

NĀ HŌ‘IKE HOPE

KA PAPA HANA LAULĀ
I HŌ‘ANO HOU ‘IA
WEHEWEHE ‘ANO NO NĀ PONO
KŪLANAKAUHALE O KAUAI

1. KA HANA MEA KAU
2. KA HANA HO‘OKAHE WAI
3. KA HANA WAI
4. KA HANA WAI MEA ‘INO
5. KA HANA ‘ŌPALA PA‘A

Mei 2015

HO‘OMĀKAUCAU ‘IA NA:

Ke Kalana ‘o Kauai



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Ka Papa Hana Laulā i Hō‘ano Hou ‘ia
 Wehewehe ‘Ano no nā Pono Kūlanakauhale o Kaua‘i
 Ka Hana Mea Kau

Papa Kuhikuhī

Ho‘omaika‘i
Ho‘ola‘a
Nā Hua Ho‘opōkole

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 Wehewehe ‘Ano no nā Pono Kūlanakauhale o Kaua‘i
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Nā Palapala i Hō‘ike ‘ia

PAPA HANA LAULĀ I HŌ‘ANO HOU ‘IA
WEHEWEHE ‘ANO NO NĀ PONO KŪLANAKAUHALE O KAUAI

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Nā ‘Enikinia o Aqua

**KA PAPA HANA LAULĀ I HŌ‘ANO HOU ‘IA
WEHEWEHE ‘ANO NO NĀ PONO KŪLANAKAUHALE O KAUAI**

Ho‘ola‘a:

Na Peter Nakamura, Manakia no ka Wā Lō‘ihī o ka Māhele
Me ka mahalo no kona kūpa‘a ma hope o ka lawelawe ‘ana i ka po‘e o Kaua‘i.

NĀ HUA HO‘OPŌKOLE

AD	Anaerobic Digestion
ADA	Americans with Disability Act
ADWF	Average Daily Wastewater Flow Rate
B	Billion
BMPs	Best Management Practices
C&D	Construction and Demolition
CESQGs	Conditionally Exempt Small Quantity Generators
CFR	Code of Federal Regulations
CIP	Capital Improvements Program
CNG	Compressed Natural Gas
CRCs	Certified Redemption Centers
CRPL	Capital Replacement Program
DAF	Dissolved Air Flotation
DAFT	Dissolved Air Flotation Thickener
DDAM	Disaster Debris Action Manual
DHHL	Department of Hawaiian Homelands
DIY	Do-it Yourselfer
DLNR	Department of Land and Natural Resources
DMC	Debris Management Coordinator
DOH	Department of Health
DOT	Department of Transportation
DOW	Department of Water
EPA	Environmental Protection Agency

e-waste	Electronic Waste
FAHTP	Federal-Aid Highways 2035 Transportation Plan
FEMA	Federal Emergency Management Agency
FIS	Flood Insurance Study
FRC	Facility Reserve Charge
FY	Fiscal Year
GFWPP	Grove Farm Water Purification Plant
GHG	Greenhouse Gas
GID	Garden Isle Disposal
gpd	gallons per day
gpm	gallons per minute
HAR	Hawai‘i Administrative Rules
H.B.	House Bill
HDPE	High-density polyethylene
HECO	Hawaiian Electric Company
HHW	Household Hazardous Waste
HRS	Hawai‘i Revised Statutes
ISWMP	Integrated Solid Waste Management Plan
IWS	Individual Wastewater Systems
KBRA	Kaua‘i Beach Resort Association
LFG	Landfill Gas
LFGtE	Landfill Gas to Energy
LOS	Level of Service
M	Million
MBR	Membrane Bioreactor

MBBR	Moving Bed Biofilm Reactor
MG	Million Gallons
MGD	Million Gallons per Day
MLTP	Multimodal Land Transportation Plan
M.P.	Mile Post
MRF	Materials Recovery Facility
msl	Mean Sea Level
MSW	Municipal Solid Waste
MSWLF	Municipal Solid Waste Landfill
MW	Megawatt
NiCad	nickel-cadmium
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and Maintenance
OCC	old corrugated cardboard
PAYT	Pay-As-You-Throw
PET	Polyethylene terephthalate
PMRC	Puhi Metals Recycling Center
PMRF	Pacific Missile Range Facility
PRV	Pressure Reducing Valves
psi	Pounds per Square Inch
PVC	Polyvinyl Chloride
PWS	Princeville Water System
PWWF	Peak Wet Weather Wastewater Flow Rate
RCRA	Resource Conservation and Recovery Act
RDF	Refuse Derived Fuel

RRP	Resource Recovery Park
SAF	Socioeconomic Analysis and Forecasts
<u>SMS</u>	SMS Research and Marketing Service, Inc.
SRTS	Safe Routes to School
STIP	Statewide Transportation Improvement Plan
SWD	Solid Waste Division
TCC	Transportation Coordinating Committee
TDSR	Temporary Debris Storage and Reduction
TPY	Tons per year
UPS	Uninterrupted Power Supply
U.S.	United States
USACE	United States Army Corps of Engineers
UV	Ultraviolet
V/C	Volume to Capacity
VMT	Vehicle Miles of Travel
WMI	Waste Management, Inc.
WtE	Waste-To-Energy
WtF	Waste to Fuel
WWTP	Wastewater Treatment Plant

