Surface Waters

Several streams and other surface water bodies cross Kaunualii Highway. The majority of these are drainage and irrigation ditches associated with present and past agricultural activities. These waterways cross Kaunualii Highway either in culverts or pipes. Figure 3-8 displays the natural streams that cross Kaunualii Highway within the project limits. Those that are part of the natural system are considered to be waters of the U.S., and subject to regulation under Section 404 of the Clean Water Act. Although most of these streams are perennial, none are navigable. Also, some of the water in these streams is currently or has been diverted into ditches for irrigation.

In Lihue, Nawiliwili Stream crosses Kaunualii Highway beneath the 120 m (390 ft) long Lihue Mill Bridge, which is adjacent to Lihue Mill. In Puhi, a tributary of Puali Stream intersects Kaunualii Highway adjacent to the Grove Farm office building through a parabolic culvert. This tributary connects two reservoirs, but appears to be part of a natural stream system. To the west of Puhi, Papakolea Stream is fed by two tributaries (Hainakaunalehua and Puhi) that intersect Kaunualii Highway. Puhi Stream has two forks that cross the highway. The western fork is well drained due to a large 3.7 m by 3.7 m (12 feet by 12 feet) culvert. The east fork, which is associated with one of the wetlands described in Section 3.7.3, is not well drained, probably due to its small culvert beneath the highway.



Source: U.S. Department of the Interior, Geological Survey
 Note: Many of the irrigation and drainage ditches crossing Kaunuauii Highway are not shown

LEGEND

----- Streams and Major Irrigation Ditches



GRAPHIC SCALE:
 0 2500 ft 5000 ft

0 1 km 2 km

**Surface Water Resources
 IMPROVEMENTS TO KAUNUAUII HIGHWAY**
 Final Environmental Assessment
FIGURE 3-8

Huleia Stream crosses Kaumualii Highway approximately 5 km (3 miles) west of Puhi beneath the 130 m (430 ft) long Huleia Bridge, and is fed by three tributaries upstream (north (mauka)) of the highway. Downstream (south (makai)) from the highway, Huleia Stream is fed by a fourth tributary, Halenanahu Stream, which crosses the highway via double box culverts. Water flow in Halenanahu Stream is controlled at Halenanahu Reservoir, located approximately 100 m (330 feet) north of the highway (see Figure 3-8). The streams from Nawiliwili to Huleia empty into Nawiliwili Bay via the lower reach of Huleia River, which passes through the Huleia National Wildlife Refuge (NWR), which is one of three NWRs on Kauai (see Figure 3-8). Huleia NWR is approximately 98 ha (241 acres) in size, and is adjacent to Menehune (Alakoko) Fishpond, a registered National Historic Landmark. Thirty-one species of birds, including the endangered waterbirds described in Section 3.8.3, can be found in Huleia NWR. Habitat for the endangered Hawaiian Hoary Bat (*Lasiurus cinereus semotus*) may also be in this area (see Section 3.8.3).

Just west of Knudsen Gap, Weoweopilau Stream crosses the highway through a box culvert. Unlike other streams in the project area, Weoweopilau flows south (makai) to north (mauka) and eventually empties into Huleia Stream. Irrigation ditches located near Maluhia Road cross Kaumualii Highway via box culverts and flow directly to Mauka Reservoir, which is located near Maluhia Road approximately 400 m (1300 feet) south of the highway (see Figure 3-8). A pond, approximately 500 m² (5400 square feet) in size and estimated to be 0.9 to 1.2 m (3 to 4 feet) deep, is located adjacent to the irrigation ditch nearest to Maluhia Road, and is only a few meters from Kaumualii Highway. A berm prevents water from the irrigation ditch from flowing into the pond. The water source of this pond could not be located, but is most likely from the nearby ditch. Since the pond appears to be man-made (i.e., if not for the ditch, which is man-made, the pond would not be in existence), and is not considered to be part of a wetland (see Section 3.7.3), it is not considered to be waters of the U.S.

According to a biological assessment prepared for this project (see Appendix H), the streams described above are degraded both physically and biologically. With the exception of Huleia Stream, all the streams had little or no water flowing in their natural channels, and exhibited excessive sedimentation and bank erosion. Most were also so overgrown with invasive vegetation that the stream channels were not visible from the highway. Huleia Stream has the highest quality among all the streams, yet was rated as exhibiting "very poor" biotic conditions.

3.7.2 Groundwater

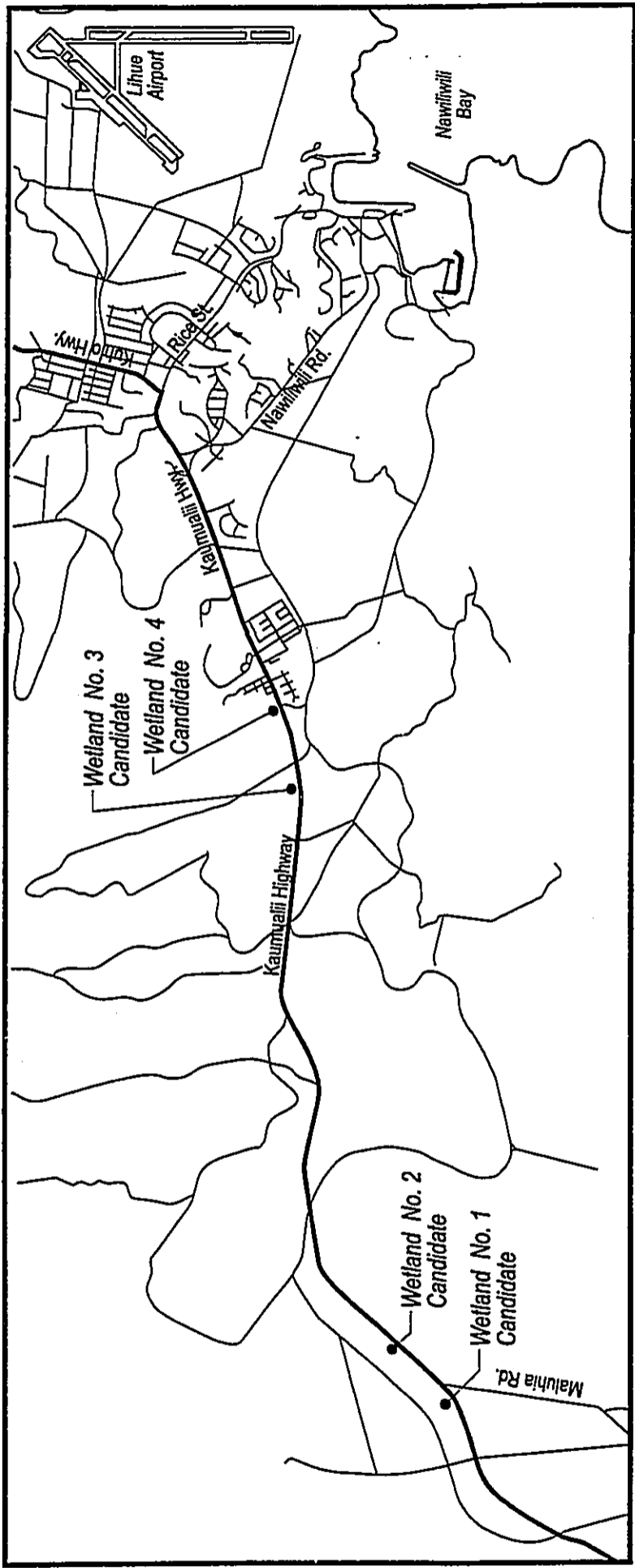
There is no USEPA-designated principal or sole-source aquifer in the project area. Several borings taken within the project limits encountered groundwater at about 1.4 m (4.5 ft) to 8.6 m (28.3 ft) below the existing ground surface. Only those borings near streams encountered groundwater. The State Department of Land and Natural Resources, Commission on Water Resource Management stated in a letter dated September 30, 1998 (see Appendix A) that the Haupū Range may contain dike structures.

3.7.3 Wetlands

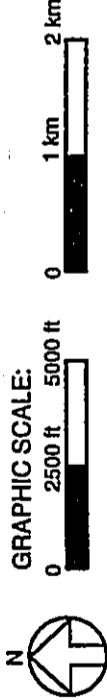
A preliminary assessment of the study area identified four potential wetlands (see Figure 3-9). According to the U.S. Army Corps of Engineers (USACE) wetland delineation manual, a wetland is "those areas that are inundated or saturated by surface or groundwater at a frequency and duration to support, and that under natural circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." The wetland definition was codified by USACE and the USEPA as exhibiting hydric soil, water and vegetation indicators.

The USACE Civil Works Branch conducted field surveys to determine whether those potential wetlands shown on Figure 3-9 are in fact wetlands per federal regulations (see Appendix F). The survey indicated that wetlands #1 and #3 (see Figure 3-9) are not wetlands because they fail to meet all of the regulatory parameters needed to be considered a wetland. (In the following discussion these areas will be referred to as wetlands #1 and #3 despite these areas not being wetlands.) Wetland #1, which contains the pond described in Section 3.7.1, lacks hydric soils, is dominated by upland vegetation, and has infrequent flow. It is, therefore, exempt from regulation under Section 404 of the Clean Water Act. USACE also found no evidence of wetland indicators at the wetland #3 area, which is at or near Hainakaunalehua Stream. The stream is at the bottom of a very steep 12 m (40 feet) gully with mango and java plum trees at the top edge.

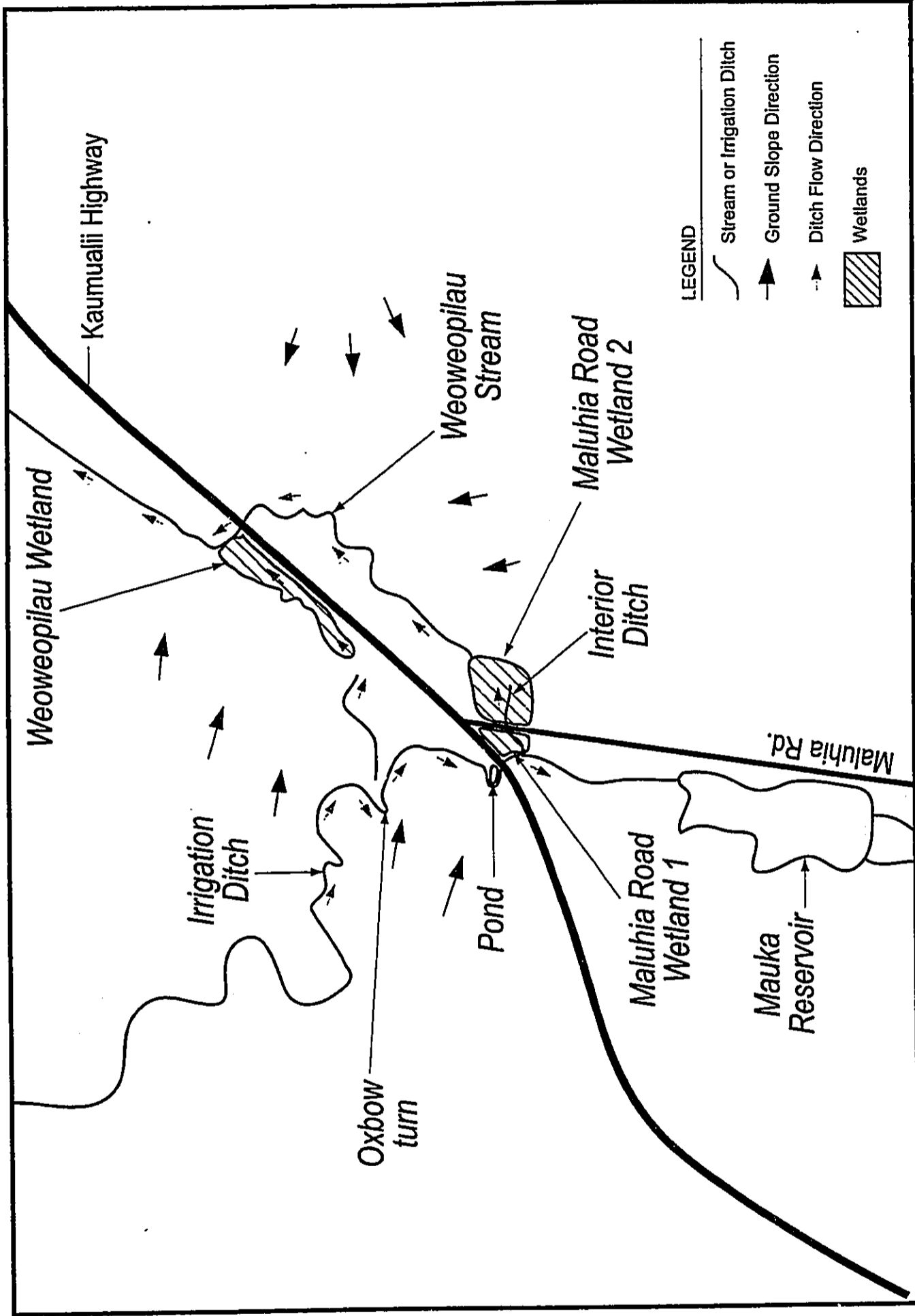
Although USACE Civil Works Branch did not consider wetland #1 a true wetland, they did identify two wetlands on the south (makai) side of Kaumualii Highway (to be called Maluhia Road Wetlands 1 and 2 in this Final EA) (see Figure 3-10). A water control structure in the



Source: ParEn, Inc.



Suspected Wetland Areas
IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
FIGURE 3-9



Source: U.S. Army Corps of Engineers
 Drainage Patterns near Maluhia Road Wetlands and Weoweopilau Wetland
 IMPROVEMENTS TO KAUNUALII HIGHWAY
 Final Environmental Assessment
 FIGURE 3-10

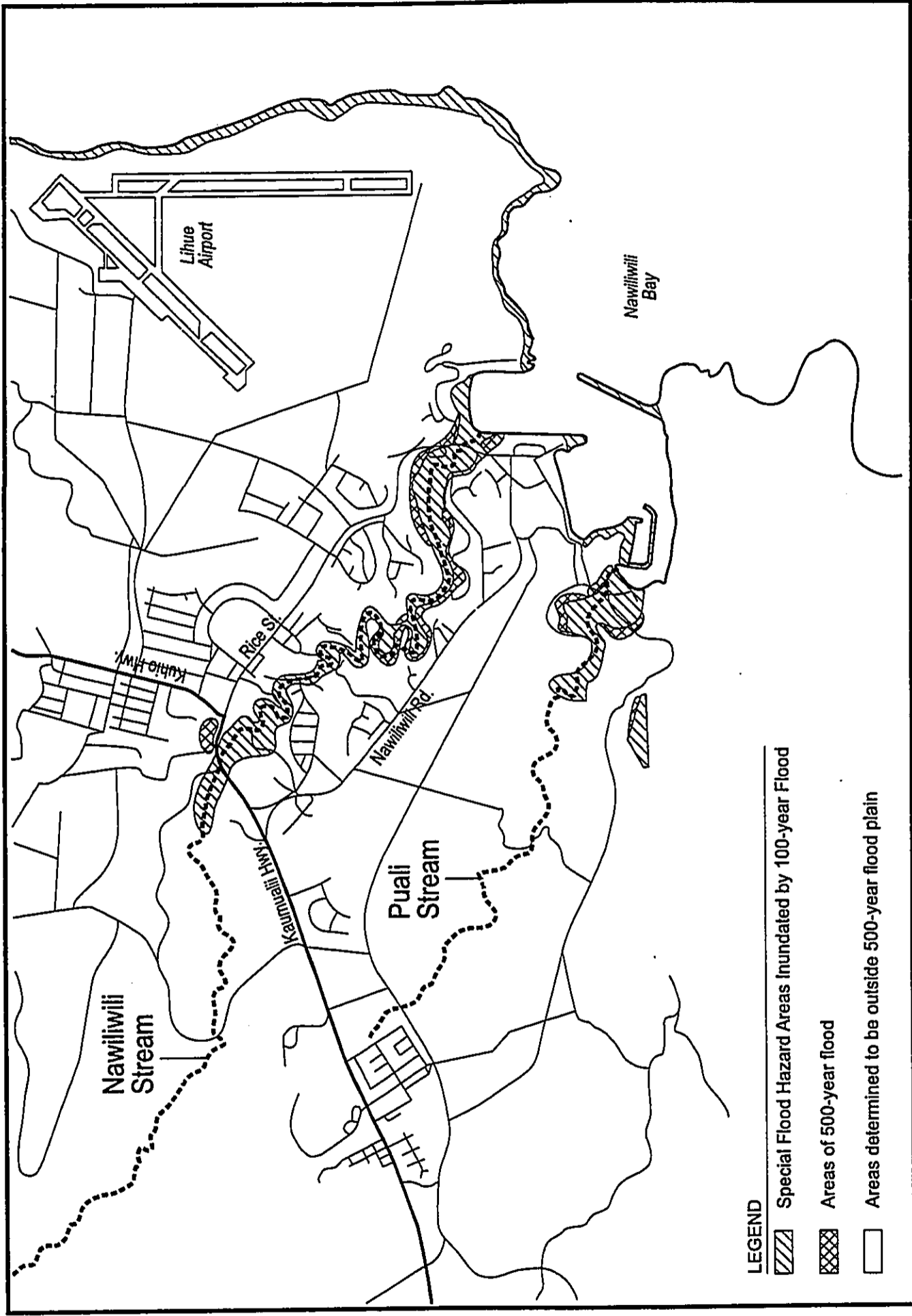
irrigation ditch on the western side of Maluhia Road Wetland 1 shunts water through an interior ditch in the wetland, which eventually flows to Maluhia Road Wetland 2. The interior ditch is the low part of the wetland, and the USACE Civil Works Branch was not able to ascertain the hydrology source for the wetland outside the interior ditch. Maluhia Road Wetlands 1 and 2 exhibit all three hydric parameters and are considered jurisdictional wetlands.




The location of wetland #2 (to be called Weoweopilau Wetland in this Final EA) is shown on Figure 3-10. Weoweopilau Wetland is located in a ravine that gets wider from west to east, eventually blending into Weoweopilau Stream. The hydrology for this wetland is provided by sheet flow since the topography in this area slopes from Kahili Mountain Road towards the highway and Weoweopilau Stream. Groundwater and surface runoff trickles in from the top of the ravine, on the west side, creating a waterfall down the steep slope. The functions and values of this wetland include nutrient uptake, soil stabilization, sediment trapping, ground water recharge, flood storage and habitat for nonnative aquatic species (swordtails, guppies, mosquito fish and bullfrogs).

The location of wetland #4 (to be called Puhi Wetland in this Final EA) is in the east fork of Puhi Stream. The east fork of Puhi Stream is gently flowing, exiting under the highway through a small culvert. This culvert appears to be inadequate during high flows, which probably contributes to the wetland conditions. The functions and values of Puhi Wetland is the same as Weoweopilau Wetland: nutrient uptake, soil stabilization, sediment trapping, ground water recharge, flood storage and habitat for nonnative aquatic species.

3.7.4 Floodplains

According to Flood Insurance Rate Maps (FIRM), the majority of the project area is contained within Zone X, indicating that it is outside the 500-year floodplain. A 100-year floodplain is located along Nawiliwili Stream (see Figure 3-11). Kaumualii Highway crosses this floodplain via Lihue Mill Bridge. Therefore, the highway itself is not within this floodplain. To the east of the Nawiliwili floodplain and north (mauka) of Kaumualii Highway is a small 500-year floodplain (see Figure 3-11).



- LEGEND**
-  Special Flood Hazard Areas Inundated by 100-year Flood
 -  Areas of 500-year flood
 -  Areas determined to be outside 500-year flood plain

Source: Flood Insurance Rate Map

N
GRAPHIC SCALE:



Floodplains
IMPROVEMENTS TO KAUMUALII HIGHWAY
 Final Environmental Assessment
FIGURE 3-11

3.8 ECOSYSTEMS

3.8.1 Flora

The vegetation along the highway may be classified into three major groupings: 1) developed and landscaped; 2) agricultural; and 3) undeveloped non-agricultural lands.

The area from Lihue to Puhī falls under the first two groupings, as grass lawns and low-lying weeds are typically found in landscaped areas associated with urban development. These developments include Kukui Grove Shopping Center, Kilohana, Kauai Community College, and other commercial and residential developments in Puhī. On the north (mauka) side of Kaumualii Highway in the vicinity of Kukui Grove Shopping Center are sugarcane fields associated with Lihue Plantation.

West of Puhī is former agricultural land that is currently uncultivated, and dominated by native overgrown grasses and shrubs.

Since Kaumualii Highway traverses several streams and gullies (see Section 3.7.1) with steep terrain, the vegetation in these areas is generally thick with shrubs and trees. Because of the terrain in these areas, sugarcane and other crops were never grown there.

The County of Kauai, in keeping the concept of Kauai as the "Garden Isle", has established by ordinance the designation of Exceptional Trees in the County. According to this ordinance, Exceptional Trees are:

... a tree or group of trees with historical or cultural value, or which by reason of its age, rarity, location, size, aesthetic quality or endemic status has been designated by the County Council to be preserved and so earmarked on maps of Kauai to be kept on file in the County Planning Department and the Department of Public Works, Building Division. (Article 5, Sec. 22-5.2)

The Maluhia Road "tree tunnel" is identified in the County ordinance on Exceptional Trees. The ordinance describes the location of this resource as swamp mahogany (*Eucalyptus robusta*) along both sides of Maluhia Road extending 1.2 km (0.75 miles) southward from Kaumualii Highway.

3.8.2 Fauna

An avifauna and mammal survey was conducted for this project. The survey noted the presence of feral cats and pigs (from tracks). Other terrestrial faunal species likely to be in the study area are introduced species that are common throughout the Hawaiian Islands, such as rats, mice, pigs and dogs.

The avifauna survey did not observe any native waterbirds, even though the U.S. Fish and Wildlife Service (USFWS) noted the possible presence of the endangered Hawaiian duck (*Anas wyvilliana*), Hawaiian stilt (*Himantopus mexicanus*), Hawaiian coot (*Fulica alai*) and Hawaiian moorhen (*Gallinula chloropus*) (see Section 3.8.3). The avifauna survey did record 15 non-native (introduced) species (see Table 3-8), most of which were expected. None of these species are threatened or endangered. The only migratory shorebird observed was the Pacific Golden-Plover (*Pluvialis fulva*), which were observed foraging near Kauai Community College. The Wandering Tattler (*Heteroscelus incanus*) and Ruddy Turnstone (*Arenaria interpres*) are known to visit the area, but none were observed.

**Table 3-8
Introduced Birds Sighted During Survey Along Kaunualii Highway**

Common Name	Scientific Name
Red Junglefowl	<i>Gallus gallus</i>
Cattle Egret	<i>Bubulcus ibis</i>
Spotted Dove	<i>Streptopelia chinensis</i>
Zebra Dove	<i>Geopelia striata</i>
Japanese Bushwarbler	<i>Cettia diphone</i>
Hwamei	<i>Garrulax canorus</i>
Greater Necklaced Laughing-thrush	<i>Garrulax pectoralis</i>
Common Myna	<i>Acridotheres tristis</i>
Western Meadowlark	<i>Sturnella neglecta</i>
Japanese White-eye	<i>Zosterops japonicus</i>
Northern Cardinal	<i>Cardinalis cardinalis</i>
House Finch	<i>Carpodacus mexicanus</i>
Chestnut Mannikin	<i>Lonchura malacca</i>
Nutmeg Mannikin	<i>Lonchura punctulata</i>
House Sparrow	<i>Passer domesticus</i>

Source: Phillip L. Bruner, Avifaunal and Feral Mammal Survey for Kaunualii Highway Improvements – MM 0.0 to 7.5, Kauai, April 24, 1998.

As described in Section 3.7.1, the streams crossing Kaumualii Highway are severely degraded. Therefore, an aquatic species survey found no native species and very few alien species in the sections of the streams near Kaumualii Highway. Native macrofaunal species were only found in stream segments several miles downstream from Kaumualii Highway, which suggests that some limited, low-level recruitment is occurring despite severely degraded conditions. The native o'opu nakea (*Awaous guamensis*) and o'opu-napili (*Sicyopterus stimpsoni*) were observed in Puali Stream, but in extremely low numbers. The survey noted that the reason o'opu nakea were not observed in the segment of Huleia Stream near Kaumualii Highway is presence of the predatory smallmouth bass (*Micropterus dolomieu*).

3.8.3 Threatened and Endangered Species

Consultation with the USFWS was initiated per requirements of the federal Endangered Species Act of 1973 (16 U.S.C. 1531-1543). Copies of correspondence with USFWS are located in Appendix B. The State of Hawaii Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) was also contacted for information on the possible presence of threatened and endangered species (see Appendix B).

"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 Service has evidence of vulnerability, but there are not enough data to support formal proposal as an endangered or threatened species.

In a letter dated September 23, 1998 and reconfirmed in a letter dated January 31, 2000 (see Appendix B), the USFWS stated that the endangered waterbirds Hawaiian duck (*Anas wyvilliana*), Hawaiian stilt (*Himantopus mexicanus*), Hawaiian coot (*Fulica alai*), and Hawaiian moorhen (*Gallinula chloropus*) may occur in any of the wetlands and stream crossings in the project area. USFWS also noted that migrating seabirds, such as the endangered Hawaiian dark-rumped petrel (*Pterodroma phaeopygia sandwichensis*) and the threatened Newell's shearwater (*Puffinus newelli*), may be affected by highway lighting. DOFAW also noted the problem of the Newell's shearwater being attracted to highway lighting.

In addition to confirming the possible presence of the above species, the USFWS, in the January 31, 2000 letter, stated that the endangered Hawaiian Hoary Bat (*Lasiurus cinereus semotus*) may also be in the project area. The biologist who conducted the avifaunal and mammal survey also noted that the Hawaiian Hoary Bat is fairly common on Kauai.

The avifaunal and mammal survey conducted for this project did not identify any of the above species. However, it is possible that these species were not present in the project area at the time of the survey.

3.9 GEOLOGY, PHYSIOGRAPHY, SITE CONTAMINATION AND NATURAL HAZARDS

3.9.1 Physiography and Geological Setting

The island of Kauai consists of a single great shield volcano that is deeply eroded and partly veneered with much later volcanics. The shield volcano was built by the extrusion of lava of the Waimea Canyon Volcanic Series during the late Pliocene Epoch (about 2.25 million years ago). These lava flows are exposed near "Knudsen Gap" along the project alignment. Due to their age, these olivine basalts are usually mantled with residual and saprolite soils grading into weathered rock with increasing depth.

Following the cessation of the main volcano building event, there was renewed volcanic activity with the extrusion of the post-erosional Koloa Volcanic Series. Rocks of the Koloa Volcanic Series are generally characterized as thick flows of dense basalt extruded from groups of vents and are associated with pyroclastic materials that form low cinder cones at the vent. Rocks of the Koloa Volcanic Series cover most of the eastern half of Kauai, including the majority of the alignment. In general, the rocks have a mantle of residual and saprolitic soils grading to weathered basalt with depth.

The highway traverses several streams and many smaller drainageways (see Section 3.7.1) that contain Quaternary Period alluvial deposits. The areas near Weoweopilau, Huleia and Nawiliwili Streams contain extensive unconsolidated to moderately consolidated, non-calcareous alluvial material deposited by erosion of the Koloa Volcanic Series. Smaller drainageways and gullies have also deposited alluvial sediments in localized areas.

Agricultural, transportation, and commercial developments within the last century have refined the local topography to its present condition.

3.9.2 Hazardous Waste Sites

Present and historic land uses in the corridor could have produced site contamination. Most contaminated sites are or were associated with the use, transportation, or storage of hazardous materials. Site contamination could result from on-site land uses, or contaminants may have migrated from a nearby site to the project area. This section provides preliminary information on documented sources of hazardous materials or contamination near the project area that could affect property acquisition or construction associated with the project.

Twenty-four State, federal and private databases were searched for sites containing hazardous materials along the project area. The following sites were identified by the database search:

- 21 Registered Underground Storage Tanks (UST);
- 10 Leaking Underground Storage Tanks (LUST);
- 7 Resource Conservation and Recovery Information System (RCRIS) -- small-quantity generators (SQGs), which include sites that generate, transport, store, treat, and/or dispose of hazardous waste as defined by RCRA.
- 1 Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), which contains data on potentially hazardous waste sites reported to the USEPA by states, municipalities, private companies, etc..

