

3.4 KA LAU NAHELE & KAIANOHO HOLOHOLONA LŌHIU

'Oko'a loa nā 'ano lau nahele o kahi o ka papahana, 'oiai hele kahi papahana mai ke kula kapa kai a i uka. 'O nā lau nahele i 'ike 'ia ka: lākana, koa haole, kou, panini, 'ilima, natal redtop grass, kuawa, spanish clover, Bermuda grass, 'ōhi'a lehua, hapu'u, 'ōlapa, Boston fern, Hilo grass, basket grass, 'uluhe 'ē, kukui, a me ka hala (CSH 2013)

Aia nā kaiaola 'ōwi i hō'ike 'ia e ka Nature Conservancy o Hawai'i ma ke komohana loa ma uka loa o Līhu'e 'Āpana, ma kahi aku o nā wahi i noho 'ia. Wae'ano 'ia kēia mau wahi i wahi Ululā'au Ma'ū Kula Kai a i kaiaola Ulunāhelehele. Aia kekahi mau kīpuka Ululā'au Ma'ū Kula Kai a Ulunāhelehele, a Ululā'au Ma'ū iki Kula Kai a Ulunāhelehele i nā mauna ma ka hema o ka palena o Līhu'e 'Āpana. Ma waho o kēia mau wahi, 'a'ohe wahi Kaianoho Ko'iko'i i wae 'ia ma Līhu'e 'Āpana (USFWS 2010).

3.5. NĀ 'ĀINA KUMU WAI & WAI 'ILI 'ĀINA

He 'ewalu mau 'āina kumu wai ma loko o Līhu'e 'Āpana. 'O ia 'o:

- Wailua (por.) - 34,041 'eka
- Kawailoa – 2,389 'eka
- Hanamā'ulu – 7,305 'eka
- Nāwiliwili – 4,014 'eka
- Līhu'e Kahua Mokulele – 1,204 'eka
- Pū'ali – 1,327 'eka
- Kīpū Kai – 1,904 'eka
- Hulē'ia (por.) – 17,937 'eka

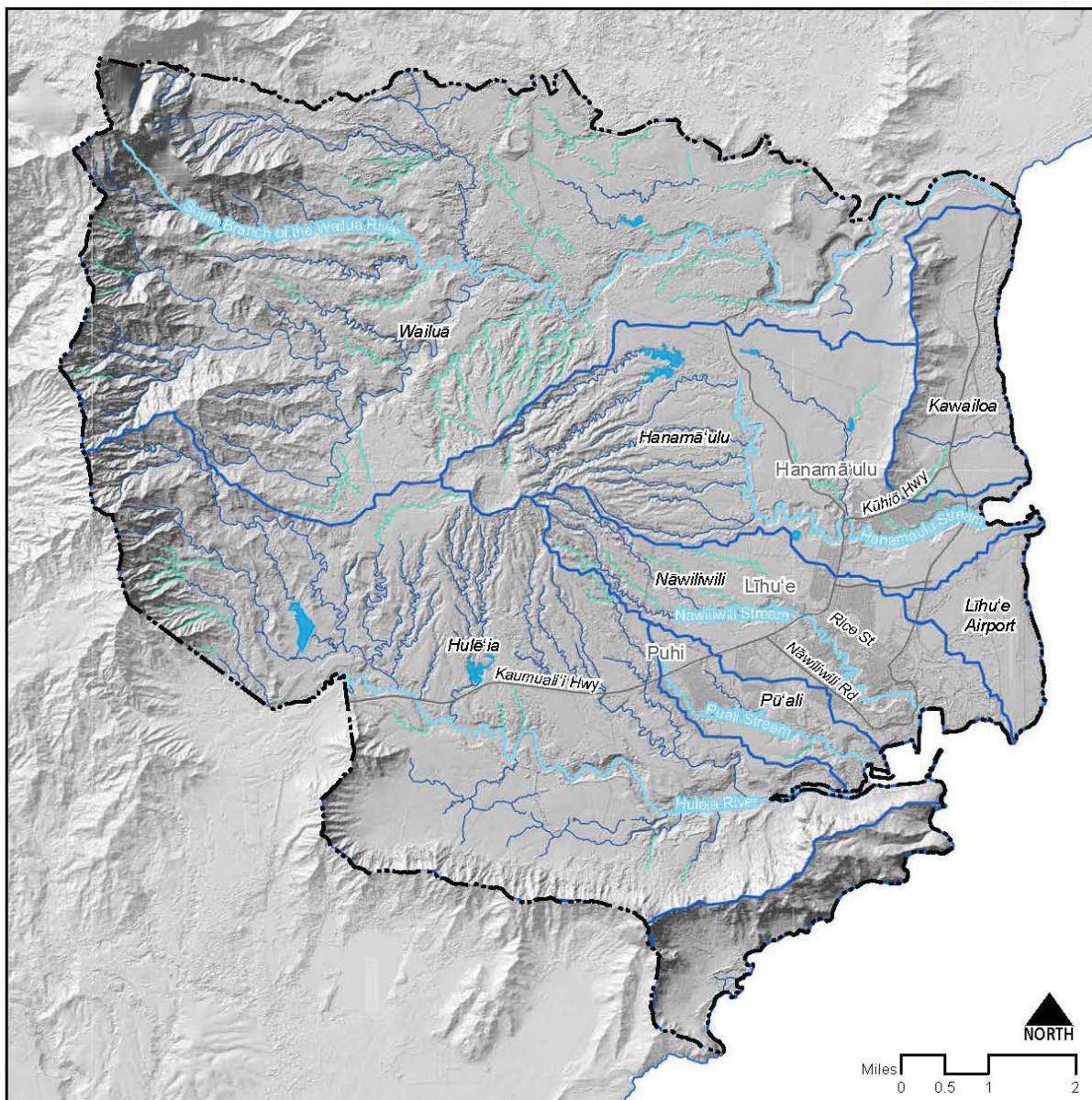
'O nā kahawai li'ili'i a me nā kahawai nui kūmau ko'iko'i ma loko o Līhu'e 'Āpana 'o ia 'o Wailua Kahawai a me Wailua Wailele, Hanamā'ulu Kahawai, Nāwiliwili Kahawai, Puhi Kahawai, a me Hulē'ia Kahawai. 'O Wailua Kahawai wale nō ke kahawai nui loa a ho'okele 'ia ma ka moku'āina (Ki'i 3-4).