Papa Hana Laulā i Hō‘ano Hou ‘ia
Wehewehe ‘Ano no nā Pono Kūlanakauhale o Kaua‘i
Hō‘ulu‘ulu Ho‘okō

Hō‘ulu‘ulu Ho‘okō

Aia ma loko o kēia noi‘i ‘ana he wehewehe ‘ano o nā hana pono kūlanakauhale like ‘ole e lawelawe nei i nā kānaka o ke Kalana ‘o Kaua‘i. Wehewehe ‘ia nā pono kūlanakauhale e kū nei, ke kūlana, nā hemahema, he wānana no nā makemake, a me nā mana‘o kōkua no nā ha‘ina. Mana‘o ‘ia e ho‘ohana ‘ia i wehewehe ‘ano pili hana mīkini i ka wā nō e hana ‘ia ana ka Papa Hana Laulā i Hō‘ano Hou ‘ia o Kaua‘i.

Ua ho‘okumu ‘ia ka wehewehe ‘ano pono kūlanakauhale ma luna o ke kūkākūkā ‘ana me nā ‘oihana o ke Kalana a me ka nānā pū ‘ana ho‘i i nā noi‘i e holomua nei. Ua loa‘a nā kuhi no nā lilo no ka ho‘oponopono ‘ana mai nā ‘oihana Kalana mai a i ‘ole mai nā noi‘i e holomua nei i loa‘a.

‘Oiai ‘a‘ole i ho‘ohui ‘ia ka nānā ‘ia ‘ana o nā hana i ‘ona ‘ia i loko o ka ho‘ākāka mua ‘ana i kinohi, ua ho‘ohui pū ‘ia nā hālāwai ninaninā a me nā hana i ‘ona ‘ia e like me ka mea i hiki e ho‘ākāka pono ai i nā pono kūlanakauhale.

Ka Hana Mea Kau

‘O nā hana mea kau i loiilo ‘ia ai, ‘o ia nā alanui, ke ka‘a hali ukana, mea kau lehulehu, kau paikikala, po‘e hele wāwae, a me ka lawelawe pō‘ino. Ho‘ākāka ‘ia nā pono kūlanakauhale, nā makemake huaka‘i, a me ke kūlana o ka lawelawe ‘ana. Ho‘ohui pū ‘ia i loko o ka hō‘ike nā pahu hopu pili i ka mea kau e like me ia ma ka (1) Ka Papa Hana Mea Kau Nā Alaloa Kōkua Pekelala 2035 (Federal-Aid Highways 2035 Transportation Plan: FAHTP) a me ka (2) Ka Papa Hana Mea Kau ‘Āina o nā ‘Ano Like ‘Ole o Kaua‘i (Kaua‘i Multimodal Land Transportation Plan: MLTP). Ua hana ka FAHTP i papa helu o nā ha‘ina i hāpai ‘ia no ka wā lō‘ihī e ho‘oponopono ai i ka ho‘omau ‘ia ‘ana o ka hana, ka palekana, ka nui, a me nā makemake pili i ka pihana ka‘a, a pēia pū nā ha‘ina pili i nā ‘ao‘ao like ‘ole o ka pono kūlanakauhale. ‘A‘ole i kaupalena ‘ia ka papa helu o nā ha‘ina pili i ka polokalamu ma ka mo‘ohelu kū makahiki, ‘o ia ho‘i, hāpai ‘ia nā ha‘ina i hiki ma luna o nā makemake a me ka mea e hiki ai ke ho‘okō i nā pahu hopu o ka Papa Hana, a ‘a‘ohe pili i nā palena o ka mo‘ohelu kālā. Ke hāpai aku nei ka FAHTP i nā ha‘ina e ho‘oponopono ai i nā pilikia a me nā makemake pili i ka mea kau mai ka nānā ‘ana mai o ko kēlā me kēia ‘āina.

Ua ho‘ohana ‘ia kekahi wehewehe ‘ano i kūkulu ‘ia ma luna o kekahi mo‘olelo i no‘ono‘o wale ‘ia no ka wā e hiki mai ana e alaka‘i ai i ke kūkulu ‘ia ‘ana o nā polokalamu no ka ho‘okō ‘ia ‘ana o ka MLTP. Ma ka ho‘ohana ‘ana i nā ana hō‘ike i ka pono o ka hana, ua kūkulu ‘ia ‘elua mo‘olelo i no‘ono‘o wale ‘ia. Ma ka Mo‘olelo Kumu i No‘ono‘o Wale ‘ia, ‘a‘ohe ho‘ohuikau ‘ia ‘ana o nā ‘ano o ka holoholo ‘ana e ho‘ololi ana i nā hana a kānaka o kēia wā, ‘oiai inā pēlā, ‘ike ‘ia he 19 pakeneka ka pi‘i ‘ana o ka pihana ka‘a ā puni ka mokupuni i ka hiki ‘ana mai o ka 2035. Ma ka Mo‘olelo i Makemake ‘ia, hō‘ike ‘ia ka ho‘ohuikau ‘ana e mālama ai i ka pihana