The LUST, SQG and CERCLIS sites are all located in Lihue and Puhi.

3.9.3 Natural Hazards

Kauai has been the victim of two major hurricanes within the last 20 years (a hurricane is tropical cyclone (storm) with winds that exceed 118 km/h (73 mph)). Hurricane Iwa struck the island on November 23, 1982, and Hurricane Iniki struck the island on September 11, 1992. Property damage as a result of Hurricane Iniki totaled more than \$3 billion, and much of the economy was devastated as many hotels suffered major damage, causing some to close. Historically, Kauai is the most vulnerable to hurricanes and tropical storms (a tropical storm is a cyclone with sustained winds ranging between 63 km/h (39 mph) and 118 km/h (73 mph)) as

compared to the other major islands. Hurricane Dora crossed Kauai in 1959 and tropical storm Gill crossed the island in 1983.

In Hawaii, most earthquakes are linked to volcanic activity. Since only the island of Hawaii experiences volcanic activity, most earthquakes occur there. Therefore, it is unlikely that Kauai would experience a major or detectable (without the use of highly sensitive instruments) earthquake.

Tsunamis are usually generated when the ocean floor is deformed abruptly during an earthquake. Tsunami reaching Hawaii are generated by earthquakes occurring in such places as Chile, Japan, the Aleutian Islands, Alaska and Hawaii. Based on historical records, the areas most vulnerable to tsunamis are Hilo and the North shores of all the islands. The project area is not susceptible to tsunami.

3.10 HISTORIC AND ARCHAEOLOGICAL RESOURCES

This section documents activities to identify historic and archaeological resources in the project area in accordance with the requirements of the Code of Federal Regulations (CFR) pertaining to the Protection of Historic Properties (36 CFR 800) (known as Section 106).

3.10.1 Methodology

The methodology described in this section encompassed a good faith effort to identify historic properties in the project's area of potential effects (APE). An historic property is any district, site, building, structure, or object that is on or eligible for the National Register of Historic Places. The APE means the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character of historic properties, if any such properties exist.

Cultural Surveys Hawaii (CSH) conducted an archaeological and historical assessment of the Kaunualii Highway corridor within the project limits. An historic background survey was conducted, which included study of historic maps, archival documents, previous archaeological and historical studies of the project area. Fieldwork was also conducted to

inspect and assess historic properties identified through archival and document research, and to find potential new sites. A copy of CSH's assessment report can be found in Appendix I.

Following completion of the CSH assessment report, the following agencies and organizations were asked for assistance in identifying other historic properties that may not have been identified by CSH:

- State of Hawaii Department of Land and Natural Resources, Historic Preservation Division (SHPD);
- Office of Hawaiian Affairs (OHA);
- State of Hawaii Department of Hawaiian Home Lands;
- Historic Hawaii Foundation;
- Kauai Historic Preservation Review Commission (KHPRC);
- Kauai Hawaiian Civic Club (current address not valid; letter and report returned); and
- Kauai Historical Society.

Of the agencies and organizations contacted, only the SHPD, OHA and KHPRC responded to requests for information, or participated in consultation.

Consultation with SHPD consisted of correspondence (see Appendix B) and a meeting held on November 16, 1999. At this meeting, SHPD staff requested consultation with other parties in accordance with the regulations of Section 106. SHPD recommended that the project hold a second public information meeting in which potential project impacts to historic properties be discussed, and consultation with the KHPRC. The project complied with SHPD's recommendations.

The OHA responded to the request for information in a letter dated January 14, 2000 (see Appendix B). Although OHA did not identify additional historic properties, they did request that the CSH report be revised to include research on the Hawaiian occupation and use of lands from Koloa to Lihue beyond what is presented in the report. SDOT responded to OHA's request in a letter dated February 1, 2000 (see Appendix B).

SDOT met with the KHPRC on February 2, 2000 and provided a project briefing. KHPRC followed-up this meeting with a letter to SDOT dated February 4, 2000 (see Appendix B), which

identified additional historic properties in the APE (see Section 3.10.1.2). KHPRC also requested continuing consultation as the project proceeds.

SDOT conducted a public information meeting on January 13, 2000 to discuss among other issues, project impacts to historic properties. Many of the participants at this meeting were residents of German Hill (they were directly notified of this meeting), who were concerned about the re-alignment of Hoomana Road, the only access route to German Hill (see Section 2.1.2.3). No comments were generated regarding historic properties except that one German Hill resident noted that his house is considered historic.

Finally, at the request of the Office of Environmental Quality Control (see June 7, 2000 letter in Section 5.3.3) and the Office of Hawaiian Affairs, SDOT contracted the services of CSH to conduct a traditional cultural properties (TCP) assessment (see Appendix J). A TCP can be designated an historic property under Section 106.

3.10.2 Survey and Consultation Results

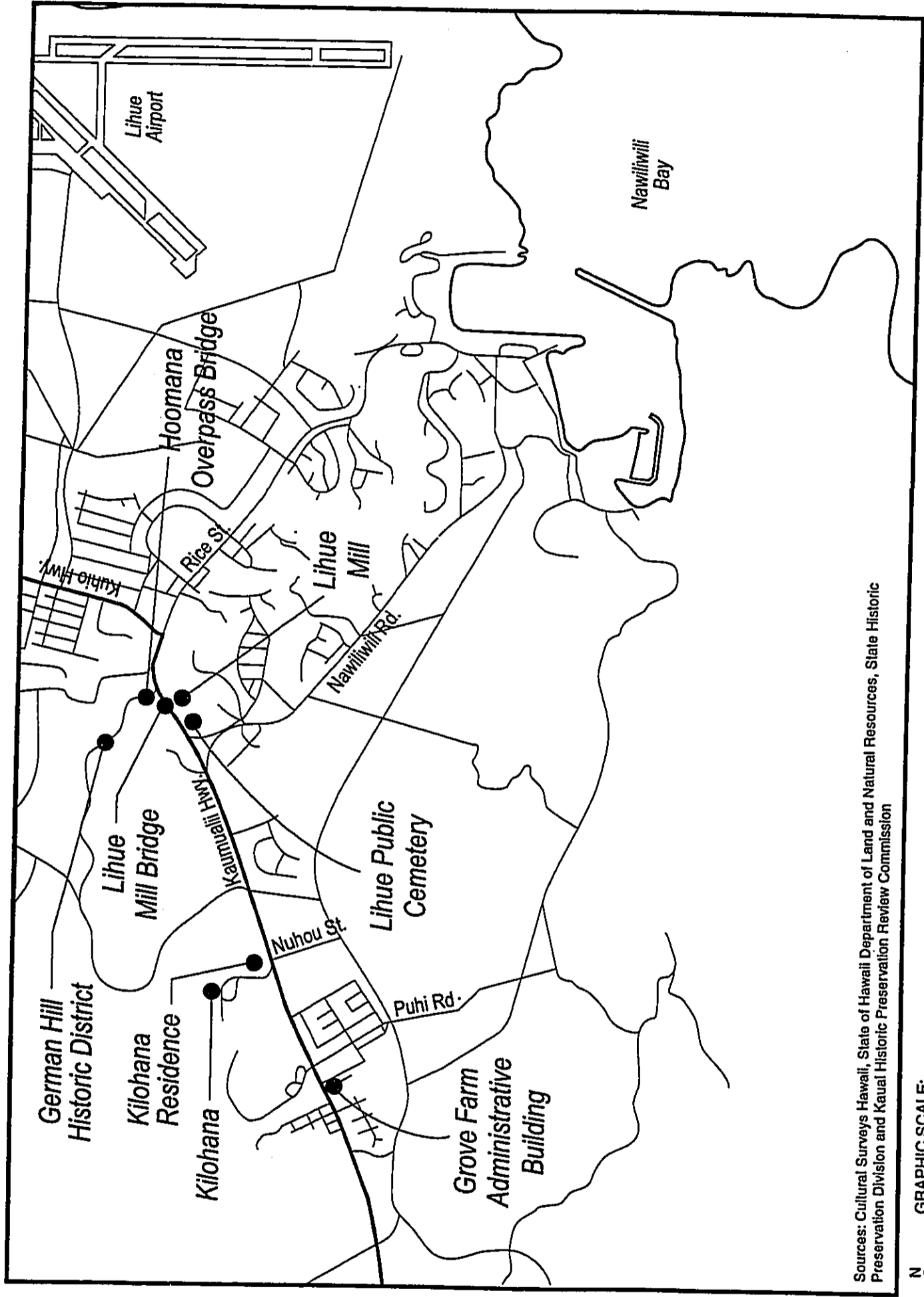
The CSH assessment identified the following historic properties within the APE (see Figure 3-12):

- Grove Farm administrative office building;
- Lihue Public Cemetery;
- Lihue Mill Bridge; and
- Hoomana Overpass Bridge.

Consultation activities with SHPD and KHPRC assisted in identifying four additional historic properties in the APE (see Figure 3-12):

- German Hill, a residential community on Hoomana Road, as a potential historic district;
- Kilohana;
- a residence adjacent to Kilohana; and
- Lihue Mill.

The KHPRC mentioned the possibility of old railroad crossings along the highway. Grove Farm Properties, Inc. provided information on track locations. However, all of the tracks at these



Sources: Cultural Surveys Hawaii, State of Hawaii Department of Land and Natural Resources, State Historic Preservation Division and Kaula Historic Preservation Review Commission

**Historic Properties in the Area of Potential Effect
IMPROVEMENTS TO KAUMUALII HIGHWAY**
Final Environmental Assessment
FIGURE 3-12

locations have either been removed or covered, and there is no visible evidence that any track is still in existence. The topographic survey conducted for this project did not identify any crossings.

The TCP assessment (see Appendix J) did not identify any cultural properties or practices in areas immediate adjacent to Kaunualii Highway, nor did it identify TCPs outside the highway corridor. The assessment noted that since the 19th century, the project area has been used extensively for large-scale agriculture, as well as for commercial and residential development. Individuals who were contacted for information about TCPs could not identify any in the immediate project area, nor within the ahupua'a. It is likely that past agricultural and other development have removed nearly all evidence of past cultural practices.

Brief descriptions of the historic properties in the APE are provided below.

Built in the mid-1930s, the Grove Farm office building is the only remaining structure of the plantation era of the late 1800s to latter half of the 20th century. The building still functions as this company's administrative headquarters. The exterior of the building appears not to have altered substantially since the 1930s.

Lihue Public Cemetery is located on a knoll overlooking Kaunualii Highway along the south (makai) side. The cemetery dates back to the 19th century. The cemetery was established by the Rice family, and became the resting place of members of prominent families that had settled on Kauai. William Harrison Rice, the manager of Lihue Plantation, was the first person buried in the cemetery in 1862.

Lihue Mill Bridge was constructed by the Territorial Highway Department in 1936, and provided grade-separation for a railroad alignment leading to Lihue Sugar Mill. According to the State of Hawaii Historic Bridge Inventory and Evaluation (May 1996), the bridge is only one of two steel stringer grade separations constructed in the State. The materials used for the bridge are original, and no reconstruction or major repair of the bridge has been conducted by SDOT. The historic significance of Lihue Mill Bridge is related to its rare steel stringer bridge design.

Hoomana Overpass Bridge was constructed in 1928 by Lihue Plantation over a railroad alignment between upslope fields and Lihue Sugar Mill. The railroad is no longer in existence,

but the bridge's original design and materials have not been altered since its construction. According to the Historic Bridge Inventory, the historic quality, or feeling, of this bridge is derived largely from its narrow width and short sight lines.

German Hill had its beginnings with the construction of Lihue Lutheran Church in 1883, which was meant to serve laborers from Hanover and Bremen, Germany. The houses of German Hill were built by Hackfeld and Company for its department heads, who were almost all Caucasian with German ancestry. The houses were built between 1920 and 1935. The 20 houses and church are still seen as a cohesive district. There have been modifications to individual buildings, but these changes have largely been in character to the district.

Kilohana is listed on the Hawaii Register of Historic Places, and is associated with the Wilcox family. The main building, designed by Mark Potter, a noted Hawaii architect, was constructed in the mid-1930s. It is a grand two-story house within an extensive lawn, and is notable for its angled porte-cochere and prominent roof forms. Its interior layout and finishes are also distinctive. The building's original use was residential, but is currently used for commercial purposes (tours, retail and restaurant). The residence adjacent to Kilohana was constructed in 1938, and is still in excellent condition.

Lihue Mill, located just south (makai) of Lihue Mill Bridge, occupies the same site as the original Lihue Plantation mill, which was built in 1849. The existing mill was built in the mid-1930s. The condition of the mill is fair, and many of its windows have been replaced or covered with corrugated metal.

3.11 VISUAL AND AESTHETIC RESOURCES

Identifying viewsheds is an important step to assess a project's potential visual affects. A viewshed can be described as all surface areas visible from an observer's viewpoint. The two notable viewsheds of the study area are the Haupu Range and the Maluhia Road Tree Tunnel.

Haupu Range

The Haupu Range is a line of relatively low, but majestic hills and peaks, which can be seen from both east and west sides of the range. Kaunualii Highway passes through the range via Knudsen Gap.

Maluhia Road Tree Tunnel

The visual experience of the Maluhia Road Tree Tunnel, which is two lines of swamp mahogany trees extending approximately 1.2 km (0,75 miles) south from Kaumualii Highway, is most mesmerizing while traveling on Maluhia Road. However, the tree tunnel does offer visual appeal while viewing it from the Kaumualii Highway / Maluhia Road intersection, and while traveling east-bound on Kaumualii Highway prior to reaching Maluhia Road. The Haupū Range somewhat blocks the visual experience of the tree tunnel while traveling westbound on Kaumualii Highway.

These viewsheds have visual quality according to FHWA's guidance document on visual impacts (Visual Impact Assessment For Highway Projects Publication No. FHWA-HI-88-054) because they have a high level of vividness (memorability of landscape), some intactness (extent to which the landscape is free from visual encroachment) and some unity (the degree to which the landscape join together to form a coherent, harmonious visual pattern).

The visual quality of Haupū Range is detracted by some structures depending on the perspective of the viewer.

CHAPTER FOUR

Environmental Consequences

CHAPTER 4 ENVIRONMENTAL CONSEQUENCES

This chapter describes the potential beneficial and adverse environmental and social impacts of the proposed improvements to Kaumualii Highway. Two alternatives are considered: the No Build Alternative and the Build Alternative. These alternatives are defined in Chapter Two. The No Build Alternative consists of the roadway improvements identified in the Kauai Long-Range Land Transportation Plan (May 1997) except for the proposed improvements for Kaumualii Highway. The Build Alternative consists of widening Kaumualii Highway from its current two-lane undivided configuration to a four-lane divided configuration from Kuhio Highway in Lihue to Maluhia Road. The west end of the project is extended approximately 1340 m (4400 ft) west of Maluhia Road to allow for a transitional section between the existing two-lane roadway and the future four-lane roadway. Hoomana Road will also be realigned to maintain access to a small neighborhood. The No Build Alternative is used as the basis of assessing the environmental impacts of the Build Alternative. Mitigation measures are also presented in this chapter if an adverse impact is anticipated.

4.1 IMPACTS ON LAND USE

4.1.1 Land Use Impacts

The Build Alternative will provide additional roadway capacity by widening the existing Kaumualii Highway. To widen the highway, areas of open space now used for urban landscaping and abandoned agricultural land will be converted to transportation use. Approximately 35 ha (86 acres) of open space will be converted to roadway right-of-way.

Urban development and long-term land use impacts can result when a highway project enhances access to vacant land, or increases transportation capacity beyond what is needed for planned growth. The assessment of land use impacts of this project hinges on whether increased roadway capacity on Kaumualii Highway will facilitate planned growth, or induce unplanned growth. The level of planned growth is assumed to be the land use growth pattern contained in the Kauai General Plan (see Section 3.1.3.2a).

The Kauai General Plan describes future mixed-use (residential and commercial) development between Puhi and Lihue, on the south (makai) side of Kaumualii Highway (see Section 3.1.2). This growth pattern is presented in the 1982 General Plan (the current plan), and in the Discussion Draft of the General Plan (December 1999). One primary purpose of the Build Alternative is to meet existing travel demand, which already overtaxes the capacity of the roadway. Another major purpose of the project is to address the level of future travel demand that will derive from the land use projections of growth between Puhi and Lihue. Therefore, by increasing roadway capacity, the Build Alternative will facilitate planned growth between Puhi and Lihue.

Under the No Build Alternative, commercial and residential development between Puhi and Lihue would still occur because County planning would encourage growth in this area. However, increasingly congested traffic conditions would result, as described in Section 4.4.1.1.

The Build Alternative will not induce unplanned growth in the fallow agricultural lands west of Puhi because such development will be inconsistent with the land use policies of the County. There is ample available land between Puhi and Lihue for the level of planned development forecast for the area.

In summary, the Build Alternative will have beneficial land use impacts by facilitating planned development. It will not provide excess capacity or encourage unplanned development.

4.1.2 Displacement and Relocation Impacts

As described in Section 2.1.2, the Build Alternative was designed to minimize displacements of existing land uses. However, the re-alignment of Hoomana Road (see Section 2.1.2) will require the relocation of one residence at the southern (makai) edge of the German Hill neighborhood. Since the No Build Alternative would not require the re-alignment of Hoomana Road, the residence would not be displaced under the No Build Alternative.

There will be no displacements along Kaumualii Highway under either alternative.

4.1.3 Relationship of the Proposed Action to Governmental Plans, Policies, and Controls

4.1.3.1 Hawaii State Plans and Controls

4.1.3.1a Hawaii State Plan

The Build Alternative will support the goals and objectives of the Hawaii State Plan (June 1991) dealing with economic, physical and natural environment, and transportation objectives and policies. The No Build Alternative would do little to support the goals and objectives of the Hawaii State Plan (June 1991) because it would not provide the transportation improvements needed to facilitate economic development for the region.

In accordance with the Plan's economic objectives and policies, the Build Alternative will facilitate commerce through improved transportation service. It will also contribute to the economy of the County and State by providing largely federally funded construction jobs. An estimated construction expenditure of up to \$110 million will be made. The project will facilitate commerce without damaging the natural environment. The widening of Kaunualii Highway will occur alternately on the north or south sides of the roadway to avoid important historic, physical and natural resources.

4.1.3.1b Coastal Zone Management (CZM)

The following describes the project's consistency with the objectives and policies of the State's Coastal Zone Management (CZM) Program. The Department of Business, Economic Development and Tourism (DBEDT), the agency administering the State's CZM program, will review this assessment.

Recreation Resources

The Build Alternative will not adversely affect parks and recreational resources in the project area.

Historic Resources

An archaeological and historical assessment was conducted to identify historic resources (archaeological, cultural or historic sites on or eligible for the National Register of Historic

Places) that could be affected by the project. In addition, the State Historic Preservation Division (SHPD) and others (see Section 3.10) were consulted to ensure that all potential historic properties were identified. Section 106 of the National Historic Preservation Act requires a good faith effort to identify historic properties that could potentially be affected by the project. The Federal Highway Administration (FHWA) determined that only one historic property within the project's Area of Potential Effect will be adversely affected by the project: Lihue Mill Bridge. This assessment was submitted to the State Historic Preservation Officer (SHPO), who concurred with the determination of adverse effect. Following the SHPO concurrence with this determination of adverse effect, a Memorandum of Agreement that specifies mitigation measures was prepared. For more information, see Section 4.10.

Scenic And Open Space Resources

The Build Alternative will not block scenic resources (see Section 4.12). Although the additional right-of-way needed for the widening will displace open space, there are ample open space resources in the project area.

Coastal Ecosystems

Since the Build Alternative will not be within the Shoreline Setback Area or the Special Management Area, it will not affect coastal habitats or ecosystems.

Economic Uses

The Build Alternative will benefit residents in the southern portion of Kauai, and the visitor accommodation region in Koloa-Poipu, by alleviating roadway congestion on Kaumualii Highway between Maluhia Road and Lihue. However, it will also convert inactive agricultural land to transportation use, removing such land from possible future use in diversified agriculture (see Section 4.2). Given the abundance of fallow agricultural land in the area, the beneficial impact of congestion alleviation that will be provided by the Build Alternative will outweigh the loss of a very small part of the inventory of fallow agricultural land in the area.

Coastal Hazards

Kaumualii Highway is a crucial piece of infrastructure that will be used for evacuation in the event of a coastal hazard, such as a hurricane or tsunami. The Build Alternative will provide two additional lanes on Kaumualii Highway, increasing evacuation capacity.

Managing Development

The proposed project will facilitate and help localize development in areas planned for growth. The Build Alternative will also require State and County permits that include provisions for public participation. These permits are important for the protection of coastal resources.

4.1.3.1c Island of Kauai Long-Range Land Transportation Plan

The No Build Alternative assumes the construction of the transportation system that is recommended by the Kauai Long-Range Land Transportation Plan (May 1997), except the proposed project. Therefore, the No Build Alternative would only be partially consistent with the Long-Range Plan.

The Build Alternative will be consistent with the Long-Range Plan because it is an element of the Long Range Plan.

4.1.3.2 County of Kauai Plans and Controls

4.1.3.2a Kauai County General Plan

The Build Alternative will be consistent with the County General Plan goals and objectives. It will not detract from the concept of Kauai as the "The Garden Isle," especially since no part of the Maluhia Road "tree tunnel" will be displaced. In addition, the Build Alternative will minimize impacts to the environment by avoiding business displacements, although one residence will be displaced due to the re-alignment of Hoomana Road. The Build Alternative will be consistent with the general landscape of the project area.

A consistency evaluation with the current Discussion Draft of the General Plan is not included in this section because the updated General Plan is not yet adopted. However, both the adopted 1982 General Plan and the proposed update promote urban mixed-use development from Lihue to Puhi, along the south (makai) side of Kaumualii Highway. As described in Section 4.1.1, the Build Alternative will support such development by improving the transportation infrastructure of this area.

4.1.3.2b Kauai County Special Management Area

Since the Build Alternative will be outside the SMA, the project will not require an SMA permit from County.

4.1.4 Mitigation Measures

Land owners affected by right-of-way acquisition will be entitled to fair market compensation for land, buildings and uses in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. One residence will require relocation assistance. Such assistance may include replacement housing payments in addition to the value of the displaced dwelling. In addition, moving and other expenses will be reimbursed to a limit.

4.2 IMPACTS ON FARMLAND

4.2.1 Cropland Impacts

No active agricultural lands will be displaced by either the No-Build or Build Alternatives. However, the Build Alternative will permanently convert to transportation use approximately 25 ha (60 acres) of agriculturally zoned land in the area between Puhi and the west end of the project that could be used for future crop production. This impact will occur on fallow agricultural lands west of Puhi.

4.2.2 Farmland Protection Policy Act

Under the Farmland Protection Policy Act (FPPA), federal agencies must identify and consider the adverse effects of their programs on the preservation of farmland; consider alternative actions that could lessen adverse effects; and ensure that their programs, to the extent practicable, are compatible with State, local and private programs and policies to protect farmland. Agricultural areas that will be affected by the proposed project (see Section 4.2.1) are considered prime, unique, Statewide or locally important according to the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS). Therefore, the proposed project is subject to FPPA.

Per 7 CFR 658.4(a), a Form AD-1006, "Farmland Conversion Impact Rating," was submitted to the NRCS for a "relative value of farmland to be converted." The FHWA completed Form AD-1006 by providing site assessment scores per 7 CFR 658.5. The combined Land Evaluation and Site Assessment score for the Build Alternative is 134 points. (The second score on Form AD-1006 is for the Partial Re-Alignment Alternative (see Section 2.2.2), which was still under consideration at the time consultation with NRCS was occurring.) If an alternative receives a total score equal to or greater than 160 points, alternatives that avoid farmland impacts must be evaluated. However, with a score less than 160, the loss of farmland is not considered significant. The completed Form AD-1006 is provided in Appendix B.

4.3 IMPACTS ON SOCIOECONOMIC CONDITIONS

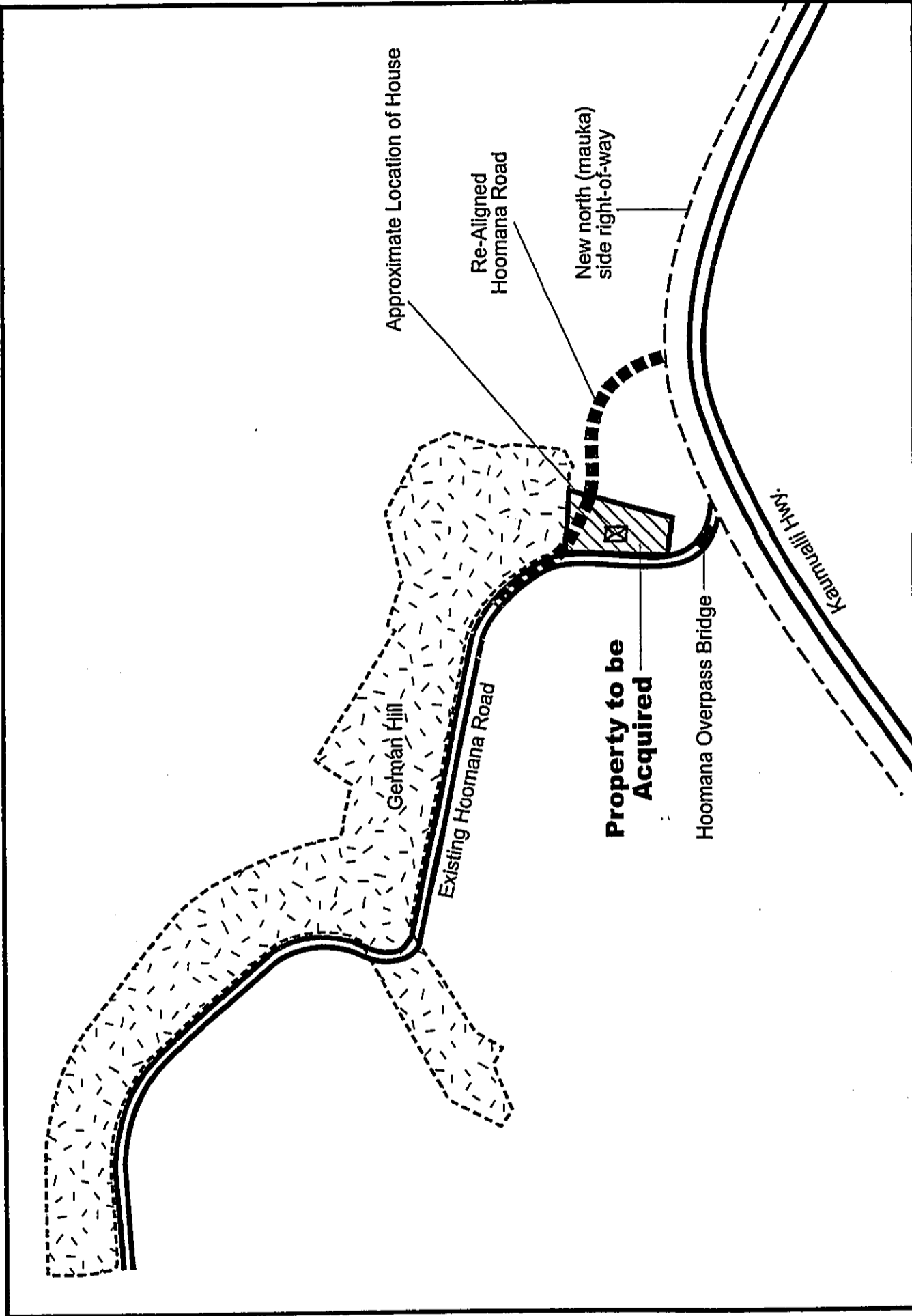
4.3.1 Neighborhoods

As shown on Figure 3-1, residential neighborhoods along Kaunualii Highway include Lihue, German Hill, Kukui Grove, Nawiliwili and Puhi. The Build Alternative will not cause residential or business displacements along Kaunualii Highway (see Section 4.1.2). In addition, safe pedestrian crossings and secondary road crossings will be provided to maintain pedestrian and vehicle connections across the widened highway. Therefore, the Build Alternative will not split any existing neighborhood, nor isolate parts of neighborhoods along the highway from the greater community. Connections across the highway will be maintained.

Although the re-alignment of Hoomana Road will displace one residence within the German Hill neighborhood (see Figure 4-1), the affected residence is located at the extreme southern edge of the neighborhood. Therefore, the remaining houses and the Lihue Lutheran Church will remain a cohesive neighborhood unit, and the social activities of the neighborhood will not be affected.