3.6. NĀ WAHI KAPA KAI

'O ke 'ano o Kaua'i ma nā makahiki he 5 miliona i hala 'o ia ka lolea a 'a'ai 'ia o kona pōhaku pele pa'a 'ole. Ua 'a'aianalu nā nalu moana nui i ka 'āina kapa kai a lawe 'ia ke ko'ana. I ia manawa, ulu a'e nā 'āpapa o nā limu a me nā ko'a a puni ka mokupuni, a pa'a he 'āpapa pili lihi. 'O ke koena o kēia mau 'āpapa ke kumu o ke one no nā kahaone ma ka ka'e a puni o ka hapanui o ka mokupuni.

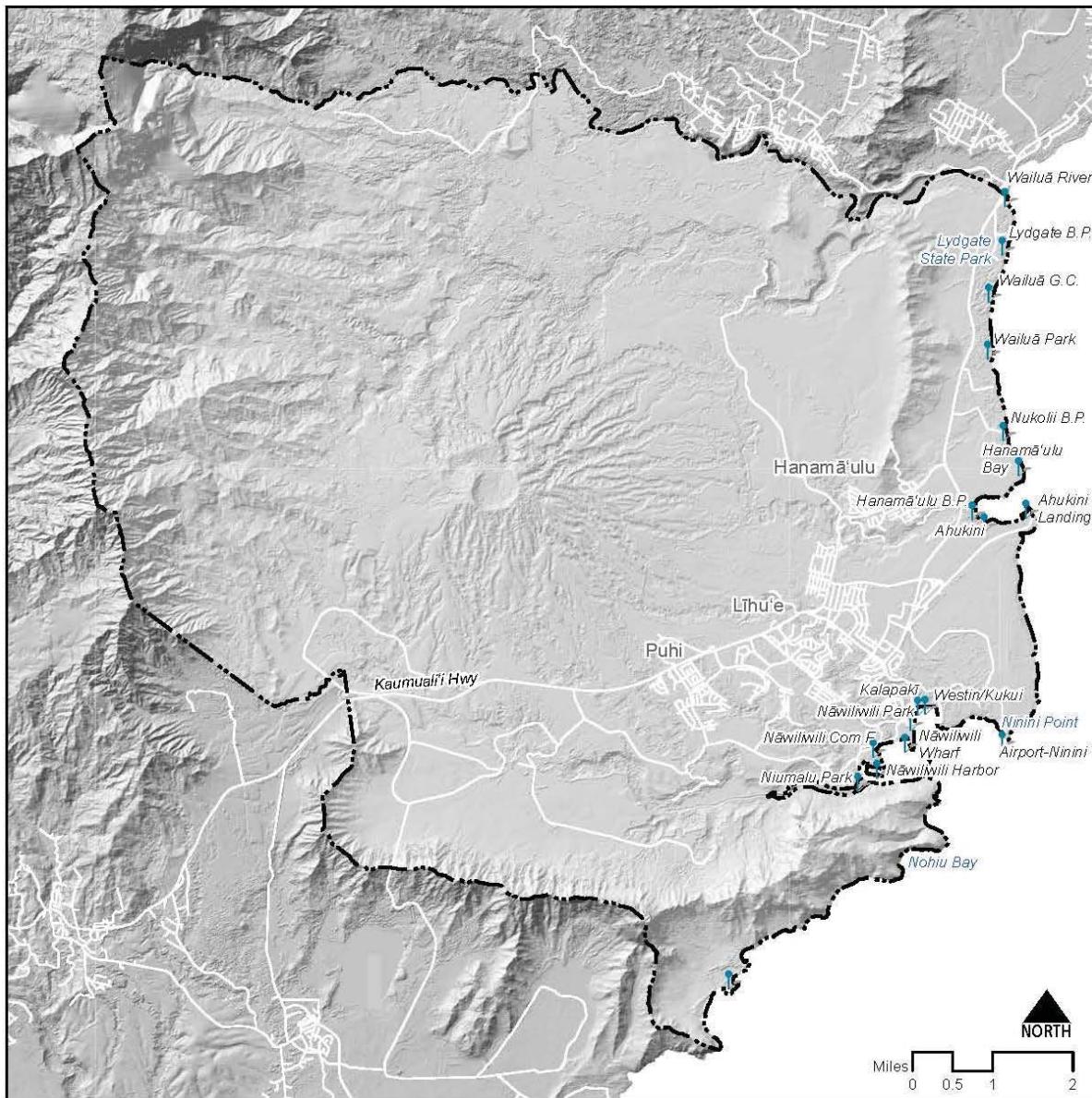
'O kekahi waiwai ko'iko'i o Līhu'e 'o ia kona wahi kapa kai, i ho'ohana 'ia no ka ho'onanea 'ana a me nā hana pā'oihana. He mau wahi kapa kai i kūkulu 'ole 'ia ko ka 'āpana i no'ono'o 'ia he ma'ema'e a he nani. Hō'ike ke Ki'i 3-5 i nā wahi kipa kapa kai a me nā wahi komo ma loko o ka 'Āpana.

Ki'i 3-4 Nā 'Āina Kumu Wai a me Nā Wai 'Ili 'Āina

**Legend**

- | | | | |
|--|---------------|--|--------------------------|
| | Watersheds | | Intermittent Streams |
| | Reservoirs | | Perennial Streams |
| | Parcels | | Līhu'e Planning District |
| | Major Streams | | Major Roads |