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ka‘a i ka makahiki 2010 ā hiki i ka 2035. I loko o nā ho‘ohuikau ‘ana, nānā ‘ia ka pi‘i ‘ana o ka pakeneka o ka nui o ka po‘e e hele wāwae ana, ka po‘e kau paikikala, a me ka mea kau lehulehu, ‘o ka hopena, ‘o ia ka emi ‘ana o ka pakeneka o ke kalaiwa ‘ana. Ma ka hō‘ike o ka MLTP, i mea e ho‘okō ‘ia ai ka Mo‘olelo i Makemake ‘ia, he pono e ha‘alele ‘ia ke kalaiwa ho‘okahi ‘ana no kekahi ‘ano mea kau ‘oko‘a, e like me ka hele wāwae ‘ana, ke kau paikikala, a me ka kau ‘ana ma luna o kekahi mea kau lehulehu. ‘O ka pahu hopu nui, ‘o ia ke kāohi ‘ana i ka pi‘i hou ‘ana o ka huina ka‘a me ka pi‘i pū nō na‘e o ka heluna kanaka i kuhi ‘ia. Ho‘ākāka ‘ia i loko o ka papa hana nā mea e hiki ai ke ho‘opuka ke Kalana, ka Moku‘āina, a me nā ‘oihana ‘ē a‘e ‘eono polokalamu ma waena o kēia manawa a me ka 2035: me kekahī polokalamu mea kau pū kekahī, he polokalamu kau paikikala, he polokalamu po‘e hele wāwae, he polokalamu alanui kalana, he polokalamu hali mea kanu, a me kekahī polokalamu ho‘ohana ‘āina.

‘O ka mea nui e ‘oko‘a ai ka FAHTP a me ka MLTP, ‘o ia ka hana ‘ia ‘ana o ka Mo‘olelo i Makemake ‘ia i loko o ka MLTP i kuhi ‘ia ai ka ho‘okō ‘ia ai ka ho‘ohuikau ‘ana, ‘o ka hopena, ‘a‘ohe pi‘i ‘ana o ka huina ka‘a, a pēlā e emi ai ka mea e pono ai ka ho‘olilo nui ‘an ai ke kālā no nā hanana ho‘oponopono ‘ana i ka nui e like me ia i hō‘ike ‘ia ma ka FAHTP.

Ka Hana Ho‘okahe Wai

Ho‘ākāka ‘ia ka hana ho‘okahe wai e kū nei a me nā pilikia wai hālana nui o ka mokupuni, e like me ia i ho‘ākāka ‘ia e ka Federal Emergency Management Agency (FEMA) i loko o ka hō‘ike, ‘o ka Noi‘i ‘Inikua Wai Hālana (Flood Insurance Study: FIS) o ke Kalana ‘o Kaua‘i. Ho‘ākāka ‘ia ‘ekolu mau ‘ano o ka wai hālana: ka wai pi‘i kahawai, ke kai mimiki, a me ka makahi pāhili.

‘O nā kahawai a me nā muliwai, ‘o ia nā hana ho‘okahe wai nui no Kaua‘i. Loa‘a nō ho‘i ka hana ‘auwai a nā mahi kō ā puni ka mokupuni he ‘auwaha ho‘okahe wai nō ho‘i ka hana. Paipai ‘ia i loko o ke Kaua‘i County Storm Water Runoff System Manual (Drainage Standards), ka mea i ho‘ohana ‘ia mai Iulai 2001, ka mālama ‘ia ‘ana o kēia mau hana ho‘okahe wai loa‘a wale. I mea e ho‘ēmi ai i ka hālana wai ma muli o ka nui i kaupalena ‘ia ai kēia mau ‘auwaha ho‘okahe wai loa‘a wale, ua kūkulu ka Department of the Army Corps of Engineers i nā pani wai ma ka‘e o kekahī o nā kahawai o Kaua‘i.

‘A‘ohe Papa Hana Ho‘okahe Wai no ka mokupuni, koe no nā kaiāulu a me ke kūkulu hale ‘ana. He makemake ka ‘Oihana Pono Kūlanakauhale e nānā nui i kekahī mau wahi a me nā ‘aina kumu wai pilikia i ho‘ākāka ‘ia me ka mana‘o e kūkulu ‘ia nā papa hana e ho‘ākāka ana i nā hanana ho‘opale a ho‘oponopono.

Paipai ‘ia nā Papa Hana Ho‘okahe Wai Nui no nā wahi i kuluma ka hālana wai, e like me Hanalei, Nāwiliwili, Kapa‘a, Wailua, Po‘ipū, a me Kekaha. Na ka Papa Hana Ho‘okahe Wai Nui e ho‘olako i ka wehewehe ‘ano o nā kūlana hālana wai i ho‘ākāka ‘ia a nāna e loiilo i ka mea e pono ai nā pani wai, nā poho ‘āina wai a hanana ho‘opale wai hālana hou a‘e paha.