4.3.2 Economic Activities

None of the alternatives will affect property values in the study area. The market value of properties in the area is based on factors unrelated to the proposed highway widening, such as market demand for housing or commercial property. However, the Build Alternative will



N
 Source: PatEn, Inc.
 Not to Scale

Property to be Acquired for Re-Aligned Hoomana Road
 IMPROVEMENTS TO KAUMUALII HIGHWAY
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 FIGURE 4-1

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

convert real estate in private ownership to a public right-of-way, which will decrease the base of private property generating property tax revenues for the County, lowering tax revenue. The No Build Alternative would not change County property tax revenues.

The Build Alternative will enhance Kauai's visitor industry and economy to a much greater degree than the No Build Alternative, by improving mobility and economic efficiency.

The Build Alternative will infuse federal funds into the local economy, which will increase short-term employment and the purchase of local goods and services. The project's impact on long-term employment will be minimal because there will be little difference in future employment-producing development (e.g., commercial) between the No Build and Build Alternatives (see Section 4.1.1). Nevertheless, the Build Alternative will enhance access to the commercial districts in Lihue, Kukui Grove and Puhi through improved traffic flow. Under the No Build Alternative, congested traffic conditions would make these commercial districts less attractive.

4.3.3 Public Facilities and Services

Neither the Build nor No Build Alternatives will directly affect (through right-of-way impacts) the public facilities and services described in Section 3.3.5. In particular, these alternatives will not require right-of-way from, or affect access to, any park or recreational resource. By providing additional roadway capacity on Kaunualii Highway, the Build Alternative will improve response time for police, fire and ambulance services. In addition, road closures that now occur because of traffic incidents will be much rarer. The No Build Alternative would not offer such benefits.

4.3.4 Environmental Justice (Executive Order 12898)

Executive Order (EO) 12898 regarding Environmental Justice requires federal agencies to take appropriate and necessary steps to identify and avoid disproportionately high and adverse effects of federal projects on minority and low-income populations' health or environment. Because of expected federal participation in the construction funding of this project, the project must comply with EO 12898.

Based on the information presented in Section 3.3, there are minority populations in the study area in accordance with the minority definition contained in "FHWA Actions to Address

Environmental Justice in Minority and Low-Income Populations (December 2, 1998)". There may also be pockets of low-income populations. However, in general, the study area does not contain a higher percentage of households below the U.S. Department of Health and Human Services' poverty level in comparison to the County and the State, and the median household income of the study area is greater than the median household incomes of the County and State. Since no alternative will cut through or cause proximity impacts (such as high noise levels or degraded air quality) to neighborhoods along the highway (see Section 4.3.1), there will be no minority or low-income populations that will experience high or disproportionate impacts from the project, despite the presence of minority populations and the possible presence of pockets of low-income populations in the study area. The German Hill residence that will be displaced due to the re-alignment of Hoomana Road is not owned or occupied by minority or low-income persons.

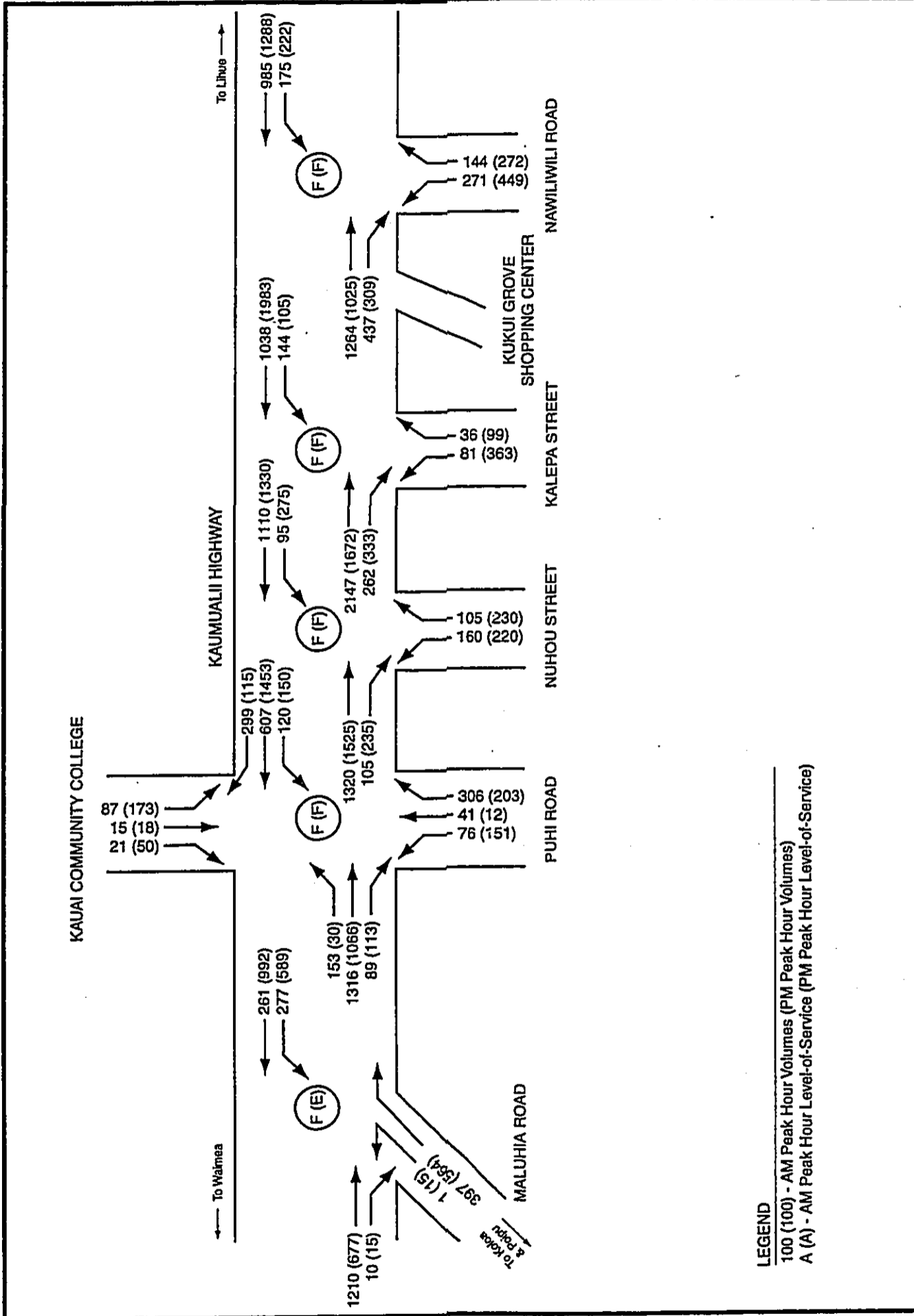
4.4 IMPACTS ON INFRASTRUCTURE

4.4.1 Transportation

4.4.1.1 Future Traffic Operations

Based on population and employment projections used in the Kauai Long-Range Land Transportation Plan (May 1997), projected traffic volumes on Kaumualii Highway for 2020 were developed. Average daily traffic (ADT) volume on Kaumualii Highway is forecast to be 37,600 vehicles in 2020. Given this level of projected travel demand, an analysis of traffic conditions at major intersections along the highway was conducted for the No Build and Build Alternatives.

Figure 4-2 shows projected volumes and levels-of-service (LOS) at five major intersections (Maluhia Road, Nuhou Street, Puhi Road, Kalepa Street and Nawiliwili Road) under the No Build Alternative. Since Kaumualii Highway is presently operating near and over capacity during peak periods (see Section 1.2.1), under the No Build Alternative, traffic operations at these intersections would worsen to LOS F (the worst condition possible) during both morning and afternoon peak hours by 2020.



LEGEND
 100 (100) - AM Peak Hour Volumes (PM Peak Hour Volumes)
 A (A) - AM Peak Hour Level-of-Service (PM Peak Hour Level-of-Service)

Source: Austin, Tsutsumi & Associates, Inc.



Year 2020 Traffic Conditions Under the No Build Alternative
IMPROVEMENTS TO KAUMUALII HIGHWAY
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FIGURE 4-2

Figure 4-3 shows projected volumes and LOS at the same five major intersections under the Build Alternative. Kaumualii Highway will operate substantially better with the additional lanes that will be provided under the Build Alternative. In 2020, the highway will operate at LOS B/A and B during the morning and afternoon peak hours, respectively. The worst predicted traffic condition at the major intersections will be LOS C at the intersections of Kaumualii Highway and Kalepa Street in both the morning and afternoon peak hours, and Kaumualii Highway and Nuhou Street in the afternoon peak hour.

4.4.1.2 Bike and Pedestrian Movements

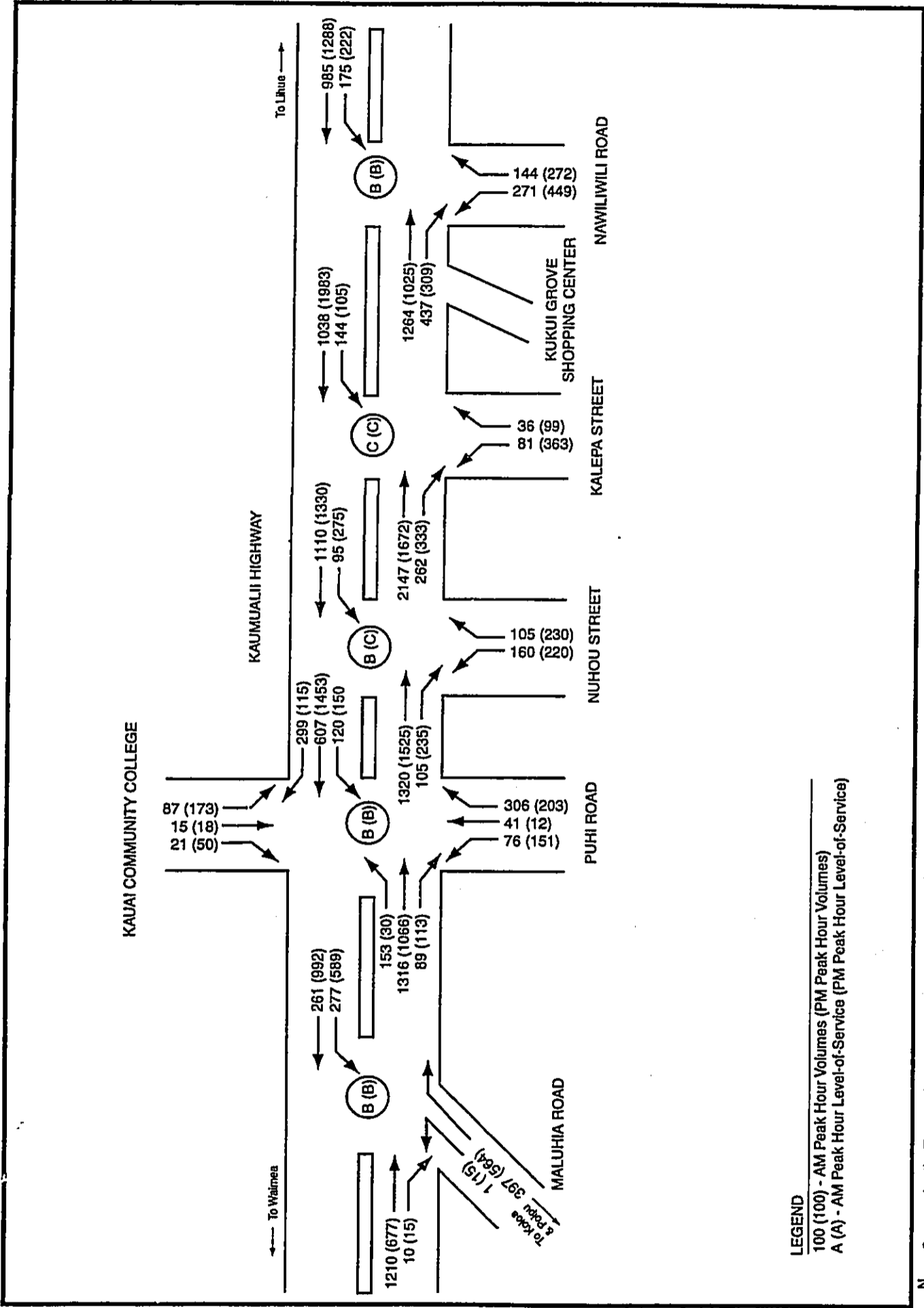
The No Build Alternative would not affect existing bike and pedestrian facilities in the project area. Therefore, the existing level of bike and pedestrian service would not change under the No Build Alternative.

The Build Alternative will widen the current 1.2 m (4 feet) shoulder width to 3 m (10 feet) on both sides of the highway. Widened shoulders will substantially increase space for cyclists using Kaumualii Highway, and improve their safety. Kaumualii Highway's existing designation as a bike route from Lihue to Knudsen Gap will be maintained, and the length of the bike route designation will be extended to at least the west end of the project. In urban areas, bike lanes will be striped at intersections because the 3 m (10 feet) shoulders could not be maintained in these areas.

The typical urban roadway cross-section (see Section 2.1.2), which will be used from Lihue to Puhi, includes sidewalks that will make this section of Kaumualii Highway much more accessible to pedestrians and wheelchair-dependent persons. The sidewalks will be compliant with the Americans with Disabilities Act. Sidewalks are not included in the typical rural cross-section (see Section 2.1.2) because no or little development is planned between Puhi and the west end of the project.

4.4.1.3 Transit Services

The County's bus system uses Kaumualii Highway to service South Kauai. Under the No Build Alternative, transit service will deteriorate because of increasing traffic congestion.



**Year 2020 Traffic Conditions Under the Build Alternative
 IMPROVEMENTS TO KAUMUALII HIGHWAY**
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FIGURE 4-3

Source: Austin, Tsutsumi & Associates, Inc.



Traffic operations on Kaumualii Highway will improve under the Build Alternative (Section 4.4.1.1). Therefore, transit service will improve under the Build Alternative, as transit vehicles will be less impeded by congestion.

4.4.1.4 Highway Safety

The Build Alternative will convert Kaumualii Highway from an undivided to a divided configuration with a median at least 10 m (32 feet) wide. This will improve motor vehicle safety by reducing the chance of head-on collisions, one of the most deadly types of incidences. The Build Alternative will also correct sight distance deficiencies that were made when the highway was constructed, which was before the adoption of current roadway design standards. Increased sight distances provide drivers with more time to react to potentially hazardous situations, increasing the safety of motorists using the highway. However, providing additional lanes will enable some motorists to exceed the highway's speed limit, potentially increasing the risk of incidents.

Under the No Build Alternative, the existing level of highway safety would remain the same, which based on incident statistics (see Appendix C), is relatively good.

4.4.2 Drainage

Under the No Build Alternative, existing drainage structures (inlets, energy dissipaters, culverts and piping) would remain.

Since the Build Alternative will widen the highway, drainage structures will be extended, and their capacities increased. During the design phase, the drainage systems will be engineered to maintain existing surface water movements. Therefore long-term hydraulic patterns will not be affected by the project.

4.5 IMPACTS ON AIR QUALITY

The analytical methods used to predict the impacts described in this section are accepted by the U.S. Environmental Protection Agency (USEPA) and the State of Hawaii Department of Health (SDOH).

4.5.1 Pollutants for Analysis

The pollutants relevant to evaluating the air quality impacts of a roadway project are those contained in motor vehicle emissions. Vehicles emit carbon monoxide (CO), hydrocarbons (HC), nitrogen oxide (NO_x), and lead (lead levels have decreased substantially and will continue to do so due to the mandated elimination of lead in gasoline). Of these four pollutants, only CO was selected for a quantitative microscale analysis because it is the most stable, and it is emitted at the highest concentrations. CO air pollution is generally considered to be a microscale problem that can be addressed locally to some extent. The other pollutants degrade air quality at a regional scale, with the regional level of impact not affected by a single roadway improvement project.

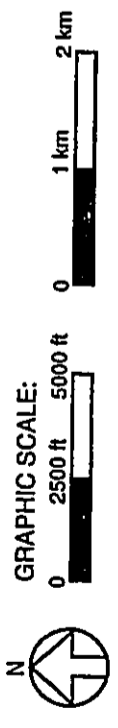
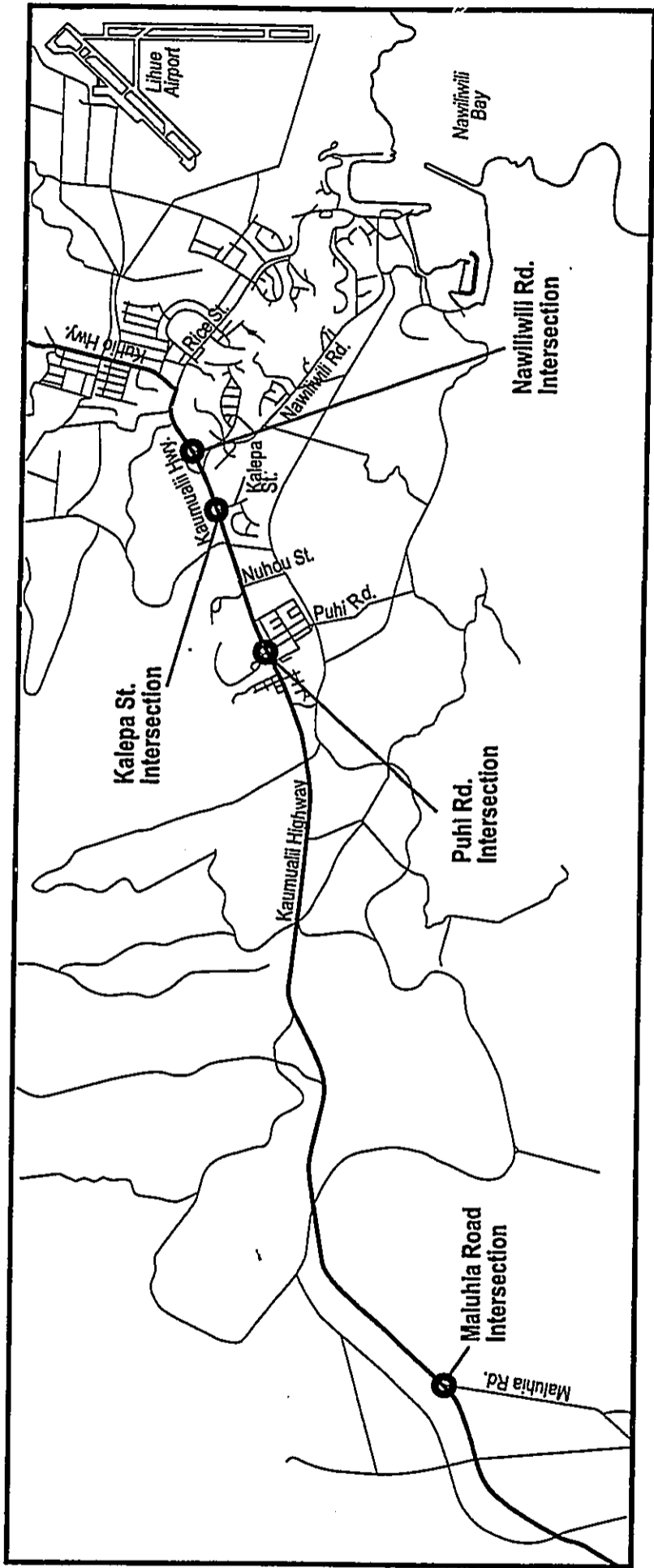
4.5.2 Methodology

A microscale impact assessment was conducted at specific locations to determine whether they will experience air quality impacts from motor vehicle emissions. Three scenarios were selected for analysis: 1998 (existing conditions); the No Build Alternative in 2020; and the Build Alternative in 2020. The following four intersections along Kaunualii Highway were identified for air quality analysis because of their existing and future traffic conditions (see Figure 4-4):

- Nawiliwili Road
- Kalepa Street
- Puhi Road
- Maluhia Road

Roadway intersections are the primary areas of concern in microscale air quality analysis because these are the areas where traffic congestion and queuing occurs, increasing the concentration of vehicular pollutants.

To estimate the maximum 1-hour average CO concentration for each scenario at the selected intersections, the computer models MOBILE5A and CAL3QHC were used. MOBILE5A is used to calculate vehicular CO emissions based on such factors as vehicle mix, cold/hot start fractions (emissions are greater under the cold-start mode), and ambient temperature. After computing vehicular CO emissions, CAL3QHC, an atmospheric dispersion model, was used.



Air Quality Analysis Locations
IMPROVEMENTS TO KAUMUALII HIGHWAY
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FIGURE 4-4

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

CAL3QHC was developed for the USEPA to simulate vehicular movement, vehicle queuing and atmospheric dispersion of vehicular emissions near roadway intersections. It predicts 1-hour average pollutant concentrations near roadway intersections (signalized or unsignalized) based on traffic and emission data, roadway/receptor geometry and meteorological conditions.

Traffic data were obtained from the traffic study prepared for this project (Austin, Tsutsumi & Associates, Inc, July 1998). This data included vehicle approach volumes, saturation capacity estimates, intersection laneage and signal timings.

Meteorological conditions were defined to be "worst-case" in terms of atmospheric stability, mixing height (height above the surface at which relatively vigorous vertical mixing occurs), and wind speed. Existing background concentrations of CO of 0.5 parts per million (ppm) was assumed, which is considered to be conservative.

Worst-case 8-hour carbon monoxide concentrations were estimated by multiplying the worst-case 1-hour values by a persistence factor of 0.5, which is based on traffic volumes averaged over eight hours, and meteorological conditions that are more variable (and hence more favorable for dispersion) over an 8-hour period than they are for a single hour.

More detailed information on the methodology used to predict CO concentrations may be found in Appendix D.

4.5.3 Potential Impacts

As described in Section 4.4.1.1, the Build Alternative will result in a more efficient flow of motor vehicle traffic on Kaunualii Highway. Regionally, the Build Alternative will not change vehicle miles traveled (VMT) from the No Build Alternative, but will most likely reduce vehicle hours traveled (VHT) because of the improved traffic efficiency on Kaunualii Highway (i.e., motorists will spend less time traveling on Kaunualii Highway within the project limits). Therefore, small improvements in regional air quality will occur under the Build Alternative, but will hardly be noticeable.

Table 4-1 summarizes predicted worst-case 1-hour morning and afternoon ambient CO concentrations at the selected intersections.

Table 4-1
Estimated Worst-Case 1-Hour CO Concentrations
at Selected Intersections
(milligrams per cubic meter)

Kaumualii Highway Intersection	Year 1998 Existing Condition		Year 2020 No Build		Year 2020 Build	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
Nawiliwili Road	<u>10.0</u>	7.0	<u>12.3</u>	8.3	<u>12.0</u>	8.4
Kalepa Street	<u>11.0</u>	6.9	<u>11.6</u>	6.7	<u>10.7</u>	8.0
Puhi Road	<u>11.7</u>	6.9	<u>13.5</u>	7.0	<u>12.6</u>	7.2
Maluhia Road	5.0	3.0	<u>11.7</u>	7.7	6.8	4.7

Notes: Hawaii AAQS: 10.
National AAQS: 40.
Underline indicates predicted worst-case CO concentration will exceed Hawaii AAQS.

Source: B.D. Neal & Associates, Air Quality Study, Improvements to Kaumualii Highway, Lihue to West of Maluhia Road, January 2000

Under existing (1998) conditions, predicted worst-case 1-hour CO concentrations at all four intersections are well within the National AAQS of 40 mg/m³, but concentrations at three of the intersections either equaled or slightly exceeded the State AAQS, which is 10 mg/m³. The State 1-hour CO AAQS is so stringent that it is exceeded at many locations in the State that have even moderate traffic volumes.

Under the No Build Alternative, worst-case 1-hour CO concentrations would exceed the State AAQS at all four intersections, but none would exceed the National AAQS. At all four intersections, CO concentrations would increase when compared to existing conditions, particularly at the intersection of Kaumualii Highway and Maluhia Road, due to over capacity roadway conditions.

Under the Build Alternative, worst-case 1-hour CO concentrations will exceed the State AAQS at three of the four intersections, but none were predicted to exceed the National AAQS. When compared to the No Build Alternative, predicted worst-case concentrations for 2020 will either be lower or about the same, except at the intersection of Kaumualii Highway and Kalepa Street during the afternoon peak hour.

Table 4-2 summarizes worst-case 8-hour CO concentrations at the selected intersections. Under existing (1998) conditions, estimated worst-case concentrations either equaled or slightly exceeded the State AAQS of 5 mg/m³ at three of the four intersections, but remained well within the National AAQS of 10 mg/m³. Under the No Build Alternative, all the intersections would experience increased 8-hour CO concentrations compared to the existing condition due to congested traffic conditions. All four are also predicted to exceed the stringent State AAQS under worst-case meteorological conditions. Under the Build Alternative, worst-case 8-hour CO concentrations will improve compared to the No Build Alternative because of more efficient traffic operations.

**Table 4-2
Estimated Worst-Case 8-Hour CO Concentrations
at Selected Intersections
(milligrams per cubic meter)**

Kaumualii Highway Intersection	Year 1998 Existing Condition	Year 2020 No Build	Year 2020 Build
Nawiliwili Road	<u>5.0</u>	<u>6.2</u>	<u>6.0</u>
Kalepa Street	<u>5.5</u>	<u>5.8</u>	<u>5.4</u>
Puhi Road	<u>5.8</u>	<u>6.8</u>	<u>6.3</u>
Maluhia Road	2.5	5.8	3.4

Notes: Hawaii AAQS: 5
National AAQS: 10
Underline indicates predicted worst-case CO concentration will exceed Hawaii AAQS.

Source: B.D. Neal & Associates, Air Quality Study, Improvements to Kaumualii Highway, Lihue to West of Maluhia Road, January 2000

The results of the microscale analysis reflect the assumption of worst-case meteorological conditions. For example, a wind speed of 1 meter per second with a steady direction for 1 hour was assumed. This condition is extremely unlikely and may only occur less than once a year. With wind speeds of 2 meters per second, for example, computed CO concentrations will be only about half the values given above.

4.5.4 Mitigation Measures

Implementing air quality mitigation measures for long-term traffic-related impacts are unnecessary and unwarranted because worst-case CO concentrations are well within the National AAQS. Although the more stringent State AAQS are exceeded, these standards are exceeded near many roadway intersections in the State where traffic volumes are moderate to high. Finally, the Build Alternative will result in a slight to moderate improvement in CO levels when compared to the No Build Alternative.

4.6 IMPACTS ON NOISE LEVELS

The noise impact analysis for the proposed project was based on guidance contained in SDOT's FHWA-approved Noise Analysis and Abatement Policy (October 1996) (hereinafter referred to as Noise Policy). According to the Noise Policy, noise abatement must be considered when there is a noise impact, as defined by:

- predicted traffic noise levels (one-hour $L_{eq}(h)$ parameter) approach or exceed the FHWA Noise Abatement Criteria (NAC); or
- predicted traffic noise levels (one-hour $L_{eq}(h)$ parameter) substantially exceed the existing noise levels.

"Approach" means attain a noise level 1 dBA less than the NAC and "substantially exceed the existing noise levels" means an increase of at least 15 dBA.

Using input from the traffic study conducted for this project (Austin, Tsutsumi & Associates, Inc, July 1998) as well as noise monitoring data as reported in Section 3.6.2, FHWA's Traffic Noise Prediction Model (TNM Version 1.0b) was used to calculate existing and future peak noise levels at the two sensitive receptors for the year 2020: Welau Street residences and West Puhi residences. The future noise levels were calculated for both the No Build and Build conditions. Table 4-3 provides the results of the traffic noise modeling analysis.

As indicated on Table 4-3, the Build Alternative will slightly reduce traffic noise levels at the residential areas studied in comparison to the No Build Alternative. The Build Alternative will

not cause the NAC to be approached or exceeded at the sensitive receptors, nor will it cause a substantial increase in noise per the Noise Policy.

Table 4-3
Existing and Projected Peak Traffic Noise Levels ($L_{eq}(h)$)

Sensitive Receptor ¹	Peak Period	Existing Level	Predicted Noise Levels	
			No Build	Build
Welau Street residences	AM	61	63	62
	PM	58	61	60
West Puhi residences	AM	67	69	65
	PM	64	68	65

Notes: ¹ Modeling site for Welau Street residences was set at 69 m (225 feet) from Kaumualii Highway. Modeling site for West Puhi residences was set at 25 m (82 feet) from Kaumualii Highway.