Ki'i 3-5 Nā Wahi Kapa Kai a me Nā Wahi Komo

**Legend**

- — Līhu'e Planning District
- Major Roads
- Destinations and Access Points

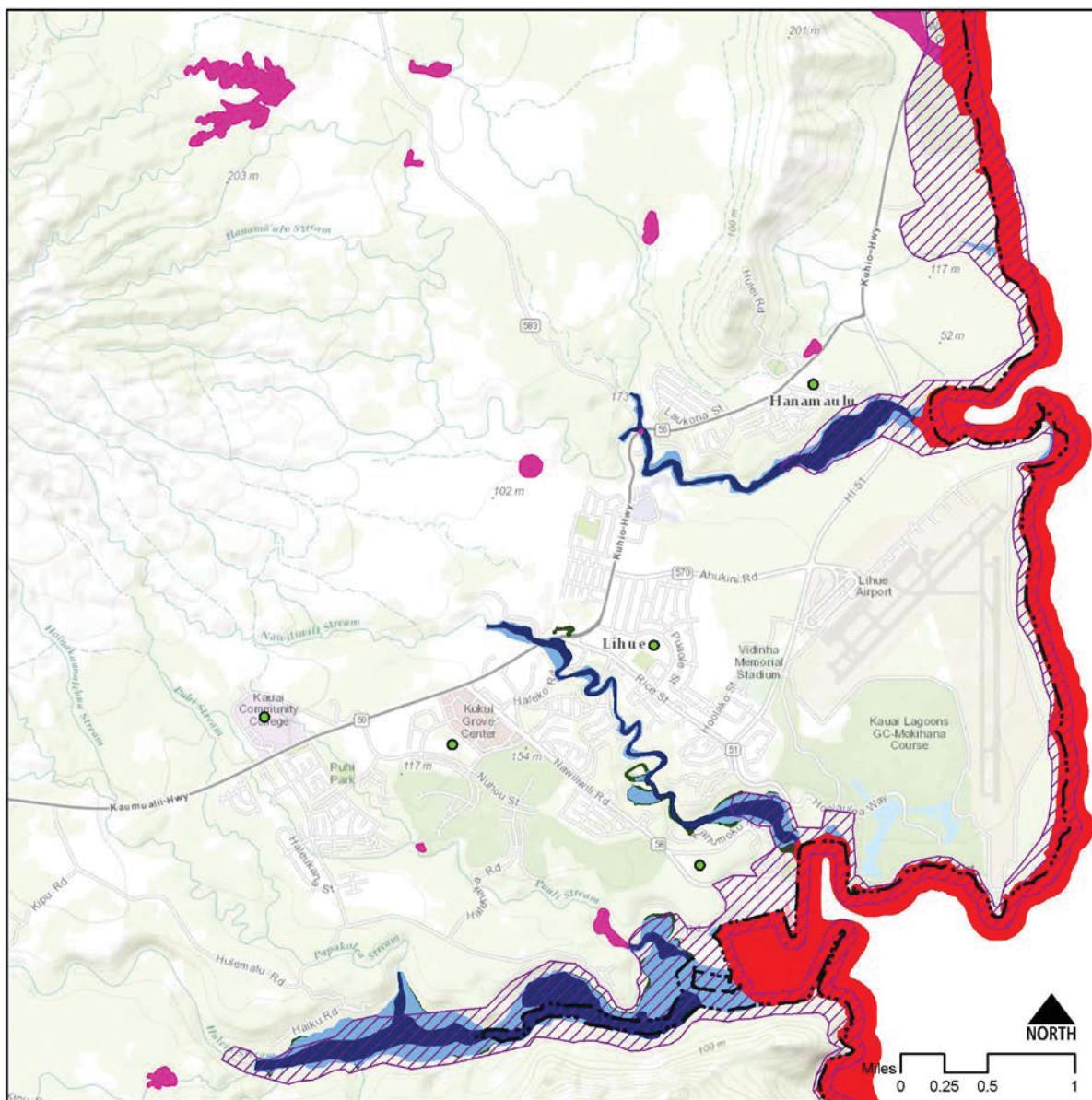
3.7. NĀ PŌ'INO KŪLOHELOHE A ME NĀ PŌ'INO ANIAU

He mea mau ka pō'ino o Hawai'i Pae 'āina i nā pō'ino kūloheloh e like me nā makani pāhili, 'ōla'i, kai e'e, ahi 'a'ā, hāne'e 'āina, a me ka wai hālana. Hō'ike ke Ki'i 3-6 i nā wahi wai hālana, wahi ho'omalu, a me nā wahi ha'alele kai e'e i loko o Līhu'e 'Āpana. E wānana 'ia e lawehana ana ka 'ino o ka hālana ma kapa kai, ka hālana kai, a me ka 'a'aianalu i ka loli aniau pili i ka pi'i 'ana o ka 'ili kai. Hō'ike ka hō'ano hou 2009 o ka Papa Ho'olālā Pale Lau Pō'ino o Ke Kalana o Kaua'i i ko ke Kalana ka'akālai pale pō'ino no nā pō'ino kūloheloh a me nā pō'ino loli aniau. Ua ho'ohana ke Kalana i kekahi mau hana pale pō'ino i hāpai 'ia ma ka Papa Ho'olālā Lau Pō'ino o 2003, e like me ka hō'o'ole'a 'ana i nā hale Kalana ko'iko'i, ka ho'okā'oi 'ana i ka palekana o kekahi mau uapo a me nā awa, ka ho'okā'oi 'ana i nā kahua keleka'a'ike pōulia, a me ka hana pū 'ana me nā haku 'āina kū'oko'a a me nā hōkele no ka hakulau 'ana i kekahi mau wahi ho'omalu hou.

Ua uku 'ēkena ke Ke'ena Ho'olālā o Kaua'i Kalana i kekahi 'imi noi'i nowelo, i ka Loiloi Loli Aniau a Pō'ino Kapa Kai o Kaua'i (UH Sea Grant Program 2014) no ka ho'ā'o 'ana i nā pilikia a me nā pō'ino loli aniau me ka no'ono'o 'ia o ka hō'ano hou 'ia o ka Papa Ho'olālā Laulaha. 'Ike 'ia ma ka 'imi noi'i ka loiloi pō'ino pi'ina 'ili kai me ka ho'ohana i ka National Oceanic and Atmospheric Administration (NOAA) sea level rise(SLR)viewer, e hō'ike ana i ka hopena o ka pi'ina 'ili kai ma hope o 'ekolu mau kumu: 1-kapua'i, 3-kapua'i, a me 6-kapua'i SLR.

'O Nāwiliwili kahi i kia 'ia i wahi e pono ai ka mālama 'ia o kona 'ōnaepuni ko'iko'i i mau nā hana a me nā lako e like me ka ho'ouna moku 'ana. Hō'ike nā Ki'i 3-7 a i 3-9 i ka papaha hālana kai mai ka pi'ina 'ili kai ma Nāwiliwili ma 1, 3, a me 6 kapua'i. Hāpai ka loiloi i ka ho'okomo 'ana i ia mau hopena loli aniau ma ka ho'olālā 'ana a me ka haku kulekele 'ana. Hō'ike 'ia nā mana'o kulekele i hāpai 'ia no ka loli aniau ma ka Paukū 5.9.