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Ho‘ākāka ‘ia ma loko o ke Kānawai o ke Kalana ‘o Kaua‘i o ka 2006 nā ana a me nā koi no ka pono kūlanakauhale no nā paipu ho‘okahe wai penei:

- Pale a mālama i nā ala ho‘okahe wai loa‘a wale e kū nei;
- Pale i ke kaiāulu mai ka pilikia hālana wai;
- Ho‘olako i kekahī hana e wehe ‘ia ai ka wai mai loko mai o ke kaiāulu me ka luku a i ‘ole ka ho‘opilikia ‘ole ‘ana i ka ‘āina loa‘a wale, a i ‘ole nā ukana a i ‘ole nā kānaka;
- I mea e pale ai i nā ‘auwaha wai a me nā kapa kai, ho‘ēmi i ka nui o nā lā‘au ‘ino a me ka mākū ā like me ka nui ma mua o ke kūkulu hale ‘ana;
- I mea e pale ai i nā ‘auwaha wai a me ke kapa kai, mālama i ka palena nui o ka wai kahe ā ‘ano like nō me ia ma mu ao ke kūkulu hale ‘ana; a
- Pale i nā ‘āina ālalia a me wahi i ‘ano like me kēlā e ‘ike ‘ia ai ka pono o ka wai. Penei ke ‘ano: ‘a‘e a ‘a‘ole e ‘eli i nā ‘auwaha ke hiki i mea e ho‘ololi ‘ole ‘ia ai nā papakū kahawai ma kahi e nui ai nā loli o ka ‘āina loa‘a wale.

No nā papa hana kūkulu hale hou, paipai ‘ia e ke Ana Ho‘okahe Wai o Kaua‘i (Drainage Standards) ka ho‘opa‘a ‘ana i ka wai kahe i mea e mālama ‘ia ai ke kahe ‘ana o ka wai e like me ia ma mua o ke kūkulu ‘ana.

Ka Hana Wai

He nui nō nā hana wai kahi loa i kūkulu ‘ia e nā hui mahi kō a ho‘onui hou ‘ia ma hope a ho‘oili ‘ia i ka ‘Oihana Wai o ke Kalana nāna e ho‘omalu, ho‘oponopono, a ho‘oholo.

He ‘umi kumamākolu (13) nō mau hana e kū nei e lawelawe nei i kekahī mau wahi lawelawe i ho‘ākāka ‘ia, penei: Waimea-Kekaha, Hanapēpē-‘Ele‘ele, Kalāheo, Lāwa‘i-‘Ōma‘o, Kōloa-Po‘ipū, Puhi-Līhu‘e-Hanamā‘ulu, Wailua-Kapa‘a, Anahola, Moloa‘a, Kīlauea-Waipakē-Kalihiwai, ‘Anini, Hanalei, a me Wainiha-Hā‘ena. ‘O nā hana i ‘ona ‘ia e kū nei, ‘o ia ka Grove Farm Water Purification Plant, Princeville Utilities, a me ka Pacific Missile Range Facility (PMRF).

E like me ia i koi ‘ia e ka HRS Section 46-143(1)(A), ua ho‘omākaukau ‘ia ka Noi‘i Loiloi Makemake a me ke Kauoha Kahua Ho‘oka‘awale ‘ia i Hō‘ano Hou ‘ia e ho‘ākāka ai i nā hemahema e kū nei ma nā hana kumu a mālama. Ua hana ‘ia ka Noi‘i Loiloi Makemake no ka ‘Oihana Wai i loko o Nowemapa 2013, akā, oia mau nō ‘a‘ole i pau pono ke kākau ‘ana a ‘a‘ole na‘e i ‘āpono ‘ia e ka ‘Oihana.

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I loko o kēia hō‘ike kekahi ho‘ākāka pōkole no nā hemahema o ke kumu, ka mālama, a me ka ho‘olele ‘ana e kū nei e like me ia i hō‘ike ‘ia ma ke kākau mua ‘ana o ka Noi‘i Loilo Makemake o Nowemapa 2013. ‘O nā hemahema i loa‘a, ma muli nō ia o ka nui o nā makahiki, ka pau ‘ana o ka pono, a i ‘ole no ka lawa ‘ole o ka nui ke ho‘ohālike ‘ia me nā ana ho‘opalekana ahi.

I loko o ka hō‘ike Papa Hana Wai 2020, ua ho‘ohana ‘ia nā ‘ike wai o ka wā ma mua mai ka 1995 ā ka 1998 hui pū ‘ia me nā wānana heluna kanaka me ka ho‘ohana ‘āina mai ka Papa Hana Laulā o Kaua‘i o ka 2000 e kūkulu ai i nā makemake wai o ka wā e hiki mai ana i loko o 2005, 2010, a me ka 2020. Ma loko o ke kākau ‘ana o ka Noi‘i Loilo Makemake o Nowemapa 2013, ua hō‘ulu‘ulu ‘ia nā wānana no ka makemake wai no ka 2030 ma ka ho‘ohuihui ‘ana i nā wānana heluna kanaka i loko o ka hō‘ike Papa Hana Wai 2020 no nā makahiki 2020 a me ka 2050, a laila, ma ke kau ‘ana i nā lakio ho‘ohana wai o ka makahiki 2020.