Source: D.L. Adams Associates, Ltd., February 2000.

Noise abatement measures must be considered if a traffic "noise impact" is identified. Since the Build Alternative will not cause traffic noise impacts, noise abatement measures do not have to be considered.

4.7 IMPACTS ON WATER RESOURCES

4.7.1 Surface Water

Despite creating additional impervious roadway surface by the addition of two lanes, shoulders and sidewalks, the Build Alternative will maintain existing surface water drainage patterns. The flow in the natural streams and irrigation and drainage ditches that cross Kaumualii Highway will continue at present rates, and therefore possible flooding impacts or drainage of wetland areas will not occur. Existing culverts and piping that convey drainage under the road will be extended or reconstructed to accommodate the additional roadway lanes, widened median and shoulders. The flow capacities of the streams and ditches will be maintained. Lihue Mill Bridge and Huleia Bridge will remain in place, and new bridges will be constructed for the additional roadway lanes.

The Build Alternative will fill a small 500 m² (5400 square feet) pond near Maluhia Road on the north (mauka) side of Kaumualii Highway. The USACE does not consider this pond and the

nearby irrigation system that feeds this pond to be "Waters of the U.S". Therefore, according to the USACE, the pond is not regulated under Section 404 of the Clean Water Act.

The level of roadway-related pollutants (petroleum products, rubber, etc.) entering surface waters due to roadway run-off will likely be the same under the Build and No Build Alternatives because total vehicle-miles traveled (VMT), an indicator of roadway-related pollution, will be the same under both alternatives. VMT will increase under both alternatives as population and tourism increase. However, roadway pollution under the Build Alternative will be slightly less than roadway pollution under the No Build Alternative because it will result in lower total vehicle hours traveled. Due to the reduction in traffic congestion under the Build Alternative (see Section 4.4.1.1), motorists on average will spend less time traveling on Kaunualii Highway.

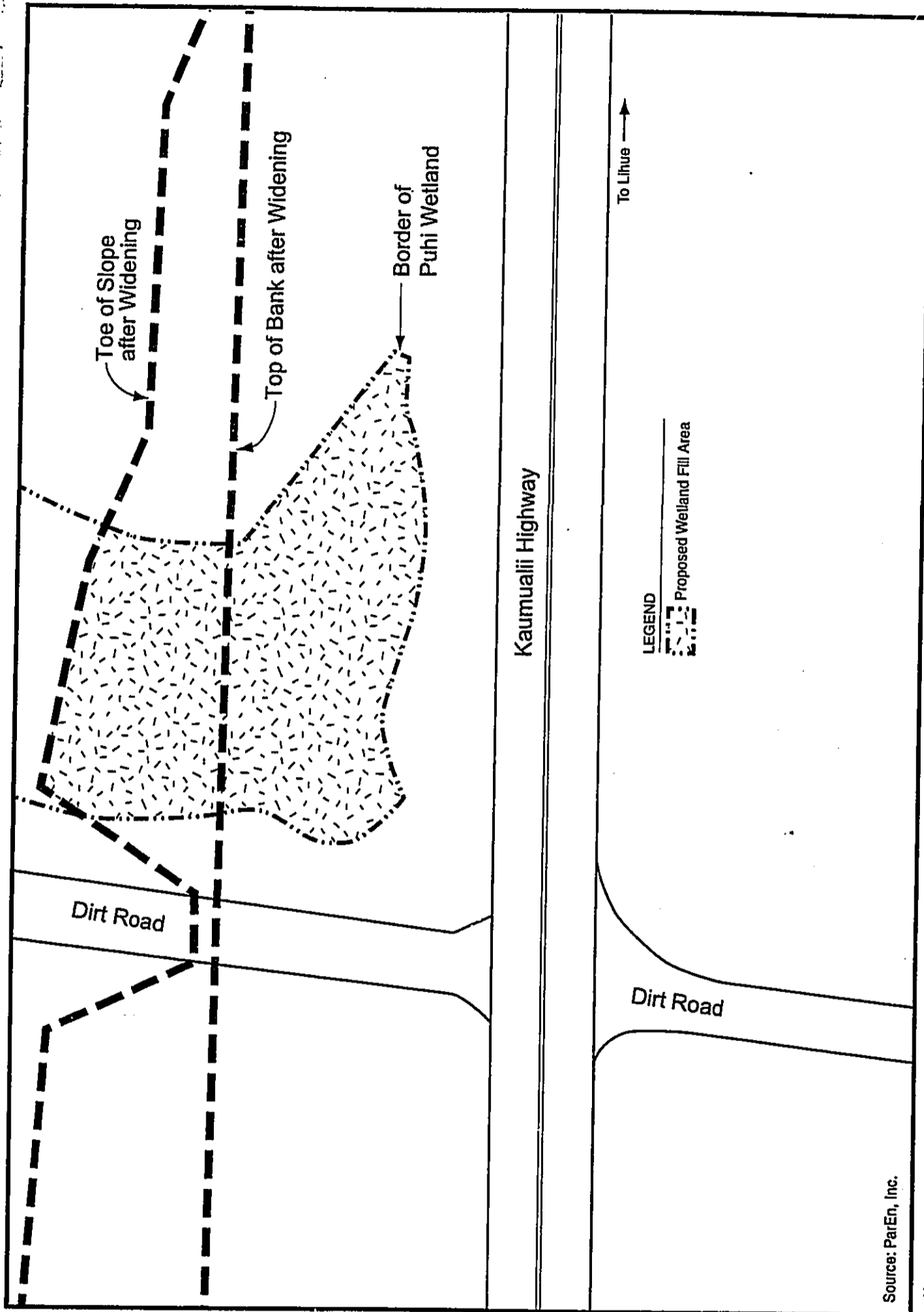
4.7.2 Groundwater

As described in Section 3.7.2, there is no USEPA-designated principal or sole-source aquifer in the project area. Therefore, the requirements pertaining to potential impacts to such a resource under Section 1424(e) of the Safe Drinking Water Act do not apply to the proposed project.

The Department of Land and Natural Resources Commission on Water Resource Management (CWRM) stated in a letter dated September 30, 1998 that construction activities at Haupū Range (Knudsen Gap) could affect dike structures, but acknowledged it is uncertain whether groundwater would be encountered. If groundwater is encountered, mitigation will be implemented (see Section 4.7.5).

4.7.3 Wetlands

One wetland identified by the U.S. Army Corps of Engineers (USACE) will be affected by the project. The Build Alternative will partially fill approximately 0.1 ha (0.25 acres) of Puhi Wetland (previously identified as wetland #4) (see Figure 4-5). The Build Alternative will avoid filling any parts of Weoweopilau Wetland (previously identified as wetland #2) and the Maluhia Road Wetlands, two wetland areas located on both sides of Maluhia Road, south (makai) of Kaunualii Highway. Although Maluhia Road Wetland 1 is located close to the Kaunualii



Proposed Fill Area at Puhi Wetland
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FIGURE 4-5

Highway and the Maluhia Road intersection, widening to the north (mauka) side of Kaumualii Highway will not affect this wetland area.

The proposed fill at Puhi Wetland will require a Department of the Army (DA) Permit under Section 404 of the Clean Water Act. However, because of the relatively small size of this fill (0.1 ha (0.25 acre)), the proposed fill will be covered under a Nationwide Permit. A Section 401 Water Quality Certification will be required from the State Department of Health (SDOH), pursuant to Section 401(a)(1) of the federal Water Pollution Control Act.

4.7.4 Floodplains

The amount of additional paved surface under the Build Alternative, which includes lanes, shoulders and sidewalks, but not the median and adjacent grading, will total approximately 16 hectares (40 acres). Spread over a distance of 12 kilometers (7.5 miles), this amount is very small in comparison to the size of the total regional watershed. Therefore, the Build Alternative will not create a regionally significant increase in runoff volume.

Hydraulic analyses (ParEn, Inc., April 2000) were conducted to determine floodplain impacts of the additional bridge structures proposed over Nawiliwili and Huleia Streams. The results indicate that the base flood elevations at these streams will not change, and therefore, flooding risks will not change in comparison to the No Build Alternative.

The Build Alternative will not induce floodplain development because no access to the floodplain will be provided from Kaumualii Highway. The Build Alternative will not require a revision of the regulatory floodway.

4.7.5 Mitigation Measures

The highway drainage system will be designed to maintain existing surface water movements, and not cause draining of wetlands or changes in ponding.

SDOT will coordinate with CWRM to mitigate any impacts to dike structures should they be encountered during construction at Knudsen Gap. If groundwater is encountered during construction, the contractor will be required to reseal exposed compartments as soon as possible. CWRM recommended bulkheading (see Appendix A).

To mitigate the 0.1 ha (0.25 acre) fill at Puhi Wetland, the drainage system for the east fork of Puhi Stream, the water source of Puhi Wetland, will be designed so that the flow of Puhi Stream will not drain the remaining wetland nor inundate it. In addition, the wetland losses will be replaced at a location probably upstream from the existing wetland, at a ratio of at least one to one. Coordination with USACE, USEPA, and the U.S. Fish and Wildlife Service (USFWS) is continuing to establish the mitigation site and ratio. These details will be resolved in the design phase of the project in the context of the permit process.

4.8 IMPACTS ON ECOSYSTEMS

4.8.1 Flora

The No Build Alternative would not have an impact on the terrestrial flora of the region.

The Build Alternative will clear approximately 35 ha (86 acres) of vegetational communities composed of urban landscape, agriculture, and unused fallow lands. Cropland impacts are discussed in Section 4.2. Despite the area that will be converted to roadway infrastructure, the Build Alternative is not expected to cause an adverse impact on the region's botanical resources because the vegetational communities that will be directly affected are regionally abundant (see Section 3.8.1). The most notable impact on floral resources will be the displacement of several swamp mahogany (*Eucalyptus robusta*) trees located on the north (mauka) side of the highway near the Maluhia Road intersection. These trees are not part of the Maluhia Road tree tunnel, which is composed of swamp mahogany trees. These trees are also not listed as threatened or endangered by the USFWS.

4.8.2 Fauna

The No Build Alternative would not affect existing faunal conditions.

The Build Alternative could displace existing faunal habitats along Kaumualii Highway because of the area extent of the roadway widening. However, the faunal habitats that will be displaced are abundant in the region.

4.8.3 Threatened and Endangered Species

The USFWS and the State of Hawaii Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) were consulted (see Appendix B) regarding possible impact to threatened and endangered species (see Section 3.8.3). The USFWS may impose requirements upon federal agencies regarding endangered or threatened species and critical habitat under Section 7 of the Endangered Species Act of 1973. The USFWS noted the possible presence of endangered Hawaiian waterbirds (Hawaiian duck (*Anas wyvilliana*), Hawaiian stilt (*Himantopus mexicanus*), Hawaiian coot (*Fulica alai*), and Hawaiian moorhen (*Gallinula chloropus*)) and the endangered Hawaiian Hoary Bat (*Lasiurus cinereus semotus*) in the project area. USFWS and DOFAW also noted the problem of migrating seabirds (the endangered Hawaiian dark-rumped petrel (*Pterodroma phaeopygia sandwichensis*) and the threatened Newell's shearwater (*Puffinus newelli*)) being attracted to highway lighting.

A discussion of the likelihood that the project will jeopardize the continuing existence of these species is provided below. Based on this information, the FHWA determined that the Build Alternative will not likely adversely affect the species identified by the USFWS in their January 31, 2000 letter. In accordance with Section 7, FHWA requested concurrence from the USFWS with this determination in a letter dated March 10, 2000 (see Appendix B). In a letter dated April 11, 2000, the USFWS concurred with the FHWA determination (see Appendix B). Unless circumstances change (e.g., proposed project is substantially modified, or a new Federal Trust species is identified in the project area), the requirements of Section 7 of the Endangered Species Act have been satisfied.

Hawaiian Waterbirds

According to the Recovery Plan for the Hawaiian Waterbirds (1977), the primary habitats for endangered waterbirds are Waita Reservoir, the settling basins in the Koloa area, and the Huleia National Wildlife Refuge (NWR). Primary habitat provides all the requirements for completion of a species' annual life cycle. The Draft Revised Recovery Plan for Hawaiian Waterbirds (May 1999) was less site specific, but did identify core wetland habitat at Huleia NWR and the Koloa wetlands. These wetland areas are over 3 km (2 miles) south of and downstream from the project area.

The Draft Waterbird Plan noted several factors contributing to the decline or prevention of recovery of Hawaiian waterbirds:

- loss of wetland habitat;
- indiscriminate hunting;
- introduction of predators;
- altering the hydrology of wetland areas;
- invasion of habitat by alien plants;
- interbreeding between similar species;
- avian disease; and
- introduction of environmental contaminants.

The Build Alternative will not contribute to any of the above factors because most of them are not applicable to the proposed project. The Build Alternative will not fill any of the wetlands identified as primary or core habitat. The only wetland fill proposed by the Build Alternative will be approximately 0.1 ha (0.25 acres) (see Section 4.7.3). According to the wetland delineation survey conducted by the USACE (see Appendix F), this wetland does not function as waterbird habitat. In addition, despite primary habitat areas being downstream from the project area, they will not be indirectly affected by the Build Alternative because drainage patterns of the streams and ditches that cross Kaunualii Highway will not be altered, and the level of roadway-related pollution will not be different than under the No Build Alternative (see Section 4.7.1).

Hawaiian Hoary Bat

According to the USFWS website, relatively little research has been conducted on the habitat and population status of the Hawaiian hoary bat. The Recovery Plan for the Hawaiian Hoary Bat (April 1998) stated that the bat is found primarily in open areas near forests and occasionally in drier areas. They are rarely found in towns or over open fields. A survey conducted in the late 1980s (USFWS, April 1998) indicated that the bat appears to be limited to the northern forested zones of the island, which was supported by recent anecdotal evidence (USFWS, April 1998). The USFWS has not designated protected habitat for the bat.

The Build Alternative will not likely affect Hawaiian hoary bat roosting sites. The Hawaiian Hoary Bat Plan stated that the availability of roosting sites rather than food availability, predation or other factors is believed to be the primary limitation to the distribution and abundance of many bat species. The areas that will be used by the Build Alternative are open space, either near urban areas or open fields that were recently used for large-scale agriculture. Therefore, based on the description of preferred habitat types in the Hawaiian Hoary Bat Plan, the terrain that will be affected by the roadway widening does not appear to be the type of habitat favored by the Hawaiian hoary bat.

Migrating Seabirds

According to DOFAW (see letter dated September 14, 1998 in Appendix B), young fledgling Newell's shearwaters are attracted to bright lights and headlights of cars when flying at sea (The DOFAW letter did not mention the Hawaiian dark-rumped petrel but the same light attraction occurs with this species as well.). They become momentarily blinded by the lights and are unable to see utility wires, or sometimes become confused, landing on the highway or brightly lit areas. DOFAW stated that many injured Newell's shearwater birds have been recovered along Kaunualii Highway, particularly in Kukui Grove, Puhi and the Maluhia Road intersection.

For traffic safety reasons, both the Build and No Build Alternatives will include highway lamps at certain locations, such as at intersections and populated areas. Some of these locations already have highway lamps. Therefore, the attraction of migrating seabirds to highway lighting will continue under both alternatives. However, lighting to be provided by the Build Alternative will be designed to reduce glare and shield light from migrating seabirds, as recommended by DOFAW (see September 14, 1998 letter) (see Section 4.8.4).

4.8.4 Mitigation Measures

Losses of floral communities will be partially mitigated by landscaping, which will enhance the appearance of the highway. Native trees and shrubs will be used where landscaping is to be provided. These plants are already adapted to local growing conditions and will require less water and soil amendments. Irrigation will not be provided along much of the highway. Interested organizations, such as the Kauai Outdoor Circle, will be contacted for suggestions

about plantings. A landscaping plan will be developed and completed during the project's design phase.

The swamp mahogany trees displaced by the Build Alternative will be relocated to bare spots along the Maluhia Road tree tunnel under the supervision of a certified arborist. In addition, other trees to be displaced that warrant preservation or relocation will be identified with the assistance of interested organizations, even though these trees are not federal Trust Species and may not be native. Any relocation of trees will be conducted under the supervision of a certified arborist.

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.

4.9 GEOLOGY, PHYSIOGRAPHY, SITE CONTAMINATION AND NATURAL HAZARDS

4.9.1 Geologic And Physiographic Setting

The Build and No Build Alternatives will not affect the geologic conditions of the study area, nor will they substantially change the study area's topographic features.

4.9.2 Natural Hazards

Since Kaumualii Highway serves the population in southern Kauai, it is a crucial component of the evacuation plan in the event of a coastal hazard, such as a hurricane or tsunami. The Build Alternative will boost coastal evacuation capacity by providing two additional lanes on Kaumualii Highway. The No Build Alternative would not change the level of evacuation capacity on Kaumualii Highway.

4.10 IMPACTS ON HISTORIC RESOURCES

4.10.1 Section 106

Section 106 of the National Historic Preservation Act of 1966 requires that federal agencies consider the effect of their projects on any resource listed on or eligible for the National Register of Historic Places, in coordination with the State Historic Preservation Officer (SHPO). The Advisory Council on Historic Preservation (ACHP) is given an opportunity to review project impacts if appropriate. There are two basic steps in the Section 106 process: (1) identify historic properties in the project's area of potential effects (APE); and (2) assess effects, and if necessary, mitigate adverse impacts.

Section 3.10 documents the activities performed to comply with Step 1.

In assessing the effects of a project on a historic property (Step 2), there can only be one of the following three findings under Section 106:

- no historic properties affected;
- no adverse effect; and
- adverse effect.

"No historic properties affected" means that either there are no historic properties present or there are historic properties present but the undertaking will have no effect upon them of any kind (that is, neither harmful nor beneficial). An "effect" means alteration of those characteristics of a historic property that qualify it for inclusion in or eligibility for the National Register.

"No adverse effect" means that there could be an effect, but the effect would not be harmful to those characteristics that qualify the property for inclusion in the National Register. In other words, it would not diminish or adversely affect the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

An "adverse effect" means an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting,

materials, workmanship, feeling, or association. If an "adverse effect" is determined for an historic property, a Memorandum of Agreement (MOA) between the federal agency and the SHPO is executed. The MOA specifies the mitigation measures to be followed.

4.10.2 Potential Impacts

In accordance with Section 106 regulations, the FHWA conducted effect determinations on the historic properties in the APE. The results are summarized on Table 4-4.

As described in Section 2.2.1, an exclusive south (Alignment A) or north (Alignment B) widening was eliminated from consideration because it was found that a combination of the two could achieve the purposes and needs of the project while avoiding impacts on historic properties in the APE. In the area of Lihue Mill and Lihue Public Cemetery, the highway will be widened on the north (mauka) side, which is the opposite side from these historic properties. In the area of Kilohana, the highway will be widened on the south (makai) side, opposite from this historic building and the small residence in this property. In the area of the Grove Farm office building, the highway will be widened on the north (mauka) side, opposite the historic property.

**Table 4-4
Section 106 Effect Determinations**

Historic Property	Effect Determination
Lihue Mill	No Adverse Effect
Lihue Mill Bridge	Adverse Effect
German Hill Historic District	No Adverse Effect
Hoomana Overpass Bridge	No Adverse Effect
Lihue Public Cemetery	No Adverse Effect
Kilohana	No Adverse Effect
Residence adjacent to Kilohana	No Adverse Effect
Grove Farm administrative office building	No Adverse Effect

Source: Federal Highway Administration, March 2000.

Although Kaumualii Highway will be widened toward Hoomana Overpass Bridge, the bridge itself will not be displaced or altered. Therefore, FHWA rendered a "no adverse effect" determination. Since Hoomana Road will be re-aligned (see Section 2.1.2), the use of the

bridge for vehicular access to German Hill will no longer be needed. However, the bridge will be used for pedestrian and cycling access between the neighborhood and Kaunualii Highway.

The FHWA rendered a "no adverse effect" determination regarding the German Hill historic district despite the need to displace one of the residences in the district. The historic integrity of the district will not be affected because the residence is located at the extreme southern edge of the district, and the remaining houses and church will remain a cohesive unit. Based on information obtained from SHPD, the residence is not individually historic.

The FHWA rendered an "adverse effect" determination on Lihue Mill Bridge because the Build Alternative will widen the bridge deck and replace its steel railings with new railings. Although the new railings will be selected in part for their aesthetic features, while still meeting highway safety standards, the unique characteristics that make the bridge historic will be altered.

The effect determinations summarized on Table 4-4 were submitted to the SHPO for concurrence in a March 20, 2000 letter (see Appendix B). The SHPO concurred with the effect determinations in a letter dated March 28, 2000 (see Appendix B).

4.10.3 Mitigation Measures

As described in Section 4.1.4, the owner-occupant of the residence that will be displaced will be provided with relocation assistance. However, if the house is moveable, the house could be relocated in the district if suitable property can be found and the owner is agreeable. If the house is razed, photo documentation of the house will be obtained, in addition to what is currently in the State Historic Preservation Division files.

In accordance with Section 106 regulations, a MOA was prepared because of the "adverse effect" determination regarding Lihue Mill Bridge (see Appendix B). The MOA specifies that photographic and written documentation of Lihue Mill Bridge will be conducted, in accordance with the Historic American Building Survey (HABS) standards.

In the event an unknown historic or archaeological site is discovered during construction, all work will stop and the SHPD will be informed and consulted on the appropriate treatment measures.

4.11 SECTION 4(F) IMPACTS

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 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.

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."

The Build Alternative will not use lands from publicly-owned public parks or recreational facilities, or wildlife and waterfowl refuges, because there are no such resources immediately adjacent to the highway within the project limits. The Build Alternative will not use the future park to be located south (makai) of Kaumualii Highway, west of Nuhou Street.

An historic site falls within the protection afforded by Section 4(f) only if it is on or eligible for the National Register of Historic Places. The Build Alternative will use property from two historic sites (properties): Lihue Mill Bridge and the German Hill historic district. Section 4(f) applies to the use of Lihue Mill Bridge because the Build Alternative will adversely affect the historic integrity of this bridge (the criteria for which the bridge was designated historic) by replacing the bridge's existing railings (see Section 4.10.2).

Under the No Build Alternative, Lihue Mill Bridge would temporarily remain as is, but SDOT would eventually have to replace the railings with FHWA-approved railings for safety reasons because of their deterioration. This work may not involve federal funds, and if federal funds are not involved, Section 4(f) would not apply.

Section 4(f) does not apply to the use of the German Hill historic district because displacement of the affected residence will not alter the historic integrity of the district. The residence is not individually historic, nor is it an integral part of the district.

The "use" of an historic bridge can be covered under one of FHWA's programmatic Section 4(f) evaluations. Under a programmatic Section 4(f) evaluation, if a project meets specified conditions, it satisfies the requirements of Section 4(f). To use the programmatic Section 4(f) evaluation for historic bridges, the proposed project must meet the following criteria:

1. the bridge will be replaced or rehabilitated with federal funds;
2. the bridge proposed to be "used" is on, or eligible for, the National Register of Historic Places;
3. the bridge to be "used" is not a National Historic Landmark; and
4. the project does not require the preparation of an environmental impact statement.

Since the proposed project meets all four of the above criteria, the Programmatic Section 4(f) Determination and Approval form for the use of historic bridges was used (see Appendix B). Therefore, it has been determined by the FHWA that there are no feasible and prudent alternatives to the use of the historic Lihue Mill Bridge.

4.12 IMPACTS ON VISUAL AND AESTHETIC RESOURCES

None of the alternatives will affect the viewsheds of the Haupu Range and Maluhia Road "tree tunnel" described in Section 3.11. The visual quality of these resources will not be adversely affected because none of the alternatives will visually encroach upon views of these resources.

4.13 CONSTRUCTION IMPACTS AND MITIGATION

4.13.1 Maintenance of Traffic

Construction will cause motorists traveling on Kaunualii Highway to experience some delay and inconvenience for the duration of construction. However, since most of the work will occur alternately on either the north (mauka) or south (makai) side of the highway, lane closures will not be necessary during most of the construction, and the existing two lanes of traffic will remain open. Even when construction work is being done along the existing Kaunualii Highway (e.g. repavement, construction of sidewalks, etc.), activities will be phased so that the new section of the highway will already be completed, and will be used to detour the two lanes of traffic around the construction site, minimizing traffic delays. If closure of a lane(s) is absolutely necessary, it will be restricted to off-peak hours.

Access to residences and businesses along Kaunualii Highway will be maintained. For example, Hoomana Road will be re-aligned to maintain access to German Hill before highway widening is conducted in this area. Also, if any intersection is closed temporarily during construction, provisions will be made to detour traffic around these closures. During final design, detailed Work Zone Traffic Control Plans that include detour plans will be formulated.

Even with an effective maintenance of traffic plan, construction-related detours and traffic disruptions could cause inconveniences to local residents, and may cause certain businesses, such as in Puhi and Kukui Grove, to lose revenue temporarily.

4.13.2 Air Quality

Air quality impacts during roadway construction generally consist of fugitive dust and mobile source emissions from construction equipment. Air quality degradation can occur due to disruption of normal traffic flow. However, this is not anticipated to occur because two lanes of traffic will be maintained for the most part during construction (see Section 4.13.1)

Fugitive dust is airborne particulate matter, of usually large particle size, generated by construction vehicles operating around construction sites and material blown from uncovered haul trucks, stockpiles, and exposed areas. The emission rate for fugitive dust emissions from construction activities is difficult to estimate accurately because its generation varies greatly

depending upon the type of soil, the amount and type of dirt-disturbing activity, the moisture content of exposed soil, and wind speed. A rough estimate from the USEPA is 1.2 tons per acre per month under conditions of "medium" activity, moderate soil silt content (30%), and precipitation/evaporation (P/E) index of 50. Nevertheless, State Air Pollution Control Regulations prohibit visible emissions of fugitive dust.

Frequent watering will control fugitive dust at construction sites. In addition, wind screens will be used in areas near residences and commercial districts, as well as limiting the areas of disturbance at any given time. Landscaping will be established as early as possible. To prevent haul trucks from tracking dirt onto paved streets, tire washing or road cleaning may be appropriate. State regulations further stipulate that open-bodied trucks be covered at all times when in motion if they are transporting wind-erodible materials.

Construction vehicles will emit engine exhaust. The largest of this equipment is usually diesel-powered, which emit relatively highway levels of NO_x in comparison to gasoline-powered equipment. However, standards for such pollutants are set on an annual basis and will therefore not likely be violated by short-term construction equipment emissions.

4.13.3 Noise

Construction will involve the use of heavy machinery that may cause temporary noise impacts to adjacent noise sensitive land uses. Table 4-5 presents maximum noise levels (L_{max}) of heavy mobile construction equipment and compressors measured at a distance of 15 m (50 feet). Construction will normally occur during daylight hours when occasional loud noises are more tolerable. In addition, most of the construction site will not be near noise sensitive land uses. Therefore, extended noise disruptions to normal activities are not anticipated.

Since the State Department of Health (SDOH) maintains community noise control standards (HAR Section 11-46) that apply to construction noise, these specifications will be followed.

4.13.4 Water Resources

The primary potential for construction-phase water resource impacts will be associated with erosion and sedimentation associated with the project's clearing and earthmoving activities, and alteration of existing drainage patterns.

**Table 4-5
Construction Equipment Noise Levels**

Source	L _{max} (dBA) at 15 m (50 ft)	Model Tested
Backhoe	85	John Deere 609A
Front Loader	84	Caterpillar 980
Dozer	84	Caterpillar D7e
Grader	91	Caterpillar 16
Scraper	92	Caterpillar 660
Compressor	80-89	Various Tested
Pile Driver	95-100	Various Tested

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

Stormwater 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;
- immediate planting of vegetation and/or mulching on highly erodible or critical 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 SDOH when they issue the National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge Permit for this project, and the County will also require specific measures when they issue the Grading, Grubbing, Stockpiling and Excavation Permit.

The USFWS requested in a letter dated September 23, 1998, and repeated during a meeting held on December 21, 1999, that the following measures be implemented during construction to minimize adverse impacts on aquatic species downstream of the project site, including those in Huleia National Wildlife Refuge:

- no materials be stockpiled in any aquatic environment;
- any equipment placed in any surface water be free of pollutants;
- no disposal of trash and debris in any aquatic environment;
- contingency plan to prevent contamination of aquatic environments in the event of an accidental petroleum product spill; and
- silt containment measures be implemented.