Ki'i 3-6 Nā Wahi Wai Hālana, Ho'omalu, a Ha'alele Kai E'e

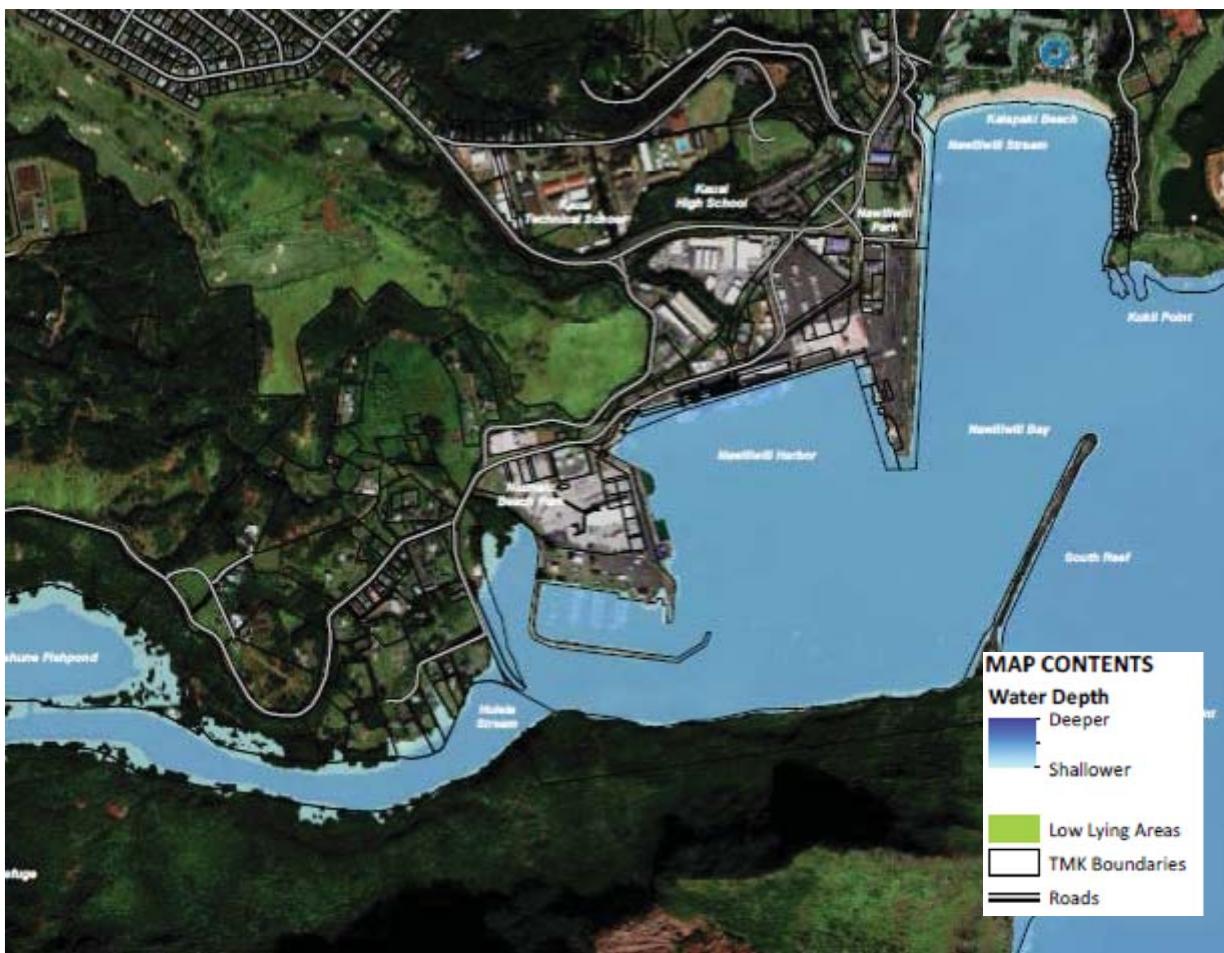


Service Layer Credits: Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User

Legend

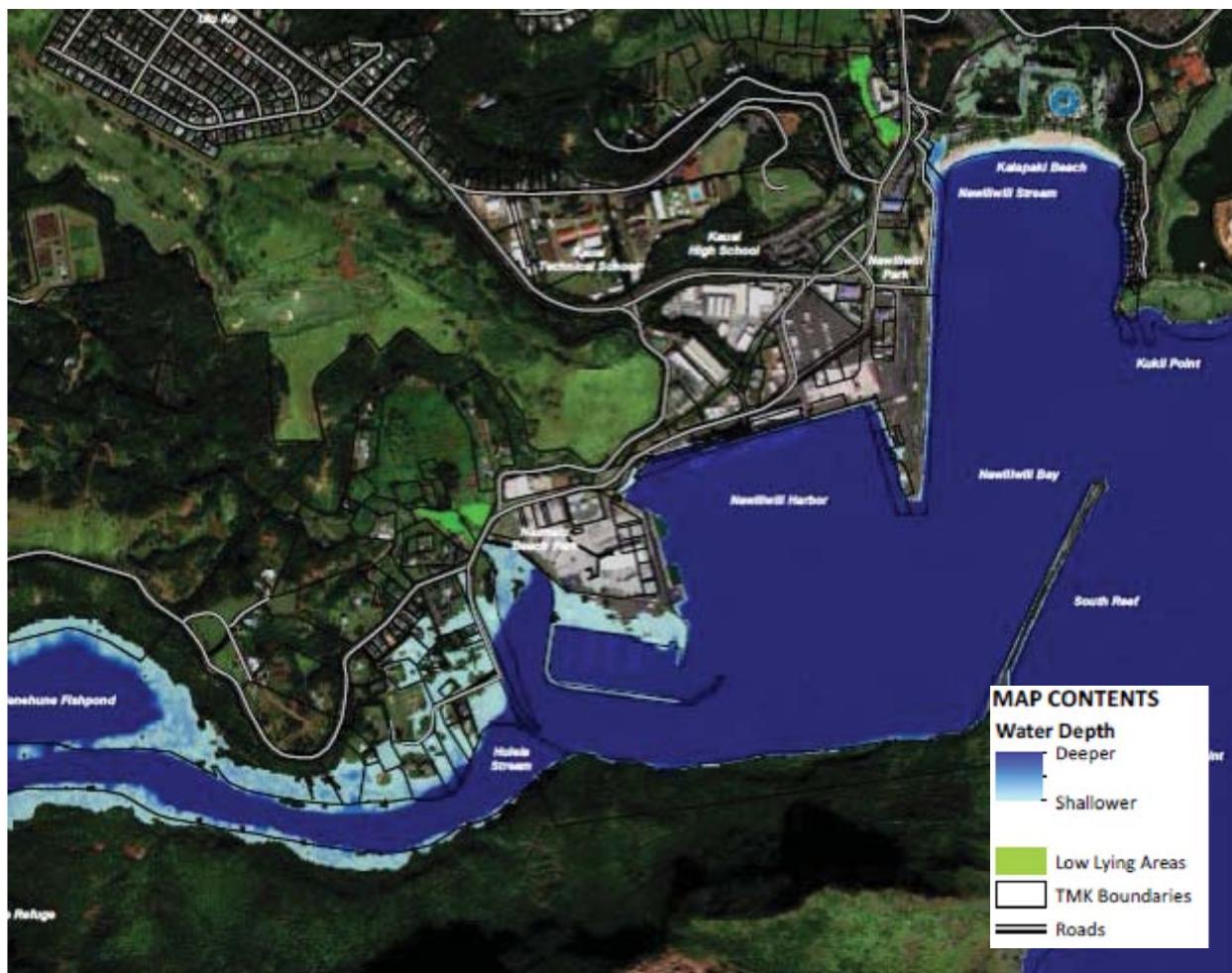
- | | | | |
|---|-------------------------|--|--------------------------|
| | A Flood Zone | | Tsunami Evacuation Zone |
| | AE Flood Zone | | Līhu'e Planning District |
| | AE Flood Zone, Floodway | ● | Emergency Shelters |
| | VE Flood Zone | | |