Ua kūkulu ‘ia ma loko o ka hō‘ike Papa Hana Wai 2020 nā hanana ho‘oponopono waiwai e ho‘oponopono ai i nā makemake wai o ka wā lō‘ihī i māhele o kona papa hana Polokalamu Ho‘oponopono Waiwai (CIP). Mai ka wā mai i ‘āpono ‘ia ai i loko o 2000, ua nui nā hanana i kūkulu ‘ia. Ua hō‘ike ‘ia i loko o ke kākau mua ‘ana o ka hō‘ike Loilo Makemake he papa helu i ho‘opōkole ‘ia a hō‘ano hou ‘ia o nā Hanana Kūkulu Kahua.

Ma hope o ka hō‘ano hou ‘ana o ka Papa Hana Laulā o Kaua‘i e kū nei, e ho‘omaka ka ‘Oihana Wai i ka noi‘i Papa Hana Wai 2040 hou. Ma kēia noi‘i ‘ana, e ho‘ohui ‘ia ana nā wānana heluna kanaka a me nā ‘ike kānaka i loko o ka SAF i ho‘omākaukau ‘ia no ka Papa Hana Laulā i hō‘ano hou ‘ia. Paipai ‘ia e ho‘ohui ‘ia i loko o ka no‘i hou kēia mau mana‘o:

- Ka loihoi ‘ia ‘ana o ka mea e hiki ai a me ka maika‘i o ka ho‘ohui ‘ia ‘ana o nā hana wai i ‘ona ‘ia i loko o ka hana o ke Kalana; a me
- Ka loihoi ‘ia ‘ana o ka ho‘ohana ‘ia ‘ana o ka ‘aila i hiki ke ho‘ohana hou ‘ia ma nā kahua.

Ka Hana Wai Mea ‘Ino

He mau hana wai kikowaena like ‘ole nō ma ka mokupuni, inā he ‘ona ‘ia e kekahi po‘e a i ‘ole e ke Kalana ‘o Kaua‘i. Hō‘ulu‘ulu ‘ia ma kēia hō‘ike nā papa hana wai mea ‘ino i ho‘opihapiha ‘ia no nā wahi nui ma ka mokupuni.

Na ke Kalana e ho‘olako i ka lawelawe wai mea ‘ino no Waimea, Hanapēpē-‘Ele‘ele, Līhu‘e-Hanamā‘ulu, a me Wailua-Kapa‘a. He nui nō nā hana wai mea ‘ino i ‘ona ‘ia e kekahi po‘e ma Kaua‘i. Ma nā wahi kua‘āina, kahi i nele ai ka hana wai mea ‘ino, nui nā kānaka a me nā hui li‘ili‘i mai e ho‘ohana ana i nā Hana Wai Mea ‘Ino Kū Ho‘okahi a me nā luawai pelapela. ‘O nā wahi e kauka‘i ana ma luna o nā kahua ho‘oponopono wai mea ‘ino a i ‘ole nā IWS a i ‘ole nā

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luawai pelapela, ‘o ia ‘o Puhi, Kekaha, Princeville, a me Po‘ipū. Lawelawe kekahi mau hana wai i ‘ona ‘ia i nā wahi li‘ili‘i mai, e like me Nāwiliwili, Kōke‘e, Kalepa Village, Hulē‘ia, a me Whaler’s Cove.

‘O ka hana ma‘amau, kuhi ‘ia nā lakio kahe wai mea ‘ino ma muli o nā kuhi ho‘ohana ‘āina a me ka heluna kanaka. Inā ‘ona ‘ia ke kahua ho‘oponopono wai mea ‘ino e ke Kalana a i ‘ole e kekahi po‘e, he pono nō e hiki ke ho‘okō ‘ia nā makemake ma o ka nui i kūkulu ‘ia i loko o ka hana ho‘oponopono wai mea ‘ino. Malia paha he pono nō ka ho‘oponopono hou ‘ana a me ka ho‘onui hou ‘ana e kūpono ai ka nui o ka wai mea ‘ino e pi‘i mau ana mai nā wahi mai ‘akahi nō a kūkulu ‘ia ai nā hale hou.

Ho‘olaha ‘ia nā makemake o ka wā e hiki mai ana a me nā ho‘oponopono ‘ana i paipai ‘ia no ka hana wai mea ‘ino o ke Kalana i hui pū ‘ia me ke Kahua Ho‘oponopono Wai Mea ‘Ino o Waimea, ke Kahua Ho‘oponopono Wai Mea ‘Ino o ‘Ele‘ele, ke Kahua Ho‘oponopono Wai Mea ‘Ino o Līhu‘e, a me ke Kahua Ho‘oponopono Wai Mea ‘Ino o Wailua.

Ka Hana ‘Ōpala Pa‘a

Ho‘omaka ka wehewehe ‘ano pono kūlanakauhale ‘ōpala pa‘a me ka hō‘ulu‘ulu ‘ana no ka hana ho‘oponopono ‘ōpala pa‘a e kū nei no ka hō‘ili‘ili a me ke kiloi ‘ōpala ‘ana, pēia pū nā polokalamu e kū nei i pili i ka ho‘ohana hou ‘ana, ka ho‘opō‘aiāpuni ‘ana, a me ke ki‘i hou ‘ana.