The project will implement all of the measures above.

4.13.5 Solid Waste Management and Hazardous Waste

Project construction will require excavation, filling and grading activity. Excavated materials will be used elsewhere on the project for fill.

Good housekeeping practices will be required of the contractor, such as ensuring that:

- all waste materials be collected and stored in securely lidded metal dumpsters and not buried on site;
- materials stored on-site be stored in a neat, orderly manner in appropriate containers (i.e., per manufacturers recommendations);
- all on-site vehicles be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage; and
- a spill prevention and clean-up plan is prepared and implemented if needed.

All sanitary waste generated during the construction phase will be collected from portable units as required.

The information provided in Section 3.9.2 indicates the potential for site contamination in the construction site. However, identification of a site as a potential source of contamination does not necessarily mean that contamination has been positively identified. If contamination is identified during construction, the contractor will report it immediately to SDOT and SDOH. Handling of hazardous materials and possible remediation of the contaminated site will be required in accordance with applicable State and federal laws, which specify the handling, treatment, and disposal of contaminated materials.

4.13.6 Historic and Archaeological Resources

Construction activity could encounter undocumented archaeological sites, although such discoveries are unlikely given the extent of prior land disturbance in the corridor. If a potential archaeological site, such as a burial, is uncovered during construction, work will stop and the SHPD will immediately be notified. Construction will resume upon approval of the appropriate authorities.

4.13.7 Utilities

The overhead electrical lines owned by Citizen's Utilities Company, Kauai Electric Division, and telephone lines owned by GTE Hawaiian Telephone will be relocated under the Build Alternative. In addition, water transmission lines, which are located within the Kaunualii Highway right-of-way from Lihue to Puhi, and an existing 20 cm (8-inch) sewer line that crosses Kaunualii Highway from Kauai Community College, may also be relocated.

Substantial planning, including coordination with utility providers, will occur to minimize interruptions in utility service to customers. Disruptions to utility service, if necessary, will be restricted to short-term localized events. Careful scheduling of these disruptions and prior notification of properties that will be affected will mitigate some of the utility relocation impacts.

4.14 PERMITS AND APPROVALS

The following permits or approvals will be required prior to the construction of the project.

Federal

- USACE - Section 404 permit (Nationwide)

State

- SDOH - National Pollutant Discharge Elimination System (NPDES) permit
- SDOH - Water Quality Certification
- State of Hawaii Department of Land and Natural Resources – Stream Channel Alteration Permit
- DBEDT, Office of Planning - Coastal Zone Management consistency concurrence

County

- Department of Public Works (DPW)- Grading, Grubbing, Stockpiling and Excavation permit

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CHAPTER FIVE
Comments and Coordination

CHAPTER 5 COMMENTS AND COORDINATION

This chapter summarizes public and agency consultation and coordination activities associated with this project that have been conducted to date. Project scoping and coordination activities included public information meetings; correspondence with government agencies, landowners, and environmental organizations; and meetings with government agencies and other interested parties. A summary of these activities is provided in this chapter. This chapter also provides a record of all the written and oral comments received during the Draft EA comment period, and at the project's formal public hearing. Responses from the State of Hawaii Department of Transportation (SDOT) to each comment received during the Draft EA comment period are included in this chapter. Other chapters of this document were revised as appropriate in response to the comments received on the Draft EA.

5.1 SCOPING AND AGENCY CONSULTATION

Coordination with the following agencies, organizations and landowners was conducted throughout the scoping process (see Appendix A). These agencies and organizations were either asked to provide information to help prepare the EA or provide comments on potential impacts to certain properties or resources.

State Agencies

- Department of Land and Natural Resources, Commission on Water Resource Management
- Department of Business, Economic Development and Tourism, Office of Planning

County of Kauai Agencies

- Planning Department
- Department of Public Works
- Department of Water
- Transportation Agency

Other Organizations

- AMFAC Land Company, Limited (Lihue Plantation)

- Grove Farm Properties, Inc.
- Island School
- Kauai Community College
- Kauai Electric Company
- Kauai Humane Society
- Kauai Outdoor Circle
- Kaumualii Investment Company & Koamalu Associates
- Kilohana/Wilcox Trust
- Knudsen Trust
- Lihue Public Cemetery Association

Since the project will require compliance with certain environmental laws and regulations, coordination and consultation with the following agencies and organizations were conducted as described below.

Section 7 of the Endangered Species Act

This law requires that actions that are federally funded, authorized or carried out be done in a manner so as to not jeopardize the continued existence of any plant or animal species listed as threatened or endangered, or destroy or adversely modify any designated critical habitat. The Section 7 process involves consultation with either the U.S. Fish and Wildlife Service or the National Marine Fisheries Service depending on the potentially affected species. The following consultation and coordination activities were conducted on behalf of the project (see Appendix B).

- U.S. Department of the Interior, Fish and Wildlife Service (USFWS)
 - August 6, 1998 letter from ParEn, Inc. to USFWS requesting review of avifaunal and feral mammal survey conducted for the project
 - September 23, 1998 letter from USFWS to ParEn, Inc. providing information on possible threatened and endangered species in the project area
 - February 10, 1999 letter from ParEn, Inc. requesting review of the project's Preliminary Draft EA
 - March 11, 1999 letter from USFWS to ParEn, Inc. providing comments on the Preliminary Draft EA

- December 5, 1999 letter from the Federal Highway Administration (FHWA) requesting review of the species list provided in the September 23, 1998 letter
- January 31, 2000 letter from the USFWS to FHWA confirming species list
- March 10, 2000 letter from FHWA to USFWS requesting concurrence on the finding that the proposed project is not likely to cause an adverse effect on federal trust species identified by the USFWS
- April 11, 2000 letter from the USFWS to FHWA concurring with the finding that the proposed project is not likely to cause an adverse effect on federal trust species
- State of Hawaii Department of Land and Natural Resources (DLNR), Division of Forestry and Wildlife (DOFAW)
 - September 11, 1998 letter from ParEn, Inc. to DOFAW requesting review of avifaunal and feral mammal survey conducted for the project
 - September 14, 1998 letter from DOFAW to ParEn, Inc. providing information on potential impacts on Newell's Shearwater (*Puffinus auricularis*)

Section 106 of the National Historic Preservation Act

This law requires that actions that are federally funded, authorized or carried out take into account the effect of such actions on any district, site, building, structure or object that is included in or eligible for inclusion in the National Register of Historic Places (such resources are called historic properties). The Section 106 process involves coordination and consultation the State Historic Preservation Officer, and other agencies and organizations that have an interest in or is mandated to protect historic properties. In addition, the Advisory Council on Historic Preservation is afforded the opportunity to comment on actions that may potentially affect historic properties. The following consultation and coordination activities were conducted on behalf of the project (see Appendix B).

- DLNR State Historic Preservation Division (SHPD)
 - August 6, 1998 letter from ParEn, Inc. to the DLNR State Historic Preservation Division (SHPD) requesting review of the archaeological assessment report prepared for the project
 - August 24, 1998 letter from SHPD to ParEn, Inc. concurring with the findings of the archaeological assessment

- September 9, 1998 and September 24, 1998 letters from ParEn, Inc. to SHPD providing information on project plans to modify Lihue Mill Bridge and Hoomana Overpass Bridge
- October 9, 1998 letter from SHPD to ParEn, Inc. concurring on plans for Hoomana Overpass Bridge, and disagreeing on certain modifications planned for Lihue Mill Bridge
- November 16, 1999 coordination meeting involving FHWA, ParEn, Inc. and Parsons Brinckerhoff (PB) to discuss modifications to Lihue Mill Bridge and consultation requirements per Section 106 regulations
- December 28, 1999 letter from SHPD to PB concurring on list of project Section 106 consulting parties
- March 9, 2000 coordination meeting involving FHWA and PB to discuss upcoming effect determinations on historic properties in the project's Area of Potential Effect (APE)
- State Historic Preservation Officer (SHPO)
 - March 20, 2000 letter from FHWA to the SHPO requesting concurrence on effect determinations on historic properties in the APE
 - March 28, 2000 letter from the SHPO to FHWA concurring with effect determinations
- December 23, 1999 letters from the State of Hawaii Department of Transportation, Highways Division, Kauai District (SDOT) to the following agencies and organizations requesting review of the archaeological assessment prepared for the project and information on historic properties not previously identified:
 - Office of Hawaiian Affairs (OHA)
 - State of Hawaii Department of Hawaiian Homelands
 - Historic Hawaii Foundation
 - Kauai Historic Preservation Review Commission
 - Kauai Hawaiian Civic Club (available address not valid; letter and report returned)
 - Kauai Historical Society.
- January 13, 2000 public information meeting held at Wilcox Elementary School to discuss potential project impacts on historic properties (see Appendix A for meeting summary)
- Office of Hawaiian Affairs (OHA)

- January 14, 2000 letter from OHA to SDOT providing comments on the archaeological assessment
- February 1, 2000 letter from SDOT to OHA responding to comments provided in the January 14, 2000 letter
- Kauai Historic Preservation Review Commission (KHPRC)
 - February 2, 2000 presentation to the KHPRC, requesting information on historic properties in project area
 - February 4, 2000 Memorandum from KHPRC to SDOT providing list of additional historic properties in project area
 - June 14, 2000 Memorandum from KHPRC to PB commenting on the project's Draft Memorandum of Agreement regarding the replacement of the steel railings of Lihue Mill Bridge
- Advisory Council on Historic Preservation (ACHP)
 - June 14, 2000 letter from FHWA to ACHP requesting comments on the project's Draft Memorandum of Agreement regarding the replacement of the steel railings of Lihue Mill Bridge
 - June 22, 2000 letter from ACHP to FHWA declining participation in the consultation to resolve the adverse effect on Lihue Mill Bridge

Section 404 of the Clean Water Act

This law prohibits the discharge of dredged materials into the waters of the U.S., which include non-navigable streams, wetlands and mudflats, unless the U.S. Army Corps of Engineers (USACE) provides a permit. The Section 404 process for this project involved coordination and consultation the USACE, the U.S. Environmental Protection Agency (USEPA) and the USFWS. The following consultation and coordination activities were conducted on behalf of the project (see Appendix B).

- U.S. Department of the Army, Corps of Engineers (USACE)
 - February 10, 1999 letter from ParEn, Inc. to USACE requesting review of the Preliminary Draft EA
 - February 23, 1999 letter from USACE to ParEn, Inc. stating that the project requires a Department of Army permit

- April 7, 1999 meeting involving USACE-Civil Works, FHWA, SDOT, ParEn, Inc. and PB to discuss the delineation of wetlands in the study area
- December 8, 1999 meeting involving USACE-Civil Works, FHWA, SDOT, ParEn, Inc. and PB to discuss Section 404 permitting and consultation requirements in compliance with the National Environmental Policy Act/Section 404 Memorandum of Understanding (MOU)
- December 16, 1999 letter from FHWA to USACE inviting USACE to be a cooperating agency on the NEPA EA
- December 10, 1999 meeting with the U.S. Environmental Protection Agency (USEPA) in accordance with the MOU, involving FHWA, SDOT, ParEn, Inc., and PB, to discuss potential impacts to wetlands in study area
- December 21, 1999 meeting with the USFWS in accordance with the MOU, involving FHWA, SDOT, ParEn, Inc., and PB, to discuss potential impacts to wetlands in study area
- March 2, 2000 agency coordination meeting involving FHWA, SDOT, USACE, USFWS, USEPA, ParEn, Inc. and PB

Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) requires that federal agencies identify and consider the adverse effects of their actions on the preservation of farmland. The FPPA process involves coordination and consultation the Natural Resources Conservation Service. The following consultation and coordination activities were conducted on behalf of the project (see Appendix B).

- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS)
 - January 31, 2000 letter from PB to NRCS requesting land evaluation scores on Form AD-1006
 - February 17, 2000 letter from NRCS to PB providing land evaluation scores on Form AD-1006

5.2 PUBLIC INFORMATION MEETINGS

Two public information meetings were conducted as part of the project's public involvement efforts. The first meeting was held on the evening of March 2, 1999 at the Wilcox Elementary School Cafetorium. Sixteen people attended this meeting. The meeting presentation included a project description, identification of environmental resources along the project and discussion of various widening scenarios. Discussion focused on clarifying project elements. However, suggestions for a new route, instead of widening, were provided (see Appendix A).

The second public information meeting was held on the evening of January 13, 2000 at the Wilcox Elementary School Cafetorium. Fifty-three people attended this meeting. This meeting was held at the recommendation of the SHPD to meet consultation requirements of Section 106. In addition to a project description, the presentation included potential impacts to historic properties, specifically the Lihue Mill Bridge, Hoomana Overpass Bridge and German Hill. Discussion focused mainly on alternatives to maintain access to German Hill (see Appendix A).

5.3 DRAFT ENVIRONMENTAL ASSESSMENT

5.3.1 Availability of Draft Environmental Assessment

The project's Draft EA was announced in the May 8, 2000 edition of the Environmental Notice, which initiated the 30-day public comment period that ended on June 7, 2000. Copies of the Draft EA were mailed to federal, State and County agencies and elected officials who may have an interest in the project (see Table 5-1). In addition, copies of the Draft EA were mailed to affected landowners and Lihue Public Library. All parties who were sent copies of the Draft EA were asked to provide comments.

5.3.2 Public Hearing

A formal public hearing was held on May 25, 2000 between the hours of 6:00 P.M. to 9:00 P.M. at the Wilcox Elementary School Cafetorium. Notice of the public hearing appeared in the MidWeek and The Garden Island Newspaper the week before the hearing. Also, more than 100 governmental agencies, individuals, community and civic organizations, and businesses

**Table 5-1
Summary of Draft Environmental Assessment Coordination and Comments**

Agency or Organization	Received Copy of Draft EA	Provided Comments During Draft EA Comment Period
Federal Agencies		
Army Corps of Engineers	<input type="checkbox"/>	June 6, 2000
Department of the Interior	<input type="checkbox"/>	June 12, 2000
Environmental Protection Agency	<input type="checkbox"/>	
State of Hawaii Agencies		
Department of Business, Economic Development & Tourism, Office of Planning	<input type="checkbox"/>	
Department of Hawaiian Home Lands	<input type="checkbox"/>	May 25, 2000
Department of Health	<input type="checkbox"/>	June 28, 2000
Department of Land and Natural Resources (DLNR)	<input type="checkbox"/>	
DLNR, State Historic Preservation Division	<input type="checkbox"/>	
Office of Environmental Quality Control	<input type="checkbox"/>	June 7, 2000
Office of Hawaiian Affairs	<input type="checkbox"/>	
University of Hawaii, Environmental Center	<input type="checkbox"/>	June 9, 2000
University of Hawaii, Kauai Community College	<input type="checkbox"/>	
County of Kauai Agencies		
Department of Public Works	<input type="checkbox"/>	
Department of Water	<input type="checkbox"/>	May 18, 2000
Planning Department	<input type="checkbox"/>	
Kauai Historic Preservation Review Commission	<input type="checkbox"/>	
Kauai Civil Defense Agency	<input type="checkbox"/>	
Fire Department	<input type="checkbox"/>	
Police Department	<input type="checkbox"/>	

**Table 5-1
Summary of Draft Environmental Assessment Coordination and Comments
(Continued)**

Agency or Organization	Received Copy of Draft EA	Provided Comments During Draft EA Comment Period
Transportation Agency	<input type="checkbox"/>	
Elected Officials		
The Honorable Ezra R. Kanohe, State Representative	<input type="checkbox"/>	
The Honorable Bertha C. Kawakami, State Representative	<input type="checkbox"/>	
The Honorable Hermina Morita, State Representative	<input type="checkbox"/>	
The Honorable Jonathan Chun, State Senator	<input type="checkbox"/>	
The Honorable Avery Chumbley, State Senator	<input type="checkbox"/>	
The Honorable Maryanne W. Kusaka, Mayor of County of Kauai	<input type="checkbox"/>	
The Honorable Ronald Kouchi, County Council Chair	<input type="checkbox"/>	
The Honorable Bryan J. Baptiste, County Council Vice-Chair	<input type="checkbox"/>	
The Honorable Gary Hooser, County Council Member	<input type="checkbox"/>	
The Honorable Daryl Kaneshiro, County Council Member	<input type="checkbox"/>	
The Honorable Billy Swain, County Council Member	<input type="checkbox"/>	
The Honorable James Kunane Takioka, County Council Member	<input type="checkbox"/>	
The Honorable Randal Valenciano, County Council Member	<input type="checkbox"/>	
Landowners		
Grove Farm Company	<input type="checkbox"/>	June 6, 2000
Amfac Sugar Kauai	<input type="checkbox"/>	
Kaunualii Investment Co. and Koamalu Associates	<input type="checkbox"/>	
A.F. Knudsen & Eric A. Knudsen Trust	<input type="checkbox"/>	
Kilohana	<input type="checkbox"/>	

**Table 5-1
Summary of Draft Environmental Assessment Coordination and Comments
(Continued)**

Agency or Organization	Received Copy of Draft EA	Provided Comments During Draft EA Comment Period
Others		
Kainoa Aki		(3)
Moku Blackstad		(3)
Contractors Association of Kauai		May 25, 2000
David Crawshaw		(2)
Laura Cushnie		(2)
Ralph Cushnie		(2)
Bill Dahle		(3)
Alex Domendea		(3)
Christine Erorita		(3)
William & Aileen Farias		(1)(2)
Marge Freeman		(1)(2)
Lisa Freitas		(3)
Michael H. Furukawa		June 7, 2000
Gregg Gardiner		(2)
The Gas Company		(3)
Tom Godbey		(1)
Sanford G. Higginbotham		June 4, 2000
Monte Hull		(2)
Island School		May 19, 2000
Bill Kane		June 6, 2000
Suzette Kane		June 6, 2000

**Table 5-1
Summary of Draft Environmental Assessment Coordination and Comments
(Continued)**

Agency or Organization	Received Copy of Draft EA	Provided Comments During Draft EA Comment Period
Charlie King		(2)
Paul Kirchner		(2)
Ernie Lau		(1)
Ann Leighton		(1)
Martin Steel Constructors, Inc.		June 7, 2000
Annie McEveety		(3)
Richard McSheehy		May 31, 2000
Abel Medeiros		June 6, 2000
Owen Moe		(1)
Linda Nichols		(1)
Mac Nichols		(1)
Jerry Nishek		(2)
Leland Nishek		(2)
Tracy & Ric Ochoco		(3)
Annie E. O'Malley		June 2, 2000
Fred Reyes		(2)
Roy Takatsuki Construction Services		(3)
Joe Rosa		(2)
Tom Shigemoto		(2)
June B. Stark		June 4, 2000
Karen Taketa		(2)
Treehouse Enterprises		June 1, 2000

**Table 5-1
Summary of Draft Environmental Assessment Coordination and Comments
(Continued)**

Agency or Organization	Received Copy of Draft EA	Provided Comments During Draft EA Comment Period
United Construction Services Incorporated		May 18, 2000
Carol Wilcox		June 7, 2000
Doug Yonegi		(2)

Notes: Received a copy of the project's draft environmental assessment.

Date: Provided a comment letter.

- (1) Provided written comments during the May 25, 2000 public hearing using the project's public comment form.
- (2) Provided oral comments during the May 25, 2000 public hearing by speaking to the court reporter.
- (3) Provided written comments after the May 25, 2000 public hearing using the project's public comment form

2000 05 18 10:00 AM

received notice of the public hearing by mail. A record of all attendees was maintained and a handout that included with project information was distributed (see Appendix A).

The format of the public hearing was "open house", as opposed to a "traditional" format where a formal presentation(s) is made, and those wishing to comment on the project "testify" in front of an audience. In an open house format, no formal presentation is made, but information about the project is provided by "science fair" types of displays, and experts are available to answer questions. For this public hearing, poster boards were displayed that provided information on the project's design characteristics, and traffic and environmental impacts. The poster boards provided the following information:

- direction of proposed widening on Kaumualii Highway;
- proposed roadway cross-sections
- cross-section of modified Lihue Mill Bridge
- visual simulation of proposed Lihue Mill Bridge
- proposed Hoomana Road re-alignment
- options considered for the re-alignment of Hoomana Road
- visual simulation of Hoomana Road re-alignment
- year 1998 traffic conditions
- year 2020 traffic conditions without the project
- year 2020 traffic conditions with the project
- summary of environmental impacts
- map of important environmental resources
- map of proposed fill area at Puhi wetlands
- visual simulation of project as the Maluhia Road Tree Tunnel

In addition, staff from SDOT's Right-of-Way Branch was available to answer questions about right-of-way acquisition procedures and relocation assistance for the one residence affected by the project. Since no formal presentation is provided, participants could attend the hearing at any time within the hours stated above.

The hearing was divided into two areas. The first area was the display area where the poster boards were displayed with experts available for discussion. After signing in, participants

were asked to visit the display area, and ask questions of the project staff. The second area was for providing comments. Comment forms were made available, and participants could write their own comments and leave them in the comment drop-off box, or they could take forms home for themselves or others for mailing in later. In addition, a court reporter was stationed in the comment area to transcribe oral comments. After visiting the display area, participants were encouraged to visit the comment area, write their own comments or talk to the court reporter.

5.3.3 Comments

This section provides a record of all comments received during the Draft EA comment period and at the project's public hearing. Forty written statements were received during the Draft EA public comment period, including the written statements received at the project's public hearing. Table 5-1 lists the agencies, organizations and individuals who mailed or provided written comments. Twenty-nine people attended the project's public hearing on the evening of May 25, 2000, and 22 people provided comments in written or oral form (see Table 5-1). Eight people provided written comments using the project's comment form, and 16 people provided oral comments to the court reporter. Two people provided both written and oral comments, which results in the 22 total number of commentators at the hearing, and the 54 total number of commentators overall.

The comments and their associated responses are arranged in the following order, which is the same order in which the commentators are listed on Table 5-1:

- federal agencies
- State agencies
- County agencies
- Land owners affected by the project
- individuals and organizations

Most of the written comments requiring responses were numbered in the left margin. The oral comments that require responses are paraphrased in the response letter from the SDOT. The paraphrasing of oral statements was done for the purpose of brevity, with no intention of

modifying the content of any comment received. Appendix A contains the entire transcript of the oral comments made at the public hearing.

Some of the comments received led to changes in the EA. SDOT and FHWA considered all comments received in determining whether the project will have a "significant impact" (see Chapter 6). The letters responding to the comments were sent in June and July 2000 (see Appendix A).



DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF

June 6, 2000

Regulatory Branch

Mr. Steve M. Kyono, P.E.
District Engineer
Department of Transportation
Highway Division, Kauai District
3060 Eiwa Street, Room 205
Lihue, Hawaii 96766.

Dear Mr. Kyono:

Thank you for the opportunity to review the Draft Environmental Assessment (DEA) for the proposed highway widening of approximately 7.5 miles of Kaunualii Highway located on Kauai, Hawaii. Based on the build alternative identified in the DEA, the following comments are offered:

1 a) A Department of the Army permit under Section 404 of the Clean Water Act will be required for the discharge of dredged or fill material into waters of the U.S. This includes the impacts to the 0.25 acre wetland identified along the highway widening.

b) In addition, a compensatory mitigation plan for the discharge of fill material into the wetland will be required. Please consult with our office for details required in the plan.

2 c) If there should there be any engineering refinement during the final design phase which impacts more than the wetland acreage identified in the DEA, you should consult with our office for further permit requirements.

Should you have any questions or need additional information, you may contact Ms. Lolly Silva of my staff at (808) 438-7023 or by FAX at (808)438-4060.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch

RECEIVED
ENGINEER DISTRICT - KAUAI
2000 JUN -8 A M 18

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000689

July 5, 2000

Mr. George P. Young, P.E.
Chief, Regulatory Branch
Department of the Army
U.S. Army Engineer District, Honolulu
Ft. Shafter, Hawaii 96858-5440

Dear Mr. Young:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii
Project Number 50DE-02-95
Environmental Assessment (EA)

Thank you for your comments on the Draft EA for our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments, which have been numbered. We would like to provide the following responses to these comments.

1. Section 4.7.3 of the EA states that the proposed 0.1 ha (0.25 acres) wetland fill will be covered under a Nationwide permit. Section 4.7.5 of the EA states that this wetland loss will be replaced at a location probably upstream from the existing wetland, at a ratio of at least one to one.
2. You or your staff will be notified if during final design we determine that the project will fill more wetlands than what is reported in the EA.

We will be rendering a Finding of No Significant Impact (FONSI) for this project, and will be completing the project's Final EA. Please let me know if you would like a copy of the Final EA/FONSI.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. YOUNG, P.E.
District Engineer

SM:es
Encl.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Ecoregion
300 Ala Moana Boulevard, Room 3-122
Box 50088
Honolulu, Hawaii 96850

RECEIVED
...Y... KAUAI
2000 JUN 15 A 11:57

JUN 12 2000

In Reply Refer To: GCS

Mr. Steven M. Kyono, P.E.
District Engineer
Hawaii Dept of Transportation, Highways Division
3060 Eiwa St, Rm. 205
Lihue, HI 96766

Re: Improvements to Kaunualii Highway, Lihue to Maluhia Rd., Project No. 50DE-02-95

Dear Mr. Kyono:

The U.S. Fish and Wildlife Service (Service) has reviewed the April 2000 Draft Environmental Assessment (DEA) for Improvements to Kaunualii Highway, Lihue to Maluhia Road, Kauai. The project sponsor is the State of Hawaii's Department of Transportation. The Service offers the following comments for your consideration.

GENERAL COMMENTS

The Service provided comments for previous drafts of this document (see Appendix B). Initial Service concern focused primarily on aquatic habitats that potentially could be used by endangered waterbirds, especially wetlands. This revised DEA adequately addresses those concerns by including the information derived from the Army Corps of Engineers (ACOE) Civil Works Branch field surveys to delineate wetlands and determine the extent of jurisdictional waters in the project area. As a result of the wetland delineations and discussions with the Service, ACOE, and the U.S. Environmental Protection Agency (USEPA), potential impacts caused by fill in wetlands and endangered waterbird habitat have been minimized. Puhi Wetland may be impacted by filling 0.25 acre of jurisdictional wetland. The proposed fill will be permitted through an ACOE Nationwide Permit. This permanent loss of wetland habitat may be offset through the expansion of the existing wetland upstream of the proposed fill and through preservation of the hydraulic conditions of the downstream end of the wetland (currently a two-foot-high by four-foot-wide box culvert under the existing highway). The Service notes that only the area of potential impact in Puhi wetland was delineated by the ACOE, and the total areal extent of the wetland was not surveyed. The Service recommends that the total acreage of Puhi Wetland be delineated and mapped prior to finalization of the mitigation plan.

SPECIFIC COMMENTS

Figure 3-1, page 3-2.

2 | The Hawaiian Humane Society is shown on the mauka (south) side of the highway. It should be shown on the makai (north) side of the road.

Section 3.7.1. Surface Waters, page 3-26.

The fundamental distinction between natural watercourses (streams, gulches) and man-made water conveyance structures (irrigation ditches, excavated roadway drainage) is blurred in the description of surface waters, for example:

3 | The statement: "Also, some of these streams are currently or have been used for irrigation" should read: "Also, some of the water in these streams is currently or has been diverted into ditches for irrigation."

In reference to a "tributary" of Puuli Stream, the statement: "This tributary is an agricultural ditch that appears to be part of a natural stream system" is contradictory and should be changed to more accurately describe this surface water feature.

Section 3.7.3. Wetlands, page 3-32.

4 | "Swordtails" is one word.

Section 3.8.1. Flora, page 3-32.

5 | The vegetation grouping: "unused native lands" is misleading because it inadvertently implies the existence of intact, undisturbed communities of native vegetation, which is not the case based on the botanical survey included in previous drafts of the DEA. This terminology should be replaced with a more accurate descriptive category such as "undeveloped non-agricultural lands".

Section 3.8.2. Fauna, page 3-35.

6 | The word "o'opu" should not be capitalized
The species name "*Awaous guamensislll*" should be corrected to "*Awaous guamensis*".
The word "O'opu-napili" should be changed to "o'opu nopili".

Mr. Mr. Steven M. Kyono, P.E.

Page 3

*Section 3.8.3. Threatened and Endangered Species, page 3-36, and
Section 5.1 Scoping Activities, page 5-3*

7 | Please reference the April 11, 2000, letter from the Service to the U.S. Department of Transportation indicating concurrence with a "not likely to adversely affect" determination under an informal ESA section 7 consultation for threatened and endangered species in the project area.