Ki'i 3-7 Ho'okahi Kapua'i Pi'ina 'Ili Kai o Nāwiliwili



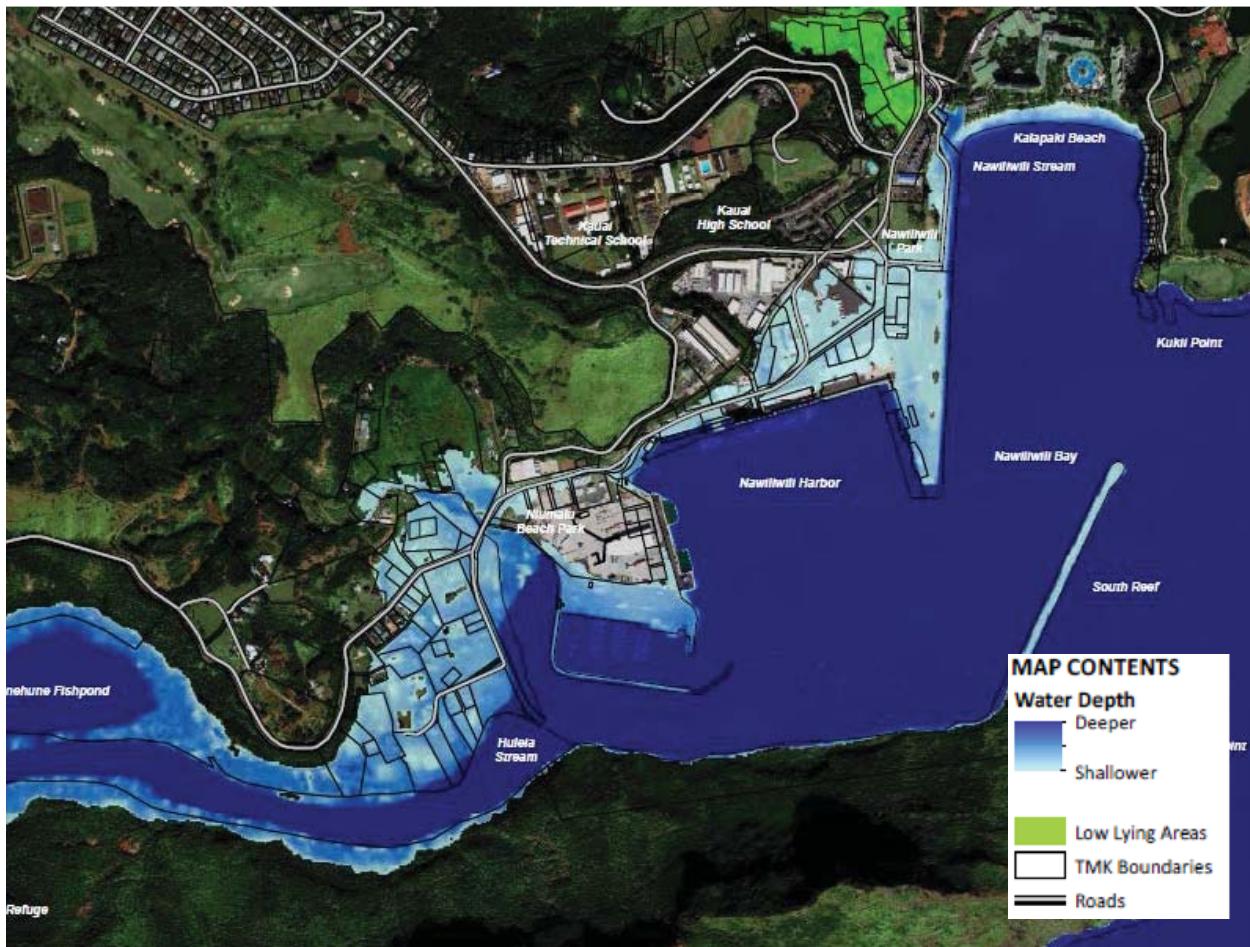
Kūmole: Kaua'i Climate Change and Coastal Hazards Assessment, University of Hawaii Sea Grant Extension Program. 2014.

Kī'i 3-8 'Ekolu Kapua'i Pi'ina Kai no Nāwiliwili



Source: *Kaua'i Climate Change and Coastal Hazards Assessment, University of Hawaii Sea Grant Extension Program, 2014.*

Ki'i 3-9 'Eono Kapua'i Pi'ina Kai no Nāwiliwili



Source: Kaua'i Climate Change and Coastal Hazards Assessment, University of Hawaii Sea Grant Extension Program. 2014.

3.8. NĀ KUMUWAIWAI HO'OILINA

He mau kumuwaiwai kūloheloh a mo'omeheu ko'iko'i ko Līhu'e 'Āpana e kino mai ai ka mō'aukala, mauli, a me ke 'ano. Hō'ike ka Palapala 'Āina Kumuwaiwai Ho'oilina o Līhu'e 'Āpana o Ka Papa Ho'olālā Laulaha (i pāku'i 'ia ma ka Pāku'ina B) i kekahio kēia mau hi'ona, i helu 'ia ma ka pahu ka'awale. Wehewehe nā paukū ma lalo nei i kēia mau hi'ona kaulana.