Wānana ‘ia nā ‘ano ‘ōpala a me ka ho‘onui ‘ana no ke kōā manawa he 15 makahiki no ke kūkulu ‘ana i ka papa hana mai ka 2020 ā ka 2035. I kēia wā, kuhi ke Kalana aia ma kahi o ke 31 pakeneka ka nui o ka lalau ‘ana. Paipai ‘ia e ka Papa Hana Ho‘oponopono ‘Ōpala Pa‘a i Ho‘ohuihui ‘ia o ke Kalana he pu‘u polokalamu, hanana, a me nā kahua e kūkulu ‘ia i mea e emi ai ka nui o ka hana ‘ana i ka ‘ōpala, a ho‘onui i ka lakio o ka ho‘ohuli ‘ana i ka ‘ōpala i kahi ‘ē ma o ka ho‘ohana hou ‘ana, ka ho‘opō‘aiāpuni ‘ana, a me ke ki‘i hou ‘ana. Ua ho‘ākāka ke Kalana i kekahī hanana Kahua Ho‘onui Waiwai (RRP) i māhele mea nui e kō ai ka pahu hopu o ka wā lō‘ihī e ho‘onui ai i ka ho‘ohuli ‘ana i kahi ‘ē he 70 pakeneka i ka hiki ‘ana mai o ka 2023.

Ke ho‘olālā nei ke Kalana e ho‘omau i ka ‘ae ‘ana i nā palapala ‘ae a me nā hanana kūkulu hou no ka ho‘ākea ‘ana i ke Kahua Pu‘u ‘Ōpala Aupuni o Kekaha (MSWLF) me ke kūkulu pū i nā hale i luna i lalo. E pono ana kekahī kahua pu‘u ‘ōpala hou i ka piha pū ‘ana o ka MSWLF o Kekaha.

Ke no‘ono‘o ‘ia maila nā hana kiloi ‘ōpala hou like ‘ole, e like me kekahī kahua puhi mea ola, he kahua Ho‘ololi Ea Pu‘u ‘Ōpala i ‘Aila (LGtE), he kahua Ho‘ololi ‘Ōpala i ‘Aila (WtE), a me kekahī kahua Ho‘ololi ‘Ōpala i ‘Aila Kakalina (WtF).

He nui nō nā hui i loko o ke Kalana i komo i nā hana ho‘ēmi kumu ‘ōpala ma ka hana ‘ana i nā hanana e ho‘ohana hou ai nā kānaka i nā mea like ‘ole ma kahi o ke kū‘ai ‘ana i nā mea hou. ‘O

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kekahi o kēia mau hui, ‘o ia ho‘i ke Aloha Shares Network, nā pā mālama pua‘a kūloko, Habitat for Humanity, thrift store, Local Trade radio program ma ke KONG AM 570, ka ho‘ohana hou ‘ia ‘ana o ka peanut (mea ho‘opihapiha pahu) ma ke Ke‘ena Ho‘opō‘aiāpuni o ke Kalana, a me ke Kaua‘i Food Bank.

**PAPA HANA LAULĀ I HŌ‘ANO HOU ‘IA
WEHEWEHE ‘ANO NO NĀ PONO KŪLANAKAUHALE O KAUAI**

HANA MEA KAU

Ho‘omākaukau ‘ia na

ke Kalana ‘o Kauai

Ho‘omākaukau ‘ia e

ka R.M. Towill Corporation

Mei 2015

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Hana Mea Kau

Ka Mea Kau

‘O ke kumu no ka wehewehe ‘ano no nā pono kūlanakauhale mea kau me kona pili i ka Papa Hana Laulā i Hō‘ano Hou ‘ia, ‘o ia ka hō‘ike‘ike ‘ana ‘elua mau palapala nui pili i ka mea kau no ka mokupuni ‘o Kaua‘i, ka ho‘ohālike ‘ana i nā kuhi a me ke ‘ano o ka hana i hana ‘ia ai kēlā me kēia palapala, a me ka ho‘ohālikelike aku ia mau kuhi ‘ana i ho‘ohana ‘ia no kēlā me kēia palapala me nā kuhi hou i ho‘omākaukau ‘ia no ka Papa Hana Laulā i Hō‘ano Hou ‘ia. Hiki ke ho‘ohana ‘ia kēia ‘ike e ke Kalana e ho‘okumu ai i nā lula alaka‘i e alaka‘i ai i nā ho‘oponopono waiwai ‘ana i ka hana mea kau o ke Kalana i ka wā e hiki mai ana.

Māhele 1. Nā Palapala Papa Hana Mea Kau e Kū nei

Aia i loko o kēia māhele kekahi hō‘ulu‘ulu no ‘elua mau palapala papa hana mea kau no ka mokupuni ‘o Kaua‘i.