Section 4.7.1 Surface Water, page 4-21

8 | The impact of roadway-related pollutants is described to be the same under the Build and No Build Alternatives. This is based upon the interpretation that total vehicle-miles traveled (VMT) would be the same under either alternative even though the project will double the number of lanes. However, there is no supporting documentation regarding the estimates of VMT under either alternative in the DEA or in any of the appendices. Because traffic congestion has shown continuous increase in the Hawaiian Islands over the recent past despite improvements to road capacities, the basis for the above conclusion regarding the impact of roadway-related pollutants is not supported. The Service recommends that supporting documentation be included or that this impact be reassessed.

9 | Under the Build Alternative, land surface will be paved to provide additional highway lanes. This will increase the total acreage of impermeable surface in the watersheds that the highway transects. An increase in the amount of impermeable area in a watershed will change the nature of surface water movement. Usually, high flow events become more frequent and more severe as impermeable surface area increases in a watershed. This can lead to excessive erosion, and can accelerate the transport of sediment and other materials to receiving waters. In the DEA, there is no discussion of the impact of the increase in impermeable surfaces to waterbodies in the project area.

CONCLUSION


10 | The ACOE wetland delineation survey was a unique multiagency effort that resulted in an in-depth description of the extent and nature of jurisdictional wetlands and "waters of the U.S." in the project area. The Service appreciates the incorporation of the survey results into the analysis of habitat impacts in the DEA. Through consideration of the information collected during the survey and minor realignment of the proposed transportation corridor, unnecessary impacts to wetlands (Weoweopilau Wetland in particular) have been avoided. However, we believe that the potential for roadway-related contamination from increased vehicle traffic and stormwater runoff

Mr. Mr. Steven M. Kyono, P.E.
Page 4

11 have not been adequately addressed. Thus, the service cannot support a Finding Of No Significant Impact (FONSI) for the proposed project at this time. We recommend that the impact analysis section in the DEA be improved by expanding the discussion and assessment of surface runoff in the Final Environmental Assessment. Provided that the final document adequately supports the conclusion that these impacts have been minimized to the greatest practicable extent, the Service would concur with a FONSI determination for the proposed project.

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

Sincerely,


for Paul Henson
Field Supervisor
Ecological Services

CC: DAR, Kauai
DAR, Honolulu
DOFAW, Kauai
DOFAW, Honolulu
DOH - CWB
DBEDT - CZM
USEPA, Honolulu
ACOE, Honolulu

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000678

July 5, 2000

Mr. Paul Henson, Field Supervisor
U.S. Department of the Interior
Fish and Wildlife Service
Pacific Islands Ecoregion
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawaii 96850

Dear Mr. Henson:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii
Project Number 50DE-02-95
Environmental Assessment (EA)

Thank you for your comments on the Draft EA for our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments, which have been numbered. We would like to provide the following responses to these comments.

1. If information on the total area of Puhi Wetland is required to obtain the Section 404 permit, then we will delineate the entire wetland.
2. The location of Hawaiian Humane Society was incorrectly placed on Figure 3-1 of the Draft EA. This will be corrected in the Final EA.
3. Section 3.7.1 will be revised in the Final EA to improve the description of the differences between natural watercourses and man-made water conveyance structures. With regards to the examples given, these statements will be revised in the Final EA.
4. This mistake will be corrected in the Final EA.

5. Section 3.8.1 will be revised in the Final EA to change the phrase "unused native lands" to "undeveloped non-agricultural lands" as recommended.
6. The names of these species will be corrected in the Final EA.
7. Reference to the April 11, 2000 letter will be included in Sections 4.8.3 and 5.1 of the Final EA. We do not intend to reference this letter in Section 3.8.3 because this section references earlier consultation with the Service to identify potentially affected Federal Trust species.
8. The statement in Section 4.7.1 of the EA that VMT will be the same under Build and No Build Alternatives is supported by the traffic impact assessment report prepared for this project (please see Appendix C of the EA). As described in Section 4.4.1.1 and Figures 4-2 and 4-3 of the EA, traffic volumes on Kaumualii Highway are predicted to be the same regardless of whether the project proceeds. Therefore, VMT is forecast to be the same or similar under the Build and No Build Alternatives. (Since the completion of the Draft EA, the traffic report has been revised, and the volumes and turning movements have been changed slightly. However, the traffic volumes under the Build and No Build Alternatives are still forecast to be the same. The Final EA will report the results of the revised traffic impact assessment report.)
9. Section 4.7.1 will be revised in the Final EA to discuss the potential impacts of creating additional impervious roadway surface in the regional watershed. Section 4.7.5 will be revised to include mitigation to prevent or minimize excessive erosion along the highway, and maintain existing drainage patterns. The amount of additional highway surface, which includes lanes, shoulders, and sidewalks, but not the median and adjacent grading, will total approximately 16 hectares (40 acres). Spread over a distance of 12 kilometers (7.5 miles), this amount is a very small in comparison to the size of the total regional watershed. The highway drainage system will be designed to prevent or minimize excessive erosion, and every effort will be made to maintain existing surface water movements. For example, as reported in Section 4.7.4 of the EA, hydraulic analysis indicate that the project is not expected to change the base flood elevations at Nawiliwili and Huleia Streams.

Mr. Paul Henson, Field Supervisor
Page 3
July 5, 2000

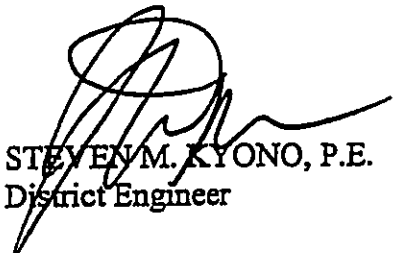
HW-KE 4.000691

10. In the case of this specific project, we do not believe that the impacts of roadway-related pollutants entering surface waters, or the creation of additional stormwater runoff from increased highway surface area, are impacts that rise to the level of "significant" as defined under federal regulation. As described in our response to comment #8, VMT will be the same under the Build and No Build Alternatives. Therefore, the level of potential roadway-related water pollutants, which scales to VMT, will be similar under either Alternative. As described in our response to comment #9, the amount of additional highway surface provided by the proposed project will be very small in comparison to the area of the watershed over the 12 kilometers (7.5 miles) length of the project. In addition, mitigation will be implemented to maintain existing surface water movements and prevent excessive erosion.
11. The Final EA will be revised to clarify the potential impacts and corresponding mitigation measures with regards to these two issues.

We will be rendering a Finding of No Significant Impact (FONSI) for this project, and will be completing the project's Final EA. Please let me know if you would like a copy of the Final EA/FONSI.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,



STEVEN M. KYONO, P.E.
District Engineer

SM:es
Encl.

BENJAMIN J. CAYKIANI
GOVERNOR
STATE OF HAWAII



STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOMELANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

RAYNARD C. SOON
CHAIRMAN
HAWAIIAN HOMES COMMISSION

JOBBS M. K. M. YAMAGUCHI
DEPUTY CHAIRMAN

May 25, 2000

To: The Honorable Kazu Hayashida, Director
Department of Transportation

Attn: Steven Kyono, Kauai District Engineer
Highways Division

From: Raynard C. Soon, Chairman
Hawaiian Homes Commission

Daniel Ornellas

Subject: Improvements to Kaunualii Highway, Lihue to Maluhia
Road, Project No. 50DE-02-95, Lihue, Kauai, Dated
April, 2000

Thank you for the opportunity to review the subject application.
The Department of Hawaiian Home Lands has no comment to offer.

If you have any questions, please call Daniel Ornellas of our
Planning Office at 586-3836.

2000 MAY 26 A 11:30

RECEIVED
HOMES - KAUAI

BENJAMIN J. CAYETANO
GOVERNOR



KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

IN REPLY REFER TO:
HWY-KE 4.000672

July 5, 2000

Mr. Raynard Soon, Chairperson
Department of Hawaiian Home Lands
P.O. Box 1879
Honolulu, Hawaii 96805

Dear Mr. Soon:

**Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii
Project Number 50DE-02-95
Environmental Assessment (EA)**

Thank you for your review of the Draft EA for our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway.

We will be rendering a Finding of No Significant Impact (FONSI) for this project, and will be completing a Final EA. Please let me know if you would like a copy of the Final EA/FONSI.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,

A handwritten signature in black ink, appearing to be "S. M. Kyono".

STEVEN M. KYONO, P.E.
District Engineer

SM:es

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



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

RECEIVED
ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH
KAUAI

2000 JUL -5 P 1:03
In Reply, please refer to:
File:

June 28, 2000

00-083/epo

Mr. Steven M. Kyono, P.E.
District Engineer
Highways Division
State Department of Transportation
Kauai District
3060 Eiwa Street, Room 205
Lihue, Kauai 96766

Dear Mr. Kyono:

Subject: Draft Environmental Assessment (DEA)
Improvements to Kaunualii Highway
Lihue to Maluhia Road (Project No. 50DE-02-95)
Kauai

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

Control of Fugitive Dust

There is a significant potential for fugitive dust emissions during the construction activities. Implementation of adequate dust control measures during all phases of construction is warranted.

Construction activities must comply with provisions of Hawaii Administrative Rules, Chapter 11-60.1, "Air Pollution Control," Section 11-60.1-33, Fugitive Dust.

The contractor should provide adequate measures to control dust from the road areas and during the various phases of construction. These measures include, but are not limited to:

- a. Planning the different phases of construction, focusing on minimizing the amount of dust generating materials and activities, centralizing on-site vehicular traffic routes, and locating potentially dusty equipment in areas of the least impact;
- b. Providing an adequate water source at the site prior to start up of construction activities;

- c. Landscaping and rapid covering of bare areas, including slopes, starting from the initial grading phase;
- d. Controlling of dust from shoulders and access roads;
- 1 e. Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and
- f. Controlling of dust from debris being hauled away from project site.

If you have any questions regarding these issues on fugitive dust, please contact the Clean Air Branch at 586-4200.

Noise Concerns

1. Activities associated with the construction phase of the project must comply with the Department of Health's Administrative Rules, Chapter 11-46, "Community Noise Control."
 - a. The contractor must obtain a noise permit if the noise levels from the construction activities are expected to exceed the allowable levels of the rules as stated in Section 11-46-6(a).
 - 2 b. Construction equipment and on-site vehicles requiring an exhaust of gas or air must be equipped with mufflers as stated in Section 11-46-6(b)(1)(A).
 - c. The contractor must comply with the requirements pertaining to construction activities as specified in the rules and the conditions issued with the permit as stated in Section 11-46-7(d)(4).
2. Heavy vehicles traveling to and from the project site must comply with the provisions of the Administrative Rules, Chapter 11-42, "Vehicular Noise Control for Oahu."

Should there be any questions on this matter, please call Mr. Russell Takata, Environmental Health Program Manager of the Noise, Radiation and Indoor Air Quality Branch at 586-4701.

Water Pollution

- 3 1. A National Pollutant Discharge Elimination System (NPDES) general permit is required for the following discharges to waters of the State:

Mr. Steven Kyono
June 28, 2000
Page 3

00-083/epo

- 3
- a. Storm water discharges relating to construction activities, such as clearing, grading, and excavation, for projects equal to or greater than five acres;
 - b. Storm water discharges from industrial activities;
 - c. Construction dewatering activities;
 - d. Noncontact cooling water discharges less than one million gallons per day;
 - e. Treated groundwater from underground storage tank remedial activities;
 - f. Hydrotesting water;
 - g. Treated effluent from petroleum bulk stations and terminals; and
 - h. Treated effluent from well drilling activities.

Any person requesting to be covered by a NPDES general permit for any of the above activities should file a Notice of Intent with the Department's Clean Water Branch at least 30 days prior to commencement of any discharge to waters of the State.

Any questions regarding these comments should be directed to Mr. Denis Lau, Branch Chief, Clean Water Branch at 586-4309.

Sincerely,



Gary Gill
Deputy Director
for Environmental Health

c: CWB
NRFAQ
CAB

HWY-KE 4.000720

July 12, 2000

Mr. Gary Gill
Deputy Director
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu, Hawaii 96801

Dear Mr. Gill:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii
Project Number 50DE-02-95
Environmental Assessment (EA)

Thank you for your comments on the Draft EA for our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments; which have been numbered. We would like to provide the following responses to these comments.

1. We agree that substantial fugitive dust emissions can occur at construction sites. Therefore, we are committed to implementing dust control measures, which are described in Section 4.13.2 of the EA. We will consider other measures mentioned in your letter that were not included in Section 4.13.2, such as providing adequate dust control measures during weekends, and before and after daily construction activities.
2. As is described in Section 4.13.3 of the EA, construction activities will comply with Section 11-46 of the Hawaii Administrative Rules (HAR), "Community Noise Control". At this time, we do not anticipate that construction activities will require a noise permit. HAR Section 11-42 appears to apply only on Oahu. Nevertheless, heavy vehicles involved in construction activities will all be required to be equipped with mufflers, in accordance with the Community Noise Control regulations. Therefore, they would most likely comply with the provisions specified in Section 11-42.

BENJAMIN J. CAYETANO
GOVERNOR



GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4188

June 7, 2000

Mr. Kazu Hayashida, Director
Department of Transportation, State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813


Dear Mr. Hayashida:

We have reviewed a draft environmental assessment (DEA) for the Kaunual'i Highway Improvements, Lihou West of Maluhia Road and offer the following comments for your consideration and response.

1. *Need for an EIS:* Please find attached our letter of April 17, 2000, outlining our view that the project requires an environmental impact statement.
2. *Cultural Impacts:* Please consider the cultural impacts of the proposed action. Will polluted runoff from increased vehicular traffic on the improved road affect persons or operations hydrogeologically downgradient and involved in taro cultivation, nearshore gathering of limu/opihi/'opae or salt harvesting? Will an increase in road traffic place soot from auto exhaust on ferns and other plants gathered nearby the roads for medicinal purposes? Are there nearby cultural or religious sites which may be affected by the proposed improvements? Please find enclosed for your use a copy of the Environmental Council's cultural impact assessment guidelines.

Should you have any questions, please call Leslie Segundo of my staff at 586-4185.

Sincerely,


GENEVIEVE SALMONSON
Director

Enclosures

c: Mr. Abraham Wong, FHWA
Mr. Steve Kyono, DOT

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BENJAMIN J. CAYETANO
GOVERNOR



GENEVIEVE SALMONSON
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STATE OF HAWAII
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236 SOUTH BERETANIA STREET
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FACSIMILE (808) 586-4185

April 17, 2000

Honorable Kazu Hayashida, Director
Department of Transportation, State of Hawai'i
860 Punchbowl Street
Honolulu, Hawai'i 96813

Dear Mr. Hayashida:

We have received a joint Federal-State draft environmental assessment (DEA) for the Kaumuali'i Highway Improvements, transmitted by your Kaua'i Highways Division's memorandum of March 24, 2000, HWY-KE 4.000254).

We understand that your agency is proposing two alternatives.

The first, a "no-build" alternative, consists of improvements listed in a 1997 draft environmental assessment for the "Kaua'i Long-Range Land Transportation Plan" (which we have not yet received for publication in the Environmental Notice). These improvements include: (1) the Poipu Nawiliwili Connector Road (a new two-lane roadway makai of the existing Kaumuali'i Highway); (2) the Lihu'e Hanamaulu Bypass Road (a new four-lane divided roadway); (3) Nuhou Road (a new four-lane undivided roadway between Puhi Road and Nawiliwili Road; (4) East Koloa-Poipu Bypass Road (widen to a four-lane undivided roadway between the proposed Poipu-Nawiliwili Connector Road and Poipu Road; and, (5) Poipu Road (widen a four-lane divided roadway between Lawa'i Road and the East Koloa-Poipu Bypass Road.

The second, a "build" alternative, consists of: (1) the conversion of a 7.5 mile section of Kaumuali'i Highway between Kuhi'o Highway in Lihu'e to a point 4,400 feet west of Maluhia Road from a two-lane undivided roadway to a four-lane divided roadway.

Having reviewed this draft environmental assessment we do not believe that an anticipated Finding of No-Significant Impact is warranted. For reasons set forth below, we respectfully urge that you revise this environmental assessment and resubmit it to us at your earliest convenience as an Environmental Impact Statement Preparation Notice.

1. THE PROJECT HAS POTENTIAL IMPACTS ON HISTORIC RESOURCES, ENDANGERED AND NATIVE SPECIES, WETLAND RESOURCES, AND SURFACE WATERS

While we recognize that widening will be done on either the north or south sides of the highway to avoid direct impacts to: wetlands; the Maluhia tree tunnel; the head shaft of a sugarcane conveyor that crosses Kaumuali'i Highway; Lihu'e Mill storage building; Lihu'e Public Cemetery; County Department of Water baseyard facility; businesses in Puhi (including the historic Grove Farm office building, Kaua'i Nursery and a Brewer Environmental Industries establishment), the magnitude of the project is such that there may be potential significant indirect and cumulative effects on historic resources (such as the Lihu'e Mill and Huleia Bridges), on wetland resources, on surface waters (such as the Nawiliwili Stream, and the Huleia Stream), on federally endangered species (such as

Honorable Kazu Hayashida, Director
Department of Transportation
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Newell's shearwater (*Puffinus auricularis*), the Hawaiian duck (*Anas wyvilliana*), the Hawaiian stilt (*Himantopus mexicanus knudseni*), the , Hawaiian coot (*Fulica alai*), and the Hawaiian moorhen (*Gallinula chloropus sandvicensis*), and native species (such as the 'o'opu nakea (*Awaous guamensisii*), and the 'o'opu nopili (*Sicyopterus stimpsoni*)). Section 3.8.2 of the draft environmental assessments notes that "[n]ative macrofaunal species were only found in stream segments several miles downstream from Kaunualii Highway, which suggests that some limited, low-level recruitment is occurring despite severely degraded conditions."

2. THE PROJECT PROPOSES TO MODIFY AN EXISTING HISTORIC BRIDGE

Section 6.1 of the DEA notes that "the proposed project would not cause the loss or destruction of any natural or cultural resource" [underscoring added] because "natural processes" and not the project itself is "causing" the loss or destruction of the bridge. We respectfully disagree. The proposed modifications of the existing bridges to meet current design and safety standards is contributing to the "loss" of the historic bridge through modification of its historic character. Table 4-4 shows that the Federal Highway Administration determined under Section 106 of the National Historic Preservation Act of 1966 that the proposed project would have an "adverse effect" on the Lihue Mill Bridge.

3. THE PROJECT HAS EIGHT CROSSINGS OF STREAMS AND MAJOR IRRIGATION DITCHES

In a September 30, 1998, letter, the Commission on Water Resource Management noted that the project may need to procure a stream channel alteration permit and petition to amend the interim instream flow standard for affected streams. The Commission also noted that road cutting at the end of Ha'upu Ridge may cut through dike structures, but impacts are unknown. If ground water is encountered, the Commission recommended that expeditious bulkheading take place to reseal the exposed compartments with subsequent notice given to the Commission of such an occurrence.

The U.S. Fish and Wildlife Service (FWS) noted that the water collected in the watershed traversed by the proposed improvements may have potential impacts on water quality in Huleia Stream and the region downstream near Huleia National Wildlife (which was established to provide endangered waterbird habitat). The FWS also noted that the DEA should address potential indirect impacts such as changes in hydrology or potential increases in road-related contaminants (i.e., oil, grease runoff) that may wash into Huleia Stream and tributaries that feed into the Papakolea Stream. Section 4.7.1 notes that the level of roadway pollutants entering surface waters due to roadway runoff would likely be the same under the Build and No Build Alternatives because total vehicle-miles travelled, an indicator of roadway related pollution, would be the same under both alternatives. While we are in no position to evaluate the technical merits of this inference, we do note that the DEA acknowledges that the number of vehicle-miles travelled would increase as population and tourism increase. It is thus reasonable to expect that the roadway pollutants entering surface waters will increase, and hence, have a potential impact on downstream areas such as the Huleia National Wildlife Refuge.

4. THE PROJECT MAY IMPACT WETLAND AREAS

The draft environmental assessment identifies four potential wetland areas. The discussion in Chapter 3, Affected Environmental does not provide sufficient detail as to the physico-chemical and biological nature of these wetland areas. The Chapter contains extensive discussion on what constitutes "jurisdictional" or federally-regulated wetlands. Chapter 4, Environmental Consequences notes that one jurisdictional wetland is expected to be impacted by having approximately 0.25 acres filled, thus requiring a Department of the Army nationwide permit and a Section 401 Water Quality Certification from the Department of Health.

Honorable Kazu Hayashida, Director
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5. CULTURAL IMPACT ASSESSMENT UNDER CHAPTER 343, HRS GUIDELINES

We remain gravely concerned about your February 1, 2000, agency response to the Office of Hawaiian Affairs (HWY-KE-4.000088) wherein your agency states: *"We have carefully considered your suggestion that the report be revised to include research on the Hawaiian occupation and use of lands from Koloa to Lihu'e and beyond what is presented in the report. Although such information, if obtainable, would be interesting, we feel that such research would be beyond the scope of this exercise, which is to make a good faith effort to identify and assess the impact on historic properties in the project's area of potential effect. Unless specific evidence is provided to us that would indicate that research conducted to date has missed a potential historic property, we plan to rely on the results of the report as well as public and agency consultation to identify historic properties."*

Chapter 343, Hawai'i Revised Statutes, requires the assessment of an actions social impacts, among other things. Because social impacts are intimately interwoven into the fabric of history and culture, past practice in preparing environmental assessment focused almost exclusively on the historic-archaeological aspects of social impact assessment, with almost no attention given to the cultural aspects of social impact assessment.

In response to the 1996 Supreme Court decision entitled *Public Access Shoreline Hawai'i v. County of Hawai'i et alia*, and citizen concern about neglect in assessing impacts of a proposed action on cultural resources (such as burials, gathering rites, significant cultural sites, cultivation practices) by agencies having an erroneous interpretation that archaeological and historical documentation was sufficient for the purposes of Chapter 343, HRS environmental review, the Environmental Council of the State of Hawai'i in 1997, set forth a policy entitled *"Guidelines for Assessing Cultural Impacts."* A copy of these guidelines is enclosed for your use. We would urge you to examine the potential cultural impacts of your proposed action. Some questions to consider include the following. Will polluted runoff from increased vehicular traffic on the improved road affect persons or operations hydrogeologically downgradient and involved in taro cultivation, nearshore gathering of limu/opihi/'opae or salt harvesting? Will the increase in road traffic place soot from auto exhaust on ferns and other plants gathered nearby the roads for medicinal purposes? Are there nearby religious or cultural sites which may be affected by the proposed improvements? These questions cannot be answered in a vacuum. The enclosed guidelines provide a systematic approach to an assessment of cultural impacts. The first step to obtain information on cultural impacts is to meet with the community. The Office of Hawaiian Affairs, the Island Burial Council and the Hawaiian Civic Clubs are excellent sources of information as to who to contact in the community concerning gathering sites, religious and cultural sites, and burial sites. We urge you to follow the enclosed guidelines in assessing cultural impacts.

6. THE PROJECT'S BUILD ALTERNATIVE IS ESTIMATED TO COST \$75-\$110 MILLION

Section 2.3 notes that the estimated cost of the build alternative in year 2000 dollars is between \$75 and \$110 million which is a significant expenditure of public funds. The project schedule indicates that implementation will occur in a minimum of three phases, with the road open for service in 2005.

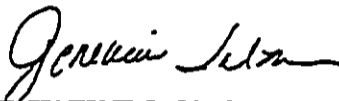
Considering the cumulative effects of all of the above, it is our belief that the proposed project clearly requires an environmental impact statement. We urge you to consult again with the State Historic Preservation Division, the U.S. Fish and Wildlife Service, the Department of Land and Natural Resources' Division of Forestry and Wildlife and its Commission on Water Resource Management, as well as the Office of Hawaiian Affairs and the Kaua'i Island Burial Council, and native Hawaiian organizations, and revise the environmental assessment and resubmit it as a final environmental assessment/environmental impact statement preparation notice. This will initiate a thirty-day public consultation period on specifying the scope of the draft environmental impact statement. A public

Honorable Kazu Hayashida, Director
Department of Transportation
Kaunualii Highway Improvements Environmental Assessment
April 17, 2000
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hearing to receive comments during this period may be held to promote a dialogue between the community, the above identified agencies and organizations, the Federal Highway Administration and your agency. Up-front consultation and dialogue will promote more information exchange and consensual decision-making.

We would be very open to the possibility of meeting with you, the Federal Highway Administration and your consultant on our concerns regarding this project. Please call me or my Environmental Health Specialist, Les Segundo, at (808) 586-4185 if you would like to pursue this possibility or if you have any questions.

Sincerely,



GENEVIEVE SALMONSON
Director

- c: Mr. Steven Kyono, Kaua'i Office, Highways Division, DOT
Mr. Abraham Wong, Federal Highways Administration
Dr. David Atkin, Parsons Brincherhoff Quade and Douglas
Dr. Donald Hibbard, State Historic Preservation Division, DLNR
U.S. Fish and Wildlife Service, Honolulu
Mr. Michael Buck, Division of Forestry and Wildlife, DLNR
Commission on Water Resource Management, DLNR
Office of Hawaiian Affairs
Kaua'i Island Burial Council

HWY-KE 4.000587

June 21, 2000

TO: MS. GENEVIEVE SALMONSON, DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
DEPARTMENT OF HEALTH

FROM: KAZU HAYASHIDA *K. H.*
DIRECTOR OF TRANSPORTATION

SUBJECT: IMPROVEMENTS TO KAUMUALII HIGHWAY, LIHUE TO WEST OF
MALUHIA ROAD, ISLAND OF KAUAI, HAWAII
PROJECT NO. 50DE-02-95
ENVIRONMENTAL ASSESSMENT (EA)

Thank you for your comments on the Draft EA for our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Your June 7, 2000 letter contained two comments: (A) the project should prepare an environmental impact statement (EIS); and (B) the cultural impacts of the project should be considered. We would like to provide the following responses to these two comments:

- A. The first comment references your April 17, 2000 letter that communicated disagreement with our anticipated Finding of No Significant Impact (FONSI) determination. In this letter you asked that we prepare an EIS Preparation Notice. Shortly after meeting with you and your staff on April 26, 2000, which included representatives from the Office of Hawaiian Affairs (OHA) and the University of Hawaii Environmental Center, we responded in a letter dated April 27, 2000 that we still believe the anticipated FONSI to be appropriate. We have received no new information during the Draft EA comment period that would influence us to change this position. Therefore, we intend to declare a FONSI.

Responses to your specific comments in the April 17, 2000 letter are provided below. These responses are numbered in accordance to the numbering provided in that letter.

1. Other than the direct impacts to the historic Lihue Mill Bridge and a wetland just west of Puhi (see discussions below), we do not anticipate that the project will cause direct or indirect impacts, much less significant impacts, to other historic properties and wetlands, federal trust and native species, and water resources.

Please see the EA section regarding these environmental resources. Therefore, the cumulative impacts of the project to these environmental resources will be limited only to the direct impacts to Lihue Mill Bridge and the Puhi wetland, and in our opinion, these impacts are not cumulatively significant.

2. In accordance with Section 106 of the National Historic Preservation Act, the Federal Highway Administration rendered an "adverse effect" determination on Lihue Mill Bridge, with which the State Historic Preservation Officer concurred. However, an "adverse effect" on an historic property does not necessarily constitute a "significant" impact. Such assessments must be made on a case-by-case basis. In this case, we believe the impact to Lihue Mill Bridge is not significant. The railings are already in a severe state of disrepair, and they would have to be replaced regardless of whether the Build Alternative proceeds. Because of the "adverse effect" determination, a Memorandum of Agreement will be signed, which will stipulate historical documentation requirements. After the implementation of mitigation measures, we do not believe the adverse effect will be significant.
3. The project will maintain the drainage characteristics of all the stream and irrigation ditches crossing the highway. Therefore, wetlands downstream of the project, such as those in Koloa and Huleia National Wildlife Refuge, will not be affected. The need for stream alteration permits does not necessarily mean that the project will have a significant impact.

Regarding the Haupū Ridge comment from the Commission on Water Resource Management, we believe this potential impact is not significant because we will work with the Commission to mitigate any impacts to dike structures.

Regarding the increase in non-point source pollution, the OEQC is correct to note that residents and tourism are major causes of such pollution. The projected increase in VMT will not be caused by the Build Alternative. It would be caused by regional growth with or without the project. Therefore, no pollution impact will occur because of the project.