3.8.1. Nā Hi'ona Mō'aukala

He mau hi'ona mō'aukala ko'iko'i ko Līhu'e 'Āpana i helu 'ia ma ka Papa Inoa Moku'āina o Nā Wahi Mō'aukala ('O nā mea me nā kaha kuhi nā mea i helu pū 'ia ma ka Papa Inoa Aupuni o Nā Wahi Mō'aukala):

- 'Alekoko a i 'ole Menehune Loko*
- Grove Farm Kauhale*
- Grove Farm Company Ka'aahi*
- Līhu'e Kikowaena Kiwila 'Āpana Mō'aukala*
- Līhu'e Hongwanji Misiona*
- Hale Leka US Kahiko – Līhu'e*
- Albert Spencer Wilikoki Hale (Kaua'i Hale Hō'ike'ike)*
- Kilohana (Gaylord P. Wilikoki Hale)
- Kaipu Kauhale Mahikō*
- Wailua Huina Heiau*
- Kapaia Uapo Māewa

Hō'ike 'ia nā wahi i helu 'ia ma ka Papa Inoa

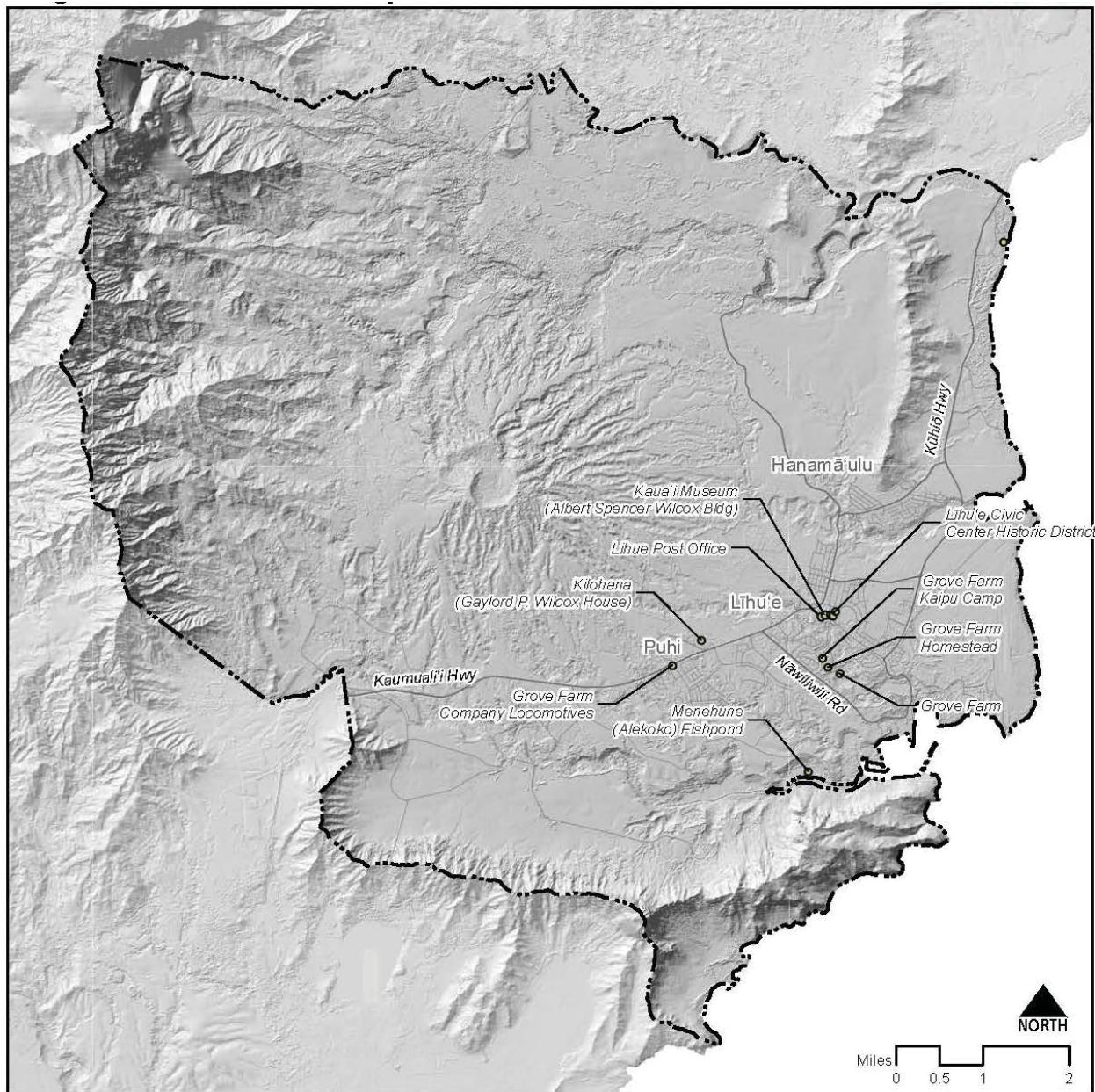
Moku'āina a Aupuni o Nā Wahi Mō'aukala ma ke Kī'i 3-10. 'O nā hi'ona kaulana i hō'ano i nā kau ma mua, e like me ka Hale Wilikō o Līhu'e Mahikō a me nā paipū 'uahi, ua nalohia.

He wahi nā alanui ma ka mō'aukala i lilo i wahi ko'iko'i e hui ai me nā po'e a i ho'ohana 'ia i māka 'āina kuhia. 'O ka huina alanui o Laiki Alanui me Halekō Ala ke kikowaena kaona o ka pā'oihana a me ka laulauna 'ana ma mua kahi i kū ai Līhu'e Hale Kū'ai a me Tip Top ma nā kihi 'oko'a. Ma ka wā mahikō ma Hawai'i, 'o ka hana kiwila o ke alanui ma nā kaona kua'āina he mea nui no ka laulauna 'ana me ke ka'ana nū hou a lako.

Nā Kumuwaiwai Ho'oilina o Līhu'e 'Āpana i Helu 'ia ma ka Papa Ho'olālā Laulaha o Kaua'i

- Nā Hi'ona 'Āina Ko'iko'i: Hā'upu Pae Mauna, Kilohana Lua, Kālepa Kualono, Hanamā'ulu Kahawai, Pū'ali Kahawai, Hulē'ia Kahawai, Wailua Kahawai.
- Nā Ala Komo Kū'ikena: Mā'alo Alanui, Kapule Alaloa, Kūhiō Alaloa a me Kaumuali'i Alaloa ma waena o Kilohana a me Nāwiliwili Alanui
- Nā 'Āpana: Ma kai o Kuahonu Lae a me Punahoa Lae
- Nā Wahi 'Elikoehana i Helu 'Ia: Hauola Pu'uhonua a me 'Alekoko Loko
- Heiau: Malae Heiau, Poliahu Heiau, Hikinaakalā Heiau, Holoholokū Heiau
- Nā Hale a me nā Kauhale Mō'aukala: Hale Kalana a me ka Hale Pāku'i, Grove Farm Kauhale, Kilohana, Kikowaena Kiwila, Kaua'i Hale Hō'ike'ike, a me kekahio mea keu
- Nā Pāka a me Nā Wahi Kumuwaiwai: Grove Farm Kauhale, Wailua Pāka Moku'āina Kahawai
- Nā 'Āina Ho'omalu Pekelala a Moku'āina: Hulē'ia 'Āina Ho'omalu Holoholona Aupuni.
- Kekahi Mau Hale Ko'iko'i 'Ē A'e: Ninini Lae Hale Ipukukui, Līhu'e Hale Wili
- Nā Awa a Paena Moku Li'iili'i: Nāwiliwili Awa
- Kekahi Mau Hi'ona Kūloheloh, Mō'aukala, Mo'omeheu, 'Ikena: Māhā'ulepū, Kīpū Wailele, 'Ōpaeka'a Wailele, Wailua Awa , Ulu Niu