1.1 Ka Papa Hana Mea Kau Nā Alaloa Kōkua Pekelala 2035 (FAHTP)

Ua ho‘oholo ‘ia ka Papa Hana Mea Kau Nā Alaloa Kōkua Pekelala 2035 (FAHTP) no ka ‘Āpana ‘o Kaua‘i e ka ‘Oihana Mea Kau o ka Moku‘āina ma Iulai 2014. He papa hana ka FAHTP no ka wā lō‘ihī no ka loiiloī ‘ana i nā makemake i wānana ‘ia no ka wā e hiki mai ana ma ka ho‘ohālike ‘ana me nā pono kūlanakauhale mea kau e kū nei e ho‘oholo ai i nā makemake a me nā hemahema no ka hana Kōkua Pekelala no ka hana alaloa. Na nā hui nona kekahi kuleana i kōkua i ka ho‘ākāka ‘ana i nā mea e pono ai ka hana o kēlā me kēia wahi me ka ho‘oponopono pū ā kū i nā ‘ike o ka moku‘āina a me ka pekelala pili i ka ho‘olālā ‘ana no ke kūkulu ‘ana i nā pahu hopu o ka Papa Hana:

- Mālama a ho‘omalū i ka hana mea kau e kū nei
- Ho‘omalū a ho‘oponopono i ka palekana o nā ‘ano mea kau like ‘ole
- Kōkua i ke kūkulu ‘ia ‘ana o nā ‘ano mea kau like ‘ole a ho‘oponopono i nā alanui
- Ho‘oponopono i ka nui a me ka holo pono o ka hana
- Kōkua i ka hō‘ae ‘ana i ke ala e hele ai no ka pūhe‘e a me ka pō‘ino i ka wā pōpilikia
- Paipai i ke kūlana ikaika a me ka hiki ke hana i nā hana kūpono no ka loli o ke aniau
- Ho‘oponopono i ka ho‘olako kālā ‘ana

Na nā hui nona kekahi kuleana i ho‘ākāka i nā pono a me nā hemahema kekahi:

- Ho‘oponopono i nā makemake pili i ka nui a me ka pihana ka‘a

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- Hō‘ae aku i ke ala e hele ai no nā kaiāulu i ka wā pōpilikia
- Ho‘oponopono i ka palekana o nā mea kau ‘a‘ohe ona mīkini
- Ho‘oponopono i ka lawelawe kau lehulehu
- Ho‘omalu i ka holo pono ‘ana o nā ala loa i ka wā ua nui

Na ka FAHTP i hana i kekahī papa helu o nā ha‘ina i paipai ‘ia no ka wā lō‘ihī e ho‘oponopono ai i ka mau ‘ana o ka hana, ka palekana, ka nui, a me nā makemake pili i ka pihana ka‘a a me nā ha‘ina pili i nā ‘ano mea ha‘ina like ‘ole pili i nā pono kūlanakauhale.

1.2 Ka Papa Hana Mea Kau ‘Āina o nā ‘Ano Like ‘Ole o Kaua‘i (MLTP)

Ua ho‘omākaukau ‘ia ka Papa Hana Mea Kau ‘Āina o nā ‘Ano Like ‘Ole o Kaua‘i (MLTP) e ka Charlier Associates, Inc. no ke Kalana ‘o Kaua‘i. Ma loko o ka MLTP i ‘āpono ‘ia e ka ‘Aha Kalana o Kaua‘i ma Ianuali 30, 2013, ho‘okumu ‘ia kēia mau pahu hopu:

Pahu hopu 1. Lawelawe ‘ia ke Kalana ‘o Kaua‘i e kekahī hana mea kau o nā ‘ano like ‘ole nāna e ho‘olako i nā koho, ka laulā o nā hana i hiki ke hana ‘ia, a me ka pa‘a pono e pono ai ma ka loa‘a like i ka lehulehu.

Nā Makemake:

- a. Ho‘onui i ka laulā o nā ‘ano koho o nā mea kau i loa‘a i ka lehulehu
- b. Ho‘onui i nā kūlana lawelawe mea kau
- c. Ho‘ēmi i ka nui o nā ka‘a kau pākahi
- d. Ho‘ēmi i ka nui o nā mile i holo ‘ia e ke ka‘a (VMT) o kēlā me kēia kanaka
- e. Ho‘opōkole i ka lō‘ihī o ka holo ‘ana (nā ‘ano like ‘ole)
- f. Hō‘oi i ka pili ma waena o nā ‘ano ho‘ohana ‘ia ‘ana o ka ‘āina (nā ‘ano like ‘ole)
- g. Hō‘oia i ka loa‘a like aku i ka lehulehu me ka hiki ke holo nā kānaka o nā pae makahiki me nā kūlana waiwai like ‘ole a pau

Pahu hopu 2. Lawelawe ‘ia ke Kalana ‘o Kaua‘i e kekahī hana hana ka‘a hali ukana nāna e kāko‘o i nā ‘ao‘ao ho‘okele waiwai like ‘ole o ka mokupuni, e la‘a ka mea‘ai a me ka mea kanu, ke olakino a me ka pono o ke olakino, nā pā‘ani a me nā hana ho‘ole‘ale‘a, ka hana no‘eau a me ka nohona kanaka, ka hana akeakamai a me nā hana mīkini, a me nā hana mīkini i hiki ke ho‘omau ‘ia.