4. After extensive efforts to minimize the wetland impacts of the project, including thorough coordination with the U.S. Army Corps of Engineers (USACE), the U.S. Environmental Protection Agency (USEPA) and the U.S. Fish and Wildlife Service (USFWS), which is documented in the EA, we made the decision to proceed with the proposed filling of approximately a quarter-acre of wetlands just west of Puhi to avoid displacing businesses in Puhi. This decision was also influenced by the

fact that this wetland does not function as a habitat for endangered waterbirds or other important species, which the USFWS agreed. The USACE stated that this wetland functions as a sediment trap, groundwater recharge and flood storage area, and appears to have been created by an inadequate culvert serving the east fork of Puhī Stream, the water source of this wetland. The wetland impacts will be covered under an existing Nationwide Section 404 permit from the USACE. Consultation with the USACE, the USEPA, and the USFWS indicated that the project would only be required to replace the filled wetlands on a one-to-one ratio because of the wetland's limited functions. We are committed to replacing the area of wetlands that will be filled at a one-to-one ratio. For the reasons described here, it is our opinion that the quarter-acre filling of the Puhī wetland is not a significant impact.

5. "Historic Property" is a general term that includes traditional cultural properties (TCP) (see National Register Bulletin 38, Guidelines for Evaluating and Documenting Traditional Cultural Properties, 1994). Therefore, when we requested information from agencies and organizations regarding historic properties, we were also asking for information on potential TCPs in the project area, such as the types of cultural resources listed in your letter. Information about our coordination activities appears in the EA. Since we did not receive any information regarding cultural practices or resources, we did not pursue further study on this matter during the preparation of the Draft EA. Nevertheless, since OHA expressed concerns regarding potential impacts to TCPs during the April 26, 2000 meeting, we decided to conduct a cultural impact assessment despite the results of our scoping activities. We are expecting the report to be completed by the end of June. Any notable results will be reported in the Final EA.

We do not understand the nature of your concern regarding our response to the request of OHA for additional research on the Hawaiian occupation of the project area before western contact. We felt that such information would not help in identifying TCPs in the project area because of what has occurred in the area since western contact.

6. The Significance Criteria specified in HRS Section 11-200-12(b) do not include a cost criterion. Just because a project is perceived to be costly does not in itself trigger a significant impact. We prefer that the question of significance be limited to environmental and social issues.

GENEVIEVE SALMONSON, DIRECTOR
PAGE 4
JUNE 21, 2000

HWY-KE 4.000587

- B. In response to your second comment (of your June 7, 2000 letter): Please refer to comment #5 above.**

To reiterate our position and intention, we will be rendering a Finding of No Significant Impact (FONSI) for this project. As such, we will proceed towards completing the Final Environmental Assessment for the project.

If you have any questions, please contact Steve Kyono, Kauai District Engineer, at (808) 274-3111.

**Bc: HWY-K
ParEn (GI)
PBQD (JY)**



University of Hawai'i at Mānoa

Environmental Center
A Unit of Water Resources Research Center
2580 Campus Road • Crawford 317 • Honolulu, Hawai'i 96822
Telephone: (808) 956-7981 • Facsimile: (808) 956-3080

June 9, 2000
EA: 00199

Department of Transportation
Highways Division
3060 Eiwa Street, Room 205
Lihue, Hawaii 96766
Attn: Steven Kyono

U.S. Department of Transportation
Federal Highway Administration
300 Ala Moana Boulevard
P.O. Box 50206
Honolulu, Hawaii 96850
Attn: Abraham Wong

Dear Mr. Kyono and Mr. Wong:

**Kaunualii Highway Improvements
Draft Environmental Assessment
Lihue and Koloa, Kauai**

The State Department of Transportation, Highways Division, in conjunction with the U.S. Department of Transportation, Federal Highways Division, proposes improvements to Kaunualii Highway on Kauai. The improvements include providing sight distances that conform to current standards and conversion from a two-lane undivided highway into a four-lane divided highway. The purpose of the project is to increase vehicle capacity of the roadway to reduce congestion, to improve sight distances which are currently less than standard, and to reduce the risk of head-on collisions.

This review was completed with the assistance of William Chapman, American Studies; Charles Chong, Hawaii Institute of Marine Biology (HIIMB); Don Hancock, Kauai District Aquatic Biologist; Karl Kim, Urban and Regional Planning; and Sherri Hiraoka, Environmental Center.

General Comments

- 1 | This project should have required an Environmental Impact State rather than an Environmental Assessment. This document fails to adequately address secondary impacts such
- 2 | as increased residential and commercial development, which are associated with improved infrastructure. Specifically, we draw attention to the need for further detail on various aspects of

- 3 | project justification, pedestrian and bicycle facilities, and water resource and ecosystem mitigation and management. We also feel that the time to review such a large project was inadequate. Several Kauai reviewers were not able to get their comments in to us by the deadline. If an EIS were prepared, the review period would have been 45 days instead of 30.
- 4 | Our request for additional time to incorporate late comments was denied. Under EIS rules, the applicant could have granted an additional amount of time for review.

Purpose and Need for the Project

- 5 | While the EA provides congestion levels, level-of-service (LOS), and some analysis of intersections, it does not adequately relate this project to the regional travel demand. There does not appear to be a comprehensive analysis of trip generation, distribution, and network assignment. For a project of this magnitude, one would expect that, there would be more detailed analysis of the relationship between land use, housing, employment, and trip making behavior in addition to vehicle counts and intersection capacity analyses. An EIS would have had sufficient breadth to more adequately describe the long-range demand for this highway project.

Existing Capacity Deficiencies

- 6 | Discussion on the current capacity deficiencies of the highway (page 1-5) includes a "substantial amount of residential construction in the Eleele/Hanapepe and Lawai areas" and an employment shift to Lihue after Hurricane Iniki. If this is true, then why does the current project end in Koloa, well before Hanapepe? Also, it has been 8 years since Hurricane Iniki. Is there an employment shift back to the west?

Highway Safety Improvements

- 7 | Another justification for this project is safety (page 1-7), yet there are no accident statistics, no accident rates, and no detailed analysis of the safety benefits that would result from implementation of this project. A more detailed analysis of both the accident history along the particular stretch of roadway to be improved is needed along with estimation of the accident frequencies and their associated costs. Increased speeds, increased travel volumes, and other factors associated with the improved roadway will also generate crashes as well as various public and private costs. The EA does not adequately describe the improvements in traffic safety that will result from the project.

Alternatives

- 8 | **No Build Alternative.** What are the projected effects of this alternative? Would congestion on Kaunualii Highway decrease? By how much?
- 9 | **Other Alternatives.** The Draft EA states on page 3-16 that "the highway is the primary, or in some areas, the only access route for the communities between Lihue and Barking Sands." Is a second access road a possible alternative? There is currently public demand for secondary

- 9 | access roads to areas on Oahu. An alternate roadway would also provide escape routes during emergency situations such as tsunamis and hurricanes.

County of Kauai Plans and Controls

- 10 | A project of such magnitude as this one should describe this project in relation to the General Plan Update (page 3-7), as well as other local plans on Kauai in more detail.

Bike and Pedestrian Movements

- 11 | Another area of the EA that would benefit from further information pertains to the roadway as an environment for pedestrians, bicyclists and other non-motorized users. The EA should more carefully describe the impacts on these users under assumptions of both build and no build.

- 12 | **Bicycle Paths** Figure 2-2 and page 2-3 indicates that there will not be any bicycle lane. Is there no demand for bicycle lanes? If there are bicyclists that use the highway, it may be dangerous to omit these lanes, especially considering that the speed limit west of Puhi will be 50 miles per hour (page 2-8). The design of the modified and new Lihue Mill Bridge (page 2-9) also includes bike lanes, although the rest of the highway does not.

- 13 | The State of Hawaii Master Plan for bicycling, as mentioned in the Draft EA on page 3-18, recommends "that Kaunualii Highway be made into a bike route." However, only "a portion of the Highway has been designated into a bike route." Why isn't a bike route planned for the entire length of the project, if that is the recommendation of the Master Plan? It may be more cost efficient to include bike paths with this project instead of attempting to implement them separately at a later date.

- 14 | Widened shoulders are proposed for bicycle use along Kaunualii Highway. Additionally, "bike lanes can be provided within these shoulders if needed" (page 4-12). How will this need be assessed? What are the benefits of putting in bike lanes as opposed to not putting them in?

- 15 | **Sidewalks** No sidewalks are planned for rural areas. The justification for this is that "no or little development is planned between Puhi and the west end of the project" (page 4-12). Even with little or no development, pedestrians and joggers may utilize the road. With improved access, there may be more people moving into the area. Sidewalks may be needed in the future.

Modified and New Iuleia Bridges

- 16 | The cross-section of this bridge (page 2-10) shows that no sidewalk is planned for this bridge. The speed limit for this area is 50 miles per hour. Is there a need to include sidewalks, especially considering the high speed limit?

Options to Maintain Access to German Hill

- 17 | The realignment of Honmana Road will displace one residence at the extreme southern end of the neighborhood (page 4-7). Yet, at the January 13 Public Meeting (appendix A), it was stated that "no alternative would displace houses." Has the homeowner since been made aware of this correction? Where will the displaced residence be moved? How does the owner of this residence feel about this possible displacement?

Alternatives for Modifying Lihue Mill Bridge

- 18 | One possible alternative for the Lihue Mill Bridge (page 2-15) is the construction of a new 2-way bridge while maintaining the original bridge as a pedestrian/bicyclist path. Has this option been considered?

Estimated Cost, Phasing, and Schedule

- 19 | The EA should provide estimates of the benefits and costs for the various alternatives.
- 20 | The project will require some right-of-way acquisition (page 2-17). Have the landowners been notified of these acquisitions?

Affected Environment

- 21 | The document relies heavily on outdated socio-economic data at the Census Tract level. These types of data are available at the block group level and other widely available information sources such as school enrollment data, Tax Map Key data, and Geographic Information Systems databases. Therefore, the EA should make use of more current information. Most of the land use (page 3-1) and socio-economic information (page 3-8) is more than a decade old.

Roadway System

- 22 | The EA indicates that "the highway is the primary, or in some areas, the only access route for the communities between Lihue and Barking Sands..." (page 3-16). There is currently public demand for secondary access roads to various areas on Oahu. Is a secondary access road a feasible alternative in reducing congestion? This option may also provide alternate evacuation routes in emergency situations.

Water Resources

- 23 | The assessments that the planned improvements will not significantly impact the environment if the mitigation measures described in sections 4.13.4 and 4.13.5 of the draft are

23 taken during construction may be accurate, especially considering that the surveys of the aquatic habitats, wetlands and streams along the highway state that the biointegrity of the area is already degraded. However, the philosophy that it is justifiable to do further damage as long as damage was done by previous construction and human activity is flawed. The Hulcia watershed downstream of the project area has significant biological, economic, and cultural resources, according to the surveys in the draft. It may be beneficial for the improvements to be done within the scope of an overall environmental plan for the area. The draft states that specific recommendations for re-creation of the wetland area to be filled during construction will be made later (page 4-24). These recommendations already require some degree of environmental planning and the subsequent mitigative measures will no doubt carry a monetary cost. The environmental planning should include the entire watershed, because the project affects the whole area, and there does not seem to be a reason that such an approach would be more costly than the one already suggested in the draft.

24 The proposed highway improvements, including widening of roadway and culverting of streams along the entire length of Kaunualii highway from Lihue to Maluhia Road has the potential of negatively impacting the water quality and aquatic biota of the Nawiliwili Bay watershed, specifically that of Ifuleia River, and Nawiliwili, Puali, and Papkolea Streams, and the bay. Impacts to these aquatic ecosystems will be both short-term (construction related) and long-term (chronic impacts related to increased stormwater runoff and associated pollutants).

25 The significant increase in total area of impermeable surfaces (i.e., highway construction) will cause both an increase in the magnitude and frequency of flooding, and an increase in all NPS Pollutants associated with roadways (e.g., grease, oils, and other automotive fluids, rubber, and litter), particularly in the Puali and Nawiliwili watersheds which are undergoing rapid urbanization without implementation of Best Management Practices (e.g., stormwater detention basins and vegetated biofiltration channels). These increases in stormwater runoff will cause increased stream bank erosion and sedimentation of downstream portions of the watershed, including Nawiliwili Bay.

26 Increased sedimentation in the Nawiliwili Bay watershed, which is already recognized as "Water Quality Limited" by the Hawaii Dept. of Health, will reduce aquatic habitat, lower fisheries and wildlife productivity, and generally exacerbate the already polluted nature of streams and rivers in this watershed.

Ecosystems

27 From a biological perspective, wetlands, streams, and riparian areas are not ecologically distinct. They all overlap and affect each other. Habitats are neither independent nor static. Therefore, just because the affected habitats do not have many native or endangered species at this time, it does not mean that these species could not re-establish themselves in the area. It is probable that native stream and wetland species would return to the area within a few years if the habitat were improved. An overall proposal to improve the habitat of the entire watershed for native species should be a necessary component of project mitigation.

Historic Resources

Impacts to historic resources seem to have been well thought-out. The Grove Farm site and the Public Cemetery seem to be protected. The loss of the residence in the German Hill Historic District (page 4-30) is regrettable, and although some may agree that this action warrants a "no adverse effect" determination, the State Historic Preservation Division concurred with this conclusion.

Water Resources

28 Our reviewers felt that the draft EA inadequately addresses ways to design and implement DMP's (such as stormwater retention basins, grassed/vegetated biofiltration channels, etc., p. 4-35& 4-36) that would negate or minimize the known negative effects of urban related development that significantly increase stormwater runoff into streams. This is particularly true considering other cumulative impacts associated with on going, or planned in the near future, in or adjacent to the Nawiliwili Bay watershed (e.g. Puli Middle School, Airport expansion, Grove Farms proposed urbanization of Papakolea, Puall and Nawiliwili Stream watersheds). Papakolea Stream, which flows through the Huleia National Wildlife Refuge, is already severely degraded by turbidity, sedimentation, and dewatering for plantation uses. The proposed highway alterations, without the implementation of proper and effective BMP's, will further pollute this stream, and others within the Nawiliwili Bay watershed.

Conclusion

29 The EA is lacking in various areas. As was stated, some of the issues of particular concern include the project justification, pedestrian and bicycle facilities, and water resource and ecosystem impacts. The size and scope of the proposed project indicate that further detail is necessary to adequately address all of the potential impacts. The EA fails to adequately address secondary impacts of the project such as growth-inducing effects of highways and improved infrastructure. On Oahu, for example, development of the Ewa plain may have been slower or more difficult without the construction of H-1 and Kalaniana'ole Highway widening has stimulated interest in further development of Hawaii Kai.

30 Another secondary impact that is completely ignored is the increased rate of speed that vehicle will be travelling on the widen highway. Once the road is widened to four lanes and sight lines are improved, drivers will tend to travel at a greater rate of speed. This will mean more accidents and less pedestrian safety. Again, Kalaniana'ole Highway on Oahu should be instructive. Since that road was improved, communities along the road have complained about traffic in excess of the post speed limit of 35 miles per hours. This will certainly occur on Kauai, but it is not discussed at all in the EA.

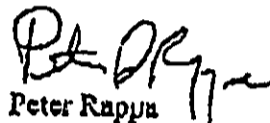
31 The EA fails to look at the cumulative effects of the many "minor" impacts. Any one impact is minor but viewed together, they may significantly impact the environment, which is the threshold for requiring an EIS. Under NEPA, impacts that might be considered significant, may be considered insignificant if they can be mitigated. There is no similar provision in state law. An impact is considered significant on its merits (or domerita as the case may be) and is sufficient to require an EIS. The EA points out many impacts that will occur, some arguably

Mr. Kyono and Mr. Wong
June 9, 2000
Page 7

- 31 | significant such as the disruption of traffic during construction. Yes, it can be mitigated but it is still significant.
- 32 | Because we feel that this document fails to adequately cover the potential impacts, we suggest that the Draft EA be used as an Environmental Impact Statement (EIS) Preparation Notice, and that an EIS be prepared.

Thank you for the opportunity to comment.

Sincerely,



Peter Rapua
Assistant Environmental Coordinator

cc: David Atkin, Parsons, Brinckerhoff Quade & Douglas
OEQC
James Moncur, Water Resources Research Center
William Chapman, American Studies
Charles Chong, Hawaii Institute of Marine Biology
Karl Kim, Urban and Regional Planning
Don Heacock, Division of Aquatic Resources
Sherri Hiuaka, Environmental Center

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000690

July 5, 2000

Mr. Peter Rappa
Assistant Environmental Coordinator
University of Hawaii at Manoa
Environmental Center
2550 Campus Road, Crawford Rm 317
Honolulu, Hawaii 96822

Dear Mr. Rappa:

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii
Project Number 50DE-02-95
Environmental Assessment (EA)

Thank you for your comments on the Draft EA for our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments, which have been numbered. We would like to provide the following responses to these comments.

1. We have received no new information during the Draft EA comment period, including the comments provided in your letter, that would lead us to change our position that an Environmental Assessment is the appropriate form of environmental documentation for this project under Chapter 343 of the Hawaii Revised Statutes and the National Environmental Policy Act. We therefore disagree with your position that an environmental impact statement is the appropriate environmental review document.
2. The EA does address the potential secondary impacts of the proposed project. As described in Section 4.1.1 of the EA, development in the area between Lihue and Puhi would occur regardless of the whether the project proceeds because the County is encouraging growth in this area. The Environmental Center, during a meeting held on April 26, 2000, stated another secondary impact is that the project will cause some motorists to exceed the speed limit. We agree that this is an impact of the project, and we will disclose it in the Final EA. However, in our opinion this is not a significant impact.

3. Please see responses to comments #5-7, #11-15 and #23-28.
4. The Environmental Center was granted additional days to submit comments.
5. The Kauai Long-Range Land Transportation Plan (May 1997) is a comprehensive and detailed study that evaluated existing and future transportation needs of Kauai based on current and future land use and employment trends. Increasing the roadway capacity of Kaumualii Highway was identified in the Long-Range Plan as needed to address projected travel demand in south Kauai. The transportation demand purpose described in Section 1.2.2 of the EA references the Long-Range Plan. The EA does not need to repeat the analysis that was previously conducted for the Long-Range Plan.
6. The west end of the project is essentially the intersection of Kaumualii Highway with Maluhia Road. The project extension west of Maluhia Road (1340 meters (4400 feet)) will provide a transition between the existing two-lane configuration and the proposed four-lane configuration. Maluhia Road provides access to Koloa and Poipu, and Kaumualii Highway west of Maluhia Road services the communities from Lawai to Barking Sands. To the east of the Kaumualii Highway / Maluhia Road intersection there are presently two lanes, but to the west and south of the intersection there are a total of four lanes. Therefore, congestion is worse on the east side of the intersection than on the west side, especially the section of Kaumualii Highway between Puhi and Lihue. This is the reason why the Maluhia Road intersection was identified as the logical western terminus.

Since the immediate recovery from Hurricane Iniki, employment has increased in west and south Kauai, such as in the hotels and resorts of Poipu.
7. Historical vehicle accident data for Kaumualii Highway will be included in the Final EA. Section 4.4.1.1 of the EA states that motor vehicle safety will improve because of the proposed median and sight distance corrections. The median will substantially reduce the risk of head-on collisions, and increased sight distances provide drivers with more time to react to potentially hazardous situations. We acknowledge that providing additional lanes on Kaumualii Highway will enable some motorists to exceed the speed limit, potentially increasing the risk of incidents. This potential impact will be disclosed in the Final EA. However, the proposed project will improve overall highway safety.
8. The potential impacts of the No Build Alternative are described throughout Chapter 4 of the EA, including its traffic impacts, which are described in Section 4.4.1.1 of the EA.

9. We do not favor construction of a new east-west highway at this time when a capacity expansion of Kaunualii Highway addresses the project's purposes and needs with substantially fewer environmental and social impacts. Construction of a new highway would result in a greater level of environmental impact.
10. The current update of the County General Plan is not yet official. Until it has been adopted by the County, it is not appropriate for us to evaluate the project's consistency with this draft plan in the EA. However, a review of the current draft indicates that the project appears to be consistent with the current draft for reasons similar to the project's consistency with the adopted General Plan.
11. Section 4.4.1.2 of the EA describes the potential impacts of the No Build and Build Alternatives on cyclists and pedestrians using the highway. The impacts of the No Build Alternative will be clarified in the Final EA to state that the existing level of service for cyclists and pedestrians will not change.
12. The three-meter (10 feet) wide shoulders will be designated for use by cyclists. Therefore, it will not be necessary to stripe bike lanes within these shoulders because this may confuse cyclists and motorists. However, in urban areas, bike lanes will be striped at intersections because the three-meter (10 feet) wide shoulders could not be maintained in these areas. Although Figure 2-8 shows bike lanes within the shoulders of the modified Lihue Mill Bridge, a striped bicycle facility may not be included when the final design is completed. However, there will be more than adequate space for cyclists to ride within the shoulders of the bridge.
13. Section 4.4.1.2 of the Final EA will be clarified to address the comment. The entire length of the project will be designated a bike route after construction. Bike paths parallel to the highway are not included in the project. We, or the County of Kauai, have no plans to construct bike paths along Kaunualii Highway.
14. The statement in the draft EA is not accurate, and will be corrected in the Final EA. As stated in the response to comment #12, it will not be necessary to stripe bike lanes within the highway shoulders, except at intersections in urban areas.
15. Providing sidewalks in non-urban areas cannot be justified given the additional cost in relation to the demand for such facilities. Joggers or pedestrians wishing to use the highway west of Puhi may use the three-meter (10 feet) wide shoulders if there is no space along the sides of the highway.

16. Huleia Bridge is located approximately six kilometers (three and a half miles) west of Puhi, in an agricultural/rural area. Providing sidewalks along this section of Kaumualii Highway is not necessary (please see response to comment #15).
17. The quotation cited from the draft EA refers only to the widening of Kaumualii Highway, not the relocation of access to German Hill. As described in Section 2.1.2, the proposed widening will alternate on the north (mauka) and south (makai) sides to avoid residential and business displacements. The EA is very clear in stating that the one residential relocation associated with the project is due to the re-alignment of Hoomana Road. The owners of the house that would be affected are aware of the project's impact, and we are continuing to have discussions with the owners regarding compensation and relocation assistance.
18. The alternative suggested would require moving the highway further north (mauka) than planned, which would displace another historic bridge (Hoomana Overpass Bridge), and may encroach upon the German Hill neighborhood.
19. Cost estimates of other alternatives were not included in Section 2.3, Estimated Cost, Phasing and Schedule, because no other build alternative was evaluated in the EA. Other build alternatives that were considered but rejected are presented in Section 2.2 of the EA. No attempt has been made to quantify benefits. Project benefits are discussed qualitatively.
20. The affected landowners have been consulted throughout project planning. They were also sent copies of the Draft EA.
21. The purpose of including demographic and housing information in Section 3.3 of the EA is to determine whether there are minority and low-income populations per the Executive Order on Environmental Justice (#12898), and whether the project would cause a disproportionately high and adverse impact on these populations. Although the data is ten years old, it is the best available information given the purpose of this exercise. Obtaining very detailed, or block level data, is not necessary because the widening would not occur in any existing neighborhood.
22. Please see response to comment #9.
23. We have no objection to coordinating our environmental mitigation measures with an overall environmental planning effort conducted by others for the watershed. However, we will be required under a Section 404 permit to replace the wetlands in Puhi to be filled. We do not expect the Corps of Engineers to approve a substantial delay in providing the new wetland while waiting for a study of the watershed.

24. The short-term (construction) impacts of the proposed project on surface water resources, such as those listed in the comment, are described in Section 4.13.4 of the EA. The long-term (operational) impacts of the proposed project on surface water resources are described in Section 4.7.1 of the EA. Adverse impacts to surface waters are not anticipated because Best Management Practices (BMP) will be implemented during construction to prevent sedimentation. In addition, the project will not alter the drainage patterns of any of the streams that cross the highway; and the level of roadway-related pollutants entering surface waters will be similar under the Build and No Build Alternatives because regional vehicle-miles traveled will be same under both alternatives.
25. Section 4.7.1 will be revised in the Final EA to discuss the potential impacts of creating additional impervious roadway surface in the regional watershed. Section 4.7.5 will be revised to include mitigation to prevent or minimize excessive erosion along the highway, and maintain existing drainage patterns. The amount of additional highway surface, which includes lanes, shoulders, and sidewalks, but not the median and adjacent grading, will total approximately 16 hectares (40 acres). Spread over a distance of 12 kilometers (7.5 miles), this amount is a very small in comparison to the size of the total regional watershed. The highway drainage system will be designed to prevent or minimize excessive erosion, and every effort will be made to maintain existing surface water movements. For example, as reported in Section 4.7.4 of the EA, hydraulic analysis indicate that the project is not expected to change the base flood elevations at Nawiliwili and Huleia Streams. With regards to the impact of roadway-related pollutants, please see the response to comment #24.
26. We were not aware that projects in the study area have been constructed without BMPs. Projects that create a surface disturbance larger than 4 acres (1.6 hectares) are required to obtain a NPDES permit from the State Department of Health (SDOH). Part of this permit process includes specification of BMPs. If projects have been constructed without BMPs, they could be in violation of the Clean Water Act, and SDOH should be contacted. We commit to including BMPs in our project to prevent inappropriate discharges to surface waters, because of the potential impacts noted in the comments if no such measures are implemented. Provision of BMPs is a requirement under the law.
27. It is beyond our purpose as a transportation service agency to create habitat for native or threatened and endangered species. It is our responsibility to avoid sensitive habitat when planning a transportation project, and if this is not possible, to minimize or mitigate adverse effects. Nevertheless, we support any effort to create habitat, including coordinating environmental mitigation efforts in an overall environmental planning effort (please see response to comment #23).

Mr. Peter Rappa
Page 6
July 5, 2000

HWY-KE 4.000690

28. As described in responses to comment #24, the proposed project will implement BMPs to prevent sedimentation to surface waters in the project area. In addition, the project will not increase the risk of flooding (please see response to comment #25).
29. We disagree. We believe the detail provided in the Draft EA and in the upcoming Final EA is adequate for our planned Finding of No Significant Impact (FONSI).
30. Please see response to comment #2.
31. The impacts of the proposed project include an "adverse effect" on the historic Lihue Mill Bridge, the filling of a wetland just west of Puhi, the conversion of approximately 35 hectares (86 acres) of open space and fallow agricultural land to transportation use, and the displacement of one residence. In our opinion, these impacts, individually and cumulatively, are not significant. Construction impacts are short-term, and can be mitigated. Therefore, none of the construction impacts disclosed in the EA are significant in our opinion.
32. We disagree. Please see responses to comments #1, #29 and #31.

We will be rendering a FONSI for this project, and will be completing the project's Final EA. Please let me know if you would like a copy of the Final EA/FONSI.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,



STEVEN M. KYONO, P.E.
District Engineer

SM:es
Encl.

DEPARTMENT OF WATER

County of Kauai

"Water has no Substitute - Conserve It!"

May 16, 2000

Mr. Steve Kyono, District Engineer
State of Hawaii
Department of Transportation
Highways Division
3060 Eiwa Street, Room 205
Lihue, HI 96766

Dear Mr. Kyono:

Subject: Improvements to Kaunualii Highway
Lihue to Maluhia Road
Project No. 50DE-02-95

The Department does not have any additional comments on the subject project.

Sincerely,



Ernest Y.W. Lau
Manager and Chief Engineer

MM:emi

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2000 MAY 22 A 10:43

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000671

July 5, 2000

Mr. Ernest Y.W. Lau
Manager & Chief Engineer
County of Kauai
Department of Water
4398 Pua Loke Street
Lihue, Hawaii 96766-5706

Dear Mr. Lau:


Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii
Project Number 50DE-02-95
Environmental Assessment (EA)

Thank you for your review of the Draft EA for our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway.

We will be rendering a Finding of No Significant Impact (FONSI) for this project, and will be completing the project's Final EA. Please let me know if you would like a copy of the Final EA/FONSI.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es



June 6, 2000

Mr. Steven M. Kyono, P.E.
District Engineer
State of Hawaii
Department of Transportation
Highways Division
Kauai District
3080 Eiwa Street, Room 205
Lihue, HI 96766

RECEIVED
HYS - KAUAI
2000 JUN - 8 A 10: 21

Dear Mr. Kyono:


Subject: Improvements to Kaumualii Highway
Lihue to Maluhia Road
Project No. 50DE-02-95

We have reviewed the April 2000 Draft Environmental Assessment for the subject project and have no specific comments at this time. We believe the improvements to Kaumualii Highway are needed and strongly support the project. The reprieve in traffic brought about by Kauai's depressed economy has expired as our economy begins to rebound and we encourage the State Department of Transportation to take the necessary implementing steps as quickly as practicable.