Ki'i 3-10 Nā Wahi Mō'aukala i Helu 'ia ma Līhu'e 'Āpana

**Legend**

- Historic Properties
- Līhu'e Planning District
- Major Roads

He "puka komo" 'o Nāwiliwili Hono a me Kalapakī Kahakai i ke au kikilo no Kaua'i a ua loa'a he kahua kauhale o nā Kānaka Maoli. Ua loli ke 'ano o Nāwiliwili a me Niumalu i ka nui o ke kaiapuni kūkulu 'ia hou, akā 'o ke kū a 'ano mau o nā hi'ohi'ona 'āina e puni ana kai 'ike 'ia kēia mau wahi.



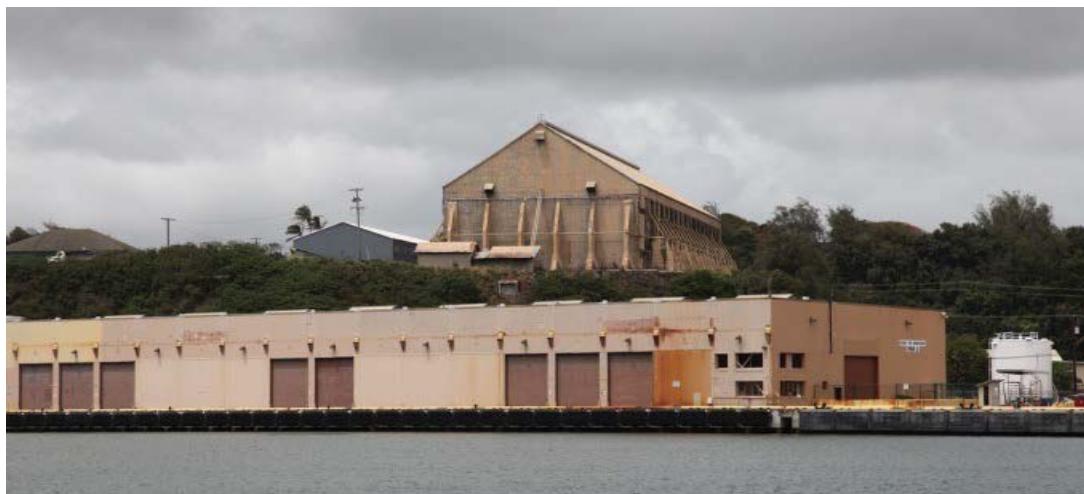
'O Ka Hale Kalana ka 'ōnohi o ka 'āpana mō'aukala



Aia ka 100 'eka Grove Farm Kauhale ma kauwahi o Līhu'e i mau ka mālama 'ia o nā hana pā hale a mahi 'ai i ho'omaka ma nā 1850. Ua kapa 'ia 'o Grove Farm ma muli o ka ulu kukui nui i kua 'ia no ka 'āina mahikō .



*Ua kūkulu 'ia 'o Kilohana ma 1936 i hale haku kaila Tudor a i mau nō ka 'ona 'ia e nā ho'oilina 'Ohana Wilikoki.
He Māka 'Āina Mō'aukala Mokuāina o Hawai'i ka hale.*



He mea ho'omana'o ka Hale'ukana Mahikō o Līhu'e o ke au ikaika o ka mahikō.

Aia 'o 'Alekkoko loko (i kapa pū 'ia 'o Menehune loko) ma ka muliwai o Hulē'ia Kahawai ma ka 'Āina Ho'omalu Holoholona Aupuni o Hulē'ia. He 238 ona 'eka o ke awāwa kahawai i lilo i kaianoho no nā manu wai 'ōiwi Hawai'i 'anehalapohe (ae'o, 'alae ke'oke'o, 'alae 'ula, a me ke kōloa maoli). He wahi 'elikoehana ko'iko'i kēia i 'ike 'ia he pā pōhaku he 2,700 kapua'i ka lō'ihi i paepae 'ia he mau haneli makahiki aku nei.



*Kahe 'o Wailua Kahawai ma ka lihi 'ākau o ka 'Āpana
e ho'omaka ana ma ke po'o wai o Wa'ale'ale mauna
ma ka piko o ka mokupuni.*



'Alekoko Loko

3.8.2. Nā Kumuawaiwai 'Elikoehana & Mo'omeheu

Ua ho'opa'a 'o Cultural Surveys Hawai'i i kekahi hō'ike laulaha kumuawaiwai 'elikoeħana a mo'omeheu no kēia Papa Ho'olālā Kaiaulu o Līhu'e (CSH 2013). Ua palapala 'ia ma kahi o ho'okahi haneli mau noi'i 'elikoeħana a ma kahi o 'elua haneli mau kumuawaiwai mo'omeheu (wahi 'elikoeħana a hi'ona hale) ma loko o Līhu'e 'Āpana, me ka nui o nā noi'i 'ana a me nā wahi i helu 'ia ma kahi o ke kapa kai. He mau 'ano ko kēia mau wahi mai nā mea ma mua o ka hiki 'ana mai o ko waho a i nā mea o ka wā mō'aukala e like me nā heiau, hi'ona mahi 'ai (nā hi'ona ho'okahe wai, nā lo'i, 'auwai), nā koehana noho, nā hē, uapo, loko, waihona mo'omeheu, pā ilina, a me nā hale mō'aukala.

'O nā kumuawaiwai mo'omeheu e loa'a ana paha ma kahi pāhana nā wahī ma mua a ma ka wā o ka mō'aukala. 'O nā mea o mua nā hē kanaka, heiau a me nā hi'ona 'āina mahi'ai. 'O nā mea o hope nā hi'ona 'āina mahikō a me nā hale, uapo, māhele alahao i waiho 'ia, hi'ona mahi'ai, a me nā pā ilina kanaka.

3.9. KE KAIAPUNI KŪKULU 'IA

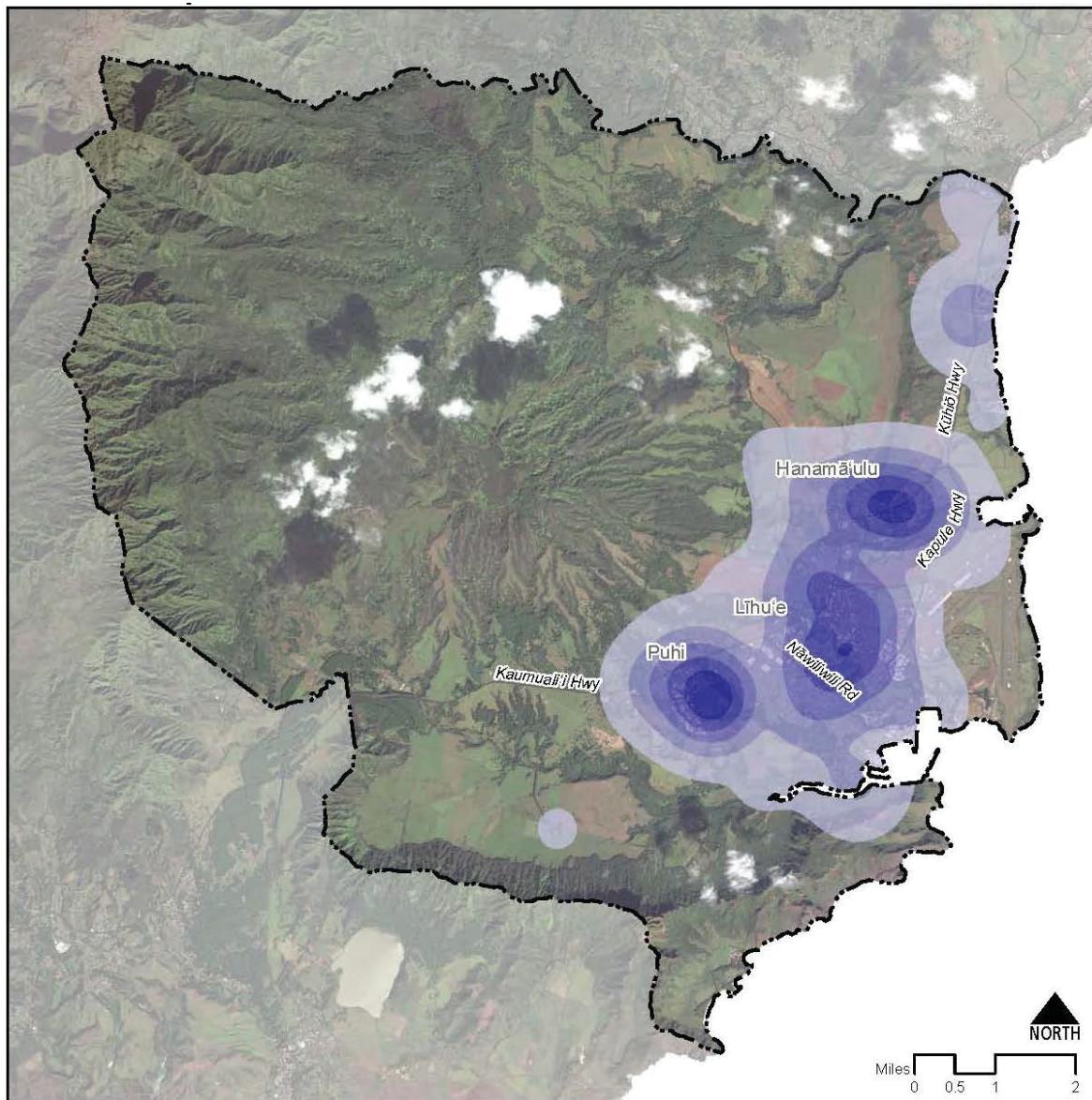
Ua kino mai ko Kaua'i kaiapuni kūkulu 'ia i ka lauana kūkulu o nā kaona mahikō a me nā kauhale mahikō ma kahi o nā alanui nui a me nā māla kō e puni ana. 'O nā pae maunā a me nā oawa ke kahua kūloheloh o Līhu'e e apo ana i nā lauana 'āina mahi 'ai i waiho 'ia. Mau nō kēia lauana nohona a i kēia wā a ua pa'a ia i ke kālele wahi o nā kama'āina. 'O kekahī mea i like ke ko'iko'i nā oawa e māhele ana i ke kaiapuni kūkulu 'ia i mau wahi e mahi 'ai ai a e kūkulu kiwikā ai. 'O Līhu'e, e like ho'i me Hanamā'ulu a me Puhi, ua 'oko'a ia mai nā kaona 'ē a'e o Kaua'i no ke kūkulu nui 'ia a no ko lākou 'ano kiwikā mai ka nui o nā wahi o Kaua'i. E mau ana nō kona 'ano kikowaena kiwikā o Kaua'i, a no ia kumu e pi'i hou ana ka ikaika o ka ulu 'ana a me ke kūkulu 'ana. Launa ia me ka man'o kia i hō'ike 'ia ma ka Papa Ho'olālā Kaiaulu o Līhu'e a me ka Papa Ho'olālā Laulaha o Kaua'i.

'O nā paukū ma lalo ka wehewehe 'ana i ka lauana nohona, kūkulu, a me ka hai limahana 'ana ma Līhu'e 'Āpana.

3.9.1. Nā Kikowaena Nohona a Hai Māhele

'O nā kikowaena māhele nui o ka nohona a me ka hai ma Līhu'e 'Āpana nā kaiaulu 'o Līhu'e, Puhi, a me Hanamā'ulu. 'O kēia nā kikowaena kama'āina nui, a he mau kikowaena kū'ai ko lākou me kekahī mau hana hai limahana. 'O ka nui o ia ma Līhu'e. Hele ka nui o nā kama'āina mai nā wahi e puni ana i ke kikowaena o Līhu'e a me Puhi no ka hana. Hō'ike 'ia kēia lauana ma Ki'i 3-11 a me Ki'i 3-12.

Ki'i 3-11 Nā Kikowaena Nohona Kama'āina: Kahi E noho Ai Nā Limahana

**Legend**

5 - 122 Workers/Sq. Mile	1,890 - 2,950 Workers/Sq. Mile
123 - 476 Workers/Sq. Mile	
477 - 1,065 Workers/Sq. Mile	
1,066 - 1,889 Workers/Sq. Mile	

— Līhu'e Planning District
— Major Roads