As much of the widening will occur on Grove Farm lands we look forward to working with you on the issues that may arise. Please feel free to contact us in this regard.

Very truly yours,

GROVE FARM COMPANY, INCORPORATED


Allan A. Smith
Vice President and Chief Operating Officer

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000641

July 5, 2000

Mr. Allan A. Smith
Vice President and Chief Operating Officer
Grove Farm Company
P. O. Box 2069
Lihue, Hawaii 96766

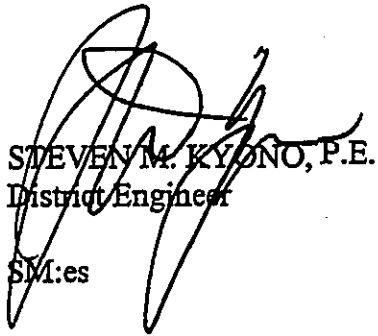
Dear Mr. Smith,

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road.
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

Public Comment Form

Improvements to Kaumualii Highway

Lihue to West of Maluhia Road
County of Kauai, Hawaii

State of Hawaii Department of Transportation
Highways Division

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HHS - KAUAI

JUN 8 9:03 AM

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: KAINOA AKI

Address: P.O. BOX 578
LAWAI HI 96765

Telephone (day): 332-9119

Telephone (eve): _____

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HHS - KAUAI
JUN - 8
A 9:06

Please make any comments below:
(return by June 7, 2000) 'Alo 'Ahi-

OBVIOUSLY THERE IS A NEED FOR WIDENING OF THE HIGHWAY, ESPECIALLY IN THESE LOCATIONS. THE TRAFFIC GETS REALLY BACKED UP, AND THE CONGESTION IS BAD. HOWEVER I THINK THE NEED TO KEEP KAUAI BEAUTIFUL IS JUST AS IMPORTANT. I THINK THE HIGHWAY WIDENING SHOULD BE DONE IN A WAY THAT WOULD NOT DETRACT FROM THE NATURAL BEAUTY OF THE ISLAND. WHETHER IT BE RESTORATION OR BEAUTIFICATION, PROVISIONS SHOULD BE MADE ON THIS PROJECT. MAHALO FOR YOUR TIME.

- ALOHA

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000680

July 5, 2000

Mr. Kainoa Aki
P.O. Box 378
Lawai, Hawaii 96765

Dear Mr. Aki:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii


Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments, which have been numbered. We would like to provide the following responses to these comments.

1. We understand and agree with the importance of maintaining the natural beauty of Kauai. Therefore, a substantial portion of the construction budget will be set aside for landscaping. Plants adaptable to the local growing conditions will be used because much of the highway will not have irrigation. When possible, native trees and shrubs will be used, and some of the trees displaced by the highway will be relocated to locations along the widened Kaumualii Highway. Interested organizations will be consulted for suggestions about plantings.

We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

Public Comment Form

Improvements to Kaumualii Highway
Lihue to West of Maluhia Road

County of Kauai, Hawaii

State of Hawaii Department of Transportation
Highways Division

RECEIVED
SYS - KAUAI

2000 JUN -8 A 9:03

The information you provide in this form will help the State Department of Transportation in planning the improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: MOKU BLACKSTAD

Address: PO BOX 963

KOLOA, HI 96756

Telephone (day): (808) 639-2477

Telephone (eve): (808) 742-1222

Please make any comments below: I THINK ITS A GREAT IDEA TO WIDEN
(return by June 7, 2000) KAUMUALII HWY, BECAUSE THERE IS ALOT OF TRAFFIC
EVERY DAY. I SHOULD KNOW BECAUSE I LIVE ON THE SOUTH SIDE. IT ALSO
CREATE JOBS FOR KAUAI PEOPLE AND THATS IMPORTANT BECAUSE TIMES ARE
HARD FOR EVERYONE.

CONTRACTORS ASSOCIATION OF KAUAI

4231 Ahukini, Lihu'e, Kaua'i, Hawai'i 96766
Phone (808) 246-2662 Fax (808) 246-8642



May 25, 2000

RE: IMPROVEMENTS TO KAUMUALII HIGHWAY

My name is Andy Ragasa, president of the hundred member Contractors Association of Kaua'i, providing testimony on behalf of the association. The Contractors Association of Kaua'i is fully in support of the widening of Kaumualii Highway from Lihu'e Mill Bridge at Kuhio Highway to an area west of Maluhia Road.

The association would first like to compliment the Department of Transportation, Highways Division staff and the consultants for this format in providing testimony. It is a refreshing approach, testifier friendly and a process we hope other agencies will begin using. Thank you and we congratulate and compliment you.

The association's support of the widening of Kaumualii Highway goes beyond the obvious work it can create. Most of the members of our association have a lot of employees coming to work into Lihu'e from west Kaua'i bedroom communities. This highway has been congested for a long time and it is not getting any better. It is not unusual to take 20-30 minutes just to get through the Lihu'e-Puhi stop lights in the afternoon with traffic bumper-to-bumper from Kentucky Fried Chicken on Kuhio Highway and down to the Fire Station on Rice Street. With more traffic signalization being planned the problem can only get worse.

Another factor in the traffic pattern is the south shore resort area. With the growing number of available hotel rooms, bed and breakfasts, time shares and other kinds of accommodations, the amount of car rental traffic mixing with construction, agricultural and military vehicles and the local public makes for a highly congested road of mixed use. Relief is definitely needed and we believe with the amount of open space now available for this infrastructure the time is right to start designing and building this expansion.

Thank you very much for allowing us to provide this testimony and we again congratulate all involved in making this "open house" type of public hearing available!

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000644

July 5, 2000

Mr. Andy Ragasa
President
Contractors Association of Kauai
Lihue, Hawaii 96766

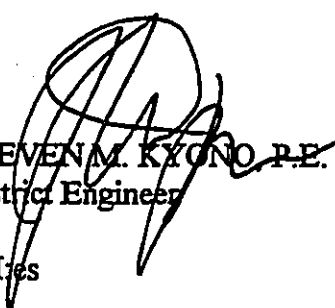
Dear Mr. Ragasa,

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

RECEIVED JUL 10 2000

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000677

July 5, 2000

Mr. David Crawshaw
P.O. Box 1081
Lawai, Hawaii 96765

Dear Mr. Crawshaw:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We have reviewed your oral comments made at the project's public hearing, and would like to provide the following responses. If we have misinterpreted any of your comments, please let us know.

Comment 1. Even with the project, there would still be congestion in Puhi.

Response. The traffic impact analysis conducted for this project indicated that with the project, intersection operations along Kaumualii Highway will improve dramatically, including those intersections in and around Puhi.

Comment 2. Concerned that the project would affect the flow of Huleia Stream.

Response. Hydraulic modeling conducted for this project indicated that the modified Huleia Bridge will not affect Huleia Stream flow.

Mr. David Crawshaw
Page 2
July 5, 2000

HWY-KE 4.000677

Comment 3. Concerned that the project would affect access to the commentor's leased farm located adjacent to the old Halfway Bridge.

Response. The existing quarry road located just east of Huleia Bridge will be maintained, including its intersection with Kaumualii Highway. Therefore, access to the old Halfway Bridge area will be available.

Comment 4. Instead of the proposed project, a road bypassing Lihue should be built from Maluhia Road.

Response. A Lihue-Hanamaulu bypass road is included in the Kauai Long-Range Land Transportation Plan (May 1997). Therefore, this bypass was included in the project's No Build Alternative, and is assumed to be constructed by the design year of 2020. The planned bypass road would start at or in the vicinity of Nuhou Street on Kaumualii Highway (near the future Kauai Intermediate School). This planned road is not exactly the same as the commentor's suggestion. Even with the Lihue-Hanamaulu bypass road, the proposed project is still needed because both projects have different purposes.

Constructing a new highway from Maluhia Road to the future Lihue-Hanamaulu bypass road cannot be justified when the expansion of Kaumualii Highway addresses the project's purposes and needs, without significant environmental and social impacts.

Comment 5. Any large tree removed by the project should be replaced by a similar type of tree, or landscaping should be better than it is today.

Response. Some of the trees displaced by the highway will be relocated to locations along the widened Kaumualii Highway or the Maluhia Road Tree Tunnel. A substantial portion of the construction budget will be set aside for landscaping. Plants adaptable to the local growing conditions will be used because much of the highway will not have irrigation. When possible, native trees and shrubs will be used. Interested organizations will be consulted for suggestions about plantings.

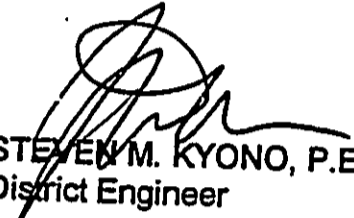
We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

Mr. David Crawshaw
Page 3
July 5, 2000

HWY-KE 4.000677

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,



STEVEN M. KYONO, P.E.
District Engineer

SM:es

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000646

July 5, 2000

Mr. Ralph Cushnie
P. O. Box 1882
Koloa, Hawaii 96756

Dear Mr.  Cushnie,

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM/es

Public Comment Form
Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

RECEIVED
HIGHWAYS - KAUAI
2000 JUN -1 A 10:44

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: Bill Dable
Address: Box 720
Eleele, Hawaii 96705

Telephone (day): 335-3171
Telephone (eve): 332-9771

Please make any comments below:
(return by June 7, 2000)

I favor the complete build out of the Kaumualii Highway from Lihue to a point just beyond Maluhia Road.
I believe the plans are presented by the DOT are the most non-intrusive to the existing assets. A do nothing approach just complicates everything from serious traffic accidents to re-paving projects, etc.
I also have reservations about adding more that is required to make the highways safe. Two lanes in each direction is about all I can personally take. Some talk of adding trees on the median just presents the motorists something more to hit in addition to the utility poles.

While I have my personal feelings, overall for the improved safety of the community is far more important.

Let's get on with it.

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000647

July 5, 2000

Mr. Bill Dahle
P. O. Box 720
Eleele, Hawaii 96705

Dear Mr. Dahle,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KIZONO, P.E.
District Engineer

SM:es

Public Comment Form

Improvements to Kaunualii Highway
Lihue to West of Maluhia Road

County of Kauai, Hawaii

State of Hawaii Department of Transportation
Highways Division

RECEIVED
YS - KAUAI
2000 JUN -8 A 9:03

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaunualii Highway project. We appreciate any comment you may have.

Name: Alex Domenda

Address: P.O. Box 510220 Kealia, Hi 96751

Telephone (day): 635-1623

Telephone (eve): 821-1073

Please make any comments below:
(return by June 7, 2000)

Improvements Needed / Traffic is Very Bad

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000643

July 5, 2000

Mr. Alex Domendea
P. O. Box 510220
Kealia, Hawaii 96751

Dear Mr. Domendea,

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

Public Comment Form

Improvements to Kaunualii Highway
Lihue to West of Maluhia Road

RECEIVED
HYS - KAUAI

County of Kauai, Hawaii

2000 JUN -8 A 9:03

State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaunualii Highway project. We appreciate any comment you may have.

Name: CHRISTINE ELORITA

Address: P.O. BOX 346
LIHUE, HI 96766

Telephone (day): 632-2200

Telephone (eve): 822-5160

Please make any comments below:
(return by June 7, 2000)

ALOHA:

I SUPPORT THIS PROPOSED PROJECT BECAUSE KAUAI'S POPULATION HAS RISEN OVER THE YEARS — MORE PEOPLE, MORE CARS BEING DRIVEN. ALTHOUGH I LIVE ON THE EAST SIDE OF KAUAI, THERE WERE TIMES WHEN I'D BE CAUGHT IN TRAFFIC — GOING WEST IN THE AFTERNOON. I THINK IT'S A GREAT IDEA TO HAVE ADDITIONAL LANES BECAUSE WE CAN AT LEAST USE ONE, SHOULD THE OTHER LANES BE CLOSED OFF DUE TO A TRAFFIC ACCIDENTS. I HATE IT WHEN THERE'S ~~HERE~~ ON THE RADIO ABOUT TRAFFIC ACCIDENTS HAPPENING — IT'S AN ANNOUNCEMENT SAD. BUT IT'S DEFINITELY FRUSTRATING TO NOT BE ABLE TO DRIVE THRU TRAFFIC BECAUSE OF ROAD CLOSURE. SO, PLEASE CONSIDER MAKING THIS PROPOSED PROJECT A REALITY FOR KAUAI.

MAHALO!

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000648

July 5, 2000

Ms. Christine Erorita
P. O. Box 346
Lihue, Hawaii 96766


Dear Ms. Erorita,

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

Public Comment Form
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaunualii Highway project. We appreciate any comment you may have.

Name: William & Aileen Faria Sr

Address: 4696 HOOMANA RD.
LIHUE, HI 96766

Telephone (day): 337-1491

Telephone (eve): 245-9163

Please make any comments below:
(return by June 7, 2000)

We approve the Hoomana Rd. entrance
& re-alignment. Thank-You for taking
our comments into consideration.

Please inform us if you plan any
more meetings or public hearings on this
project.

William Faria Sr

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000649

July 5, 2000

Mr. & Mrs. William Farias
4696 Hoomana Road
Lihue, Hawaii 96766

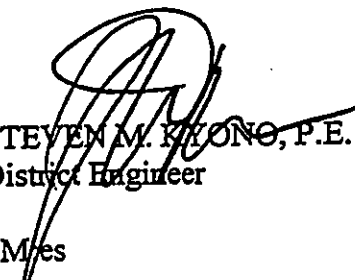
Dear Mr. & Mrs. Farias,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONG, P.E.
District Engineer

SM/es

Public Comment Form
Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaumualii Highway project. We appreciate any comment you may have.

Name: Marge Freeman

Address: 6448 Kaahala
Kapaa Hi 96746

Telephone (day): 822-4695

Telephone (eve):

Please make any comments below:
(return by June 7, 2000)

1 | No 4 lane roads ever on
this island. Use alternative 2 lanes.
2 | Underground the wires while
it is cut up.
3 | No bike paths on shoulder too dangerous
4 | Trees & bushes along all roads.
Use your imagination - not the
same old huge roads
cal. learned the new roads for more cars
5 | Light rail

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAII
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000679

July 5, 2000

Ms. Marge Freeman
6448 Kaahele Street
Kapaa, Hawaii 96746

Dear Ms. Freeman:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We have reviewed your oral comments made at the project's public hearing, and would like to provide the following responses. If we have misinterpreted any of your comments, please let us know.

Comment 1. Displaced overhead utility lines should be placed underground.

Response. At this time, we do not plan to underground any displaced overhead utility lines along Kaumualii Highway because of its high cost. However, we will revisit this issue during the design phase of the project when we have a clearer understanding of the overall cost of the project.

Comment 2. Trees should be placed along the highway.

Response. A substantial portion of the construction budget will be set aside for landscaping. Plants adaptable to the local growing conditions will be used because much of the highway will not have irrigation. When possible, native trees and shrubs will be used. Interested organizations will be consulted for suggestions about plantings. Some of the trees displaced by the highway will be relocated to locations along the widened Kaumualii Highway or the Maluhia Road Tree Tunnel.

Ms. Marge Freeman
Page 2
July 5, 2000

HWY-KE 4.000679

Comment 3. A light rail system should be considered.

Response. The population of the project area now and in the foreseeable future does not justify the construction and operation of a light rail transit system; which is expensive.

Comment 4. Instead of widening Kaumualii Highway by two lanes, these extra lanes should be constructed as a new two-lane highway elsewhere.

Response. To address the project's purposes and needs, the suggested new two-lane highway would have to be placed parallel to Kaumualii Highway between Koloa and Lihue. We do not favor construction of a new roadway at this time when the expansion of the existing Kaumualii Highway addresses the project's purposes and needs, without significant environmental and social impacts. Creation of a new highway alignment would probably result in greater adverse impacts than the proposed project.

Comment 5. Cyclists should not be encouraged to ride on the roadway shoulders as proposed in the project.

Response. With the exception of freeways or similar types of roadway, it is our position that all State highways be shared by all users, including cyclists and pedestrians. Therefore, the expanded Kaumualii Highway will include three-meter (10 feet) wide shoulders, which can be used for cycling, and pedestrian sidewalks in the urban sections of the highway. It is our responsibility to enhance mobility for all travelers, regardless of mode.

Enclosed is a copy of your written comments, which have been numbered. We would like to provide the following responses to these comments.

1. Please see response to oral comment #4.
2. Please see response to oral comment #1.
3. Please see response to oral comment #5.
4. Please see response to oral comment #2.
5. Please see response to oral comment #3.

Ms. Marge Freeman
Page 3
July 5, 2000

HWY-KE 4.000679

We will be rendering a Finding of No Significant Impact for this project, and will be completing a Final Environmental Assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,



STEVEN M. KYONO, P.E.
District Engineer

SM:es
Encl.

Public Comment Form

Improvements to Kaunualii Highway

Lihue to West of Maluhia Road

County of Kauai, Hawaii

State of Hawaii Department of Transportation
Highways Division

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HYS - KAUAI

2000 JUN -5 A 10: 54

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaunualii Highway project. We appreciate any comment you may have.

Name: Lisa Freitas

Address: 4952 Ea Road

Kupaa, HI 96746

Telephone (day): 632-2088

Telephone (eve): 821-2568

Please make any comments below:
(return by June 7, 2000)

I am looking forward to having better traffic flow. Kauai is such a beautiful island, it is unfortunate that we have such a negative, with our current traffic jams.

I think the sooner we get started on the project, the better. The traffic problems are not going to get any better with time.

Sincerely,

Lisa Freitas

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000650

July 5, 2000

Ms. Lisa Freitas
4952 Ea Road
Kapaa, Hawaii 96746

Dear Ms. Freitas,

Subject: **Improvements to Kaumualii Highway**
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KONO, P.E.
District Engineer

SM/es

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000651

July 5, 2000

Mr. Michael H. Furukawa
P. O. Box 2069
Lihue, Hawaii 96766

Dear Mr. Furukawa,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

Public Comment Form
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the improvements to Kaunualii Highway project. We appreciate any comment you may have.

Name: Glen H. Takenouchi - Branch Manager

Address: The Gas Company

3990 Rice Street

Lihue, HI 96766

Telephone (day): 245-7957

Telephone (eve): _____

Please make any comments below:
(return by June 7, 2000)

The Gas Company, Kauai Branch wholeheartedly supports this project to provide a four lane divided roadway between Lihue to just west of Maluhia Road. Our tanker trucks, service and construction vehicles travel to the westside of the island everyday, and are often held up in traffic to and from their destination. This very important project is required for The Gas Company to enhance our service to the developing areas of the west and south side of the island.

Thank you for allowing us to comment and support the Improvements to Kaunualii Highway.

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO

HWY-KE 4.000653

July 5, 2000

Mr. Glen H. Takenouchi
Branch Manager
The Gas Company
3990 Rice Street
Lihue, Hawaii 96766

Dear Mr. Takenouchi,

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM/es

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Public Comment Form
Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
County of Kauai, Hawaii
State of Hawaii Department of Transportation
Highways Division

The information you provide in this form will help the State Department of Transportation in planning the Improvements to Kaunualii Highway project. We appreciate any comment you may have.

Name: Tom Godley
Address: 3559 Hanapepe Rd
P.O. Box 688
Hanapepe, HI 96716
Telephone (day): 335-5562
Telephone (eve): _____

Please make any comments below:
(return by June 7, 2000)

1. When you extend the four lane road westward, without trees or guardrail or some kind of barrier, you certainly will have people making U-turns, increasing the danger.
 2. Leading the justification of why this project is needed - these are:
 - a. existing capacity deficiencies
 - b. Future transportation demand
 - c. Highway safety improvements
- For the above reasons, a traffic light is needed immediately at the Kaunualii - Koloa Road intersection. It is extremely dangerous now, and will become much more so, especially if the proposed improvements to Kaunualii Highway are approved.

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR
DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000681

July 6, 2000

Mr. Tom Godbey
P.O. Box 688
Hanapepe, Hawaii 96716

Dear Mr. Godbey:

Subject: Improvements to Kaumualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

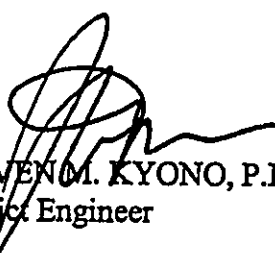
Thank you for your comments on our proposed project to widen Kaumualii Highway from a two-lane undivided roadway to a four-lane divided roadway. Enclosed is a copy of your written comments, which have been numbered. We would like to provide the following responses to these comments.

1. For aesthetic reasons, the project will not include any type of guardrail or barrier in the median. Other than being illegal, if a motorist chooses to make a U-turn in the median, they would be driving over landscaping. Depending on the grading plan, driving over the median may cause damage to the vehicle. Opportunities for U-turns will be provided at certain signalized intersections.
2. We will installing a traffic signal system at the Kaumualii Highway/Koloa Road intersection in conjunction with the Lawai Stream Bridge widening project. Bids for the project were opened last week. Construction of that project will commence later this year.

We will be rendering a Finding of No Significant Impact for this project, and will be completing a Final Environmental Assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KYONO, P.E.
District Engineer

SM:es

4 June 2000

RECEIVED
- KAUAI

2000 JUN -5 A 11:48

Mr. Steven Kyono, District Engineer
Department of Transportation
3060 Eiwa Street
Room 205
Lihue
Hawaii
96766

Reference: highway expansions

Dear Mr. Kyono,

I can not express strongly enough our strong opposition to any and all future expansion of roads on Kauai even assuming the consequent vehicle inconveniences.

As a resident (and former tourist) the natural glory that is Kauai MUST be protected from all assaults of our pollution/waste orientated culture. Each and every new piece of land taken for the sacred automobile contributes to this spreading virus.

We destroy the very essence of what all of us value the most in the privilege of living here - the pure solitude of the island's beauty.

Thank you for the time.


Sanford G. Higginbotham

pmb 253
post office box 3500
princeville
kauai
hawaii
96722
(808)826-1582

BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000654

July 5, 2000

Mr. Sanford G. Higginbotham
P. O. Box 3500
Lihue, Hawaii 96766


Dear Mr. Higginbotham,

Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We will be rendering a Finding of No Significant Impact for this project, and will be completing the project's final environmental assessment.

If you have any questions, please contact the Kauai District Office at 274-3111.

Sincerely yours,


STEVEN M. KOYONO, P.E.
District Engineer

SM/es

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BENJAMIN J. CAYETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
3060 EIWA STREET, ROOM 205
LIHUE, HAWAII 96766

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
BRIAN K. MINAI
GLENN M. OKIMOTO

IN REPLY REFER TO:

HWY-KE 4.000676

July 5, 2000

Mr. Monte Hull
Sierra Club
2149-B Puu Road
Kalaheo, Hawaii 96741

Dear Mr. Hull:

**Subject: Improvements to Kaunualii Highway
Lihue to West of Maluhia Road
Island of Kauai, Hawaii**

Thank you for your comments on our proposed project to widen Kaunualii Highway from a two-lane undivided roadway to a four-lane divided roadway. We have reviewed your oral comments made at the project's public hearing, and would like to provide the following responses. If we have misinterpreted any of your comments, please let us know.

Comment 1. A Lihue bypass road should be considered as an alternative.

Response. A Lihue-Hanamaulu bypass road is included in the Kauai Long-Range Land Transportation Plan (May 1997). Therefore, this bypass was included in the project's No Build alternative, and is assumed to be constructed by the design year of 2020. Even with the Lihue-Hanamaulu bypass road, the proposed project is still needed because both projects have different purposes.

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Comment 2. Since traffic congestion on Kaumualii Highway is caused by the traffic signals, widening the highway would do nothing to alleviate this problem.

Response. The traffic impact analysis conducted for this project indicated that with the project, intersection operations along Kaumualii Highway will improve dramatically. By doubling the capacity of the highway, the same "green time" allotted to through traffic will allow up to twice the number of vehicles to pass through. Congestion is caused when "green time" is insufficient, and the intersection is unable to process all the vehicles that are queuing at the intersection.

Comment 3. The new Kaumualii Highway / Hoomana Road intersection will be dangerous because left-turning vehicles would have to cross two lanes.

Response. Adequate sight distances will be provided at the new Kaumualii Highway / Hoomana Road intersection to allow safe left-turn movements. In addition, an acceleration lane will be provided so vehicles turning left out of Hoomana Road can safely merge with eastbound traffic on Kaumualii Highway.

Comment 4. What is the source of the year 2020 traffic volume projections used to prepare traffic analysis?

Response. The project's traffic impact analysis used the year 2020 traffic volume projections that were developed for the Kauai Long-Range Land Transportation Plan (May 1997).

Comment 5. The "open house" format of the project's public hearing prevents community members from presenting a united position.

Response. Members of the public are still free to interact as they see fit at the public hearing as long as they do not disrupt information gathering and comments by other participants. They can also e-mail, write letters, or arrange meetings to communicate amongst themselves, and present their position to the State Department of Transportation.

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Comment 6. The "open house" format is very effective if you don't want to hear public views.

Response. We find that the "open house" format is much more effective than the "traditional" format of public hearing in getting comments from people who do not like to speak in front of an audience, or who may have a different opinion than the majority of hearing attendees. At this project's public hearing, three out of four persons who attended the hearing provided comments. A "traditional" format would be unlikely to generate that high of a response rate.

Comment 7. The project should have conducted the kind of public hearing where there are both displays and a general meeting.

Response. The objectives of our public hearings are to provide: (1) provide the public and government agencies with the opportunity to get more information about the project; (2) to correct errors in fact or analysis, or point out omissions, in the project's environmental document; and (3) to provide the public with the opportunity to express their personal opinions for the consideration of decision makers. The "open house" format accomplishes all of these objectives.

Comment 8. The visual simulation of the modified Lihue Mill Bridge does not show the relocated overhead utility lines.

Response. The intent of developing the visual simulation of the modified Lihue Mill Bridge is to show how this historic bridge will appear after construction, and the extent to which the widening will change the appearance of Kaumualii Highway. In the section of Kaumualii Highway shown in this visual simulation, the overhead utility lines will need to be relocated. Since the details of this relocation have not been determined, the relocated utility lines were not shown in the simulation. There was no intent to mislead the public.

Comment 9. The visual simulation of the project at the Maluhia Road Tree Tunnel does not show other elements of the project, such as the median and the westbound lanes. Therefore, it is not possible to show how the character of the highway would change.

Response. The intent of developing the visual simulation of the project at the Maluhia Road intersection is to show that the project will not affect the tree tunnel, a valuable natural and scenic resource. It was not possible to position the photographer at a location that would capture the entire four-lanes and median. The visual simulation of the highway at Lihue Mill Bridge shows the extent of the proposed widening.

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We will be rendering a Finding of No Significant Impact for this project, and will be completing a Final Environmental Assessment.

If you have any questions, please contact the Kauai District Office at-274-3111.

Sincerely yours,



STEVEN M. KYONG, P.E.
District Engineer

SM:es

island school

3-1875 Kaumualii Hwy., Lihue, HI 96766-9597 Phone: 808 246-0233 Fax: 245-6053 email: info@ischool.org

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MAY - KAUAI

2000 MAY 22 A 10:50

May 19, 2000

Mr. Steve Kyono, District Engineer
Highway Division
State of Hawaii
3060 Eiwa, Room 205
Lihue, Hawaii 96766

RE: Widening of Kaumualii Highway to Four Lanes

Dear Mr. Kyono:

I write in support of widening Kaumualii Highway to four lanes, where it fronts the new middle school and Kilohana. A new stoplight will control traffic entering and leaving the roadway to the new school. Without the widening, cars traveling to and from Lihue will encounter long lines while awaiting light changes. The four lanes are needed.

In addition, as we have discussed, we still would like to pursue the idea of constructing an entryway on the mauka side of Kaumualii, opposite the road leading to the new middle school. This would provide access to Kilohana as well as an additional entry and egress to Kauai Community College and Island School.

Thank you for your consideration of these matters.

Yours very truly,

Robert Springer
Robert Springer
Head of School



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