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Hana Mea Kau

Nā Makemake:

- a. Paipai i ka ho‘onui ‘ia o nā hana
- b. Kāko‘o i ka ho‘opukapuka aku o ka ‘ao‘ao kanu, hana, a me ka ho‘ouna ‘ia ‘ana o nā mea kanu kūloko
- c. Hō‘oi i ka loa‘a like aku i ka lehulehu nā māla ‘ai kaiāulu a me nā mākeke mahi ‘ai
- d. Ho‘oholomua i nā hana mīkini a me nā hana pili i ka hali ukana ‘ana i hiki ke ho‘omau ‘ia
- e. Pale i nā mea kau hali ukana mai nā hopena pilikia o ka wā pōkole o nā ‘ino a me ke ōla‘i a me ka pilikia o ka wā lō‘ihī no ka pi‘i o ka ‘ilikai

Pahu hopu 3. Lawelawe ‘ia ke Kalana ‘o Kaua‘i e kekahī hana mea kau nāna e kāko‘o i ka pa‘a pono o ka ho‘okele waiwai a ho‘olako i ka mea e loa‘a like ai i ka lehulehu nā mea e loa‘a ai nā hana a me ka mea e māhuahua ai ka ho‘okele waiwai.

Nā Makemake:

- a. Ho‘ēmi i nā lilo e hele ai i ka hana
- b. Ho‘ēmi i ka % o ka lilo o kēlā me kēia hale no ka ho‘olako ‘ana i ka hale a me ka mea kau
- c. Hana i nā hana i pili i nā hana mīkini mea kau i hiki ke ho‘omau ‘ia
- d. Pale i ka loa‘a like aku i ka lehulehu a me ka mea kau e holo ai ma muli o nā hopena pilikia o ka wā pōkole o nā ‘ino a me ke ōla‘i a me ka pilikia o ka wā lō‘ihī no ka pi‘i o ka ‘ilikai

Pahu hopu 4. Na ka hana mea kau o ke Kalana ‘o Kaua‘i e kāko‘o a ho‘omāhuahua i ke kūlana olakino o ka lehulehu.

Nā Makemake:

- a. Hō‘oi i ka pono o ka palekana o ka hele wāwae ‘ana ma nā kaiāulu, nā kauhale, a me nā kaona
- b. Hō‘oi i ka pono o ka palekana o ke kau paikikala ‘ana ma nā kaiāulu, nā kauhale, a me nā kaona

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- c. Ho‘olako i ka loa‘a like aku o nā kahua pā‘ani kūloko, nā pāka a me nā ala hele no ka po‘e noho ma ka mokupuni
- d. Ho‘olako i ka pili ‘ana ma waena o nā home a me nā kula no ka po‘e hele wāwae ma ke ‘ano palekana a kokoke
- e. Ho‘olako i ka pili ‘ana ma waena o nā home a me nā kula no ka po‘e kau paikikala ma ke ‘ano palekana a kokoke

Pahu hopu 5. E ho‘olalā a ho‘onohonoho ‘ia ka hana mea kau o ke Kalana ‘o Kaua‘i e pale ai a hō‘oi ai i nā hi‘ona ‘āina waiho wale a me ka pono o ka ‘āina ā puni.

Nā Makemake:

- a. Ho‘ēmi i ka meheu o nā alanui, nā alaloa, a me nā ala kalaiwa
- b. Ho‘ēmi i ka meheu o ka pāka ka‘a ‘ana ma ka ‘āina
- c. Ho‘ēmi i ke puhi ‘ia ‘ana o nā mea ‘ino e nā mea kau ‘enekini na kēlā me kēia kanaka
- d. Ho‘ēmi i ke puhi ‘ia ‘ana o nā mea kalepona e nā mea kau ‘enekini na kēlā me kēia kanaka

Pahu hopu 6. Lawelawe ‘ia ke Kalana ‘o Kaua‘i e kekahi hana mea kau nāna e ho‘ohana pono i ka ‘aila a i emi mai kona kauka‘i ma luna o ka ‘aila kakalina i hali ‘ia mai.

Nā Makemake:

- a. Ho‘ēmi i ka ho‘ohana ‘ia ‘ana o nā ‘aila like ‘ole e nā ka‘a ‘enekini na kēlā me kēia kanaka
- b. Ho‘ēmi i ka ho‘ohana ‘ia ‘ana o ka ‘aila no ka loa‘a like a me ka holoholo ‘ana na kēlā me kēia kanaka
- c. Paipai i ka hana ‘ia ‘ana o nā ‘ano mea like ‘ole e ho‘oholo ai i nā mea kau ‘enekini
- d. Ho‘ēmi i ka lilo no nā ‘ano mea like ‘ole e ho‘oholo ai i nā mea kau ‘enekini
- e. Paipai a kōkua i nā koho pili i nā mea kau ma waho a‘e o nā ka‘a no nā malihini huaka‘i a me nā malihini māka‘ika‘i

Pahu hopu 7. E mālama mau ‘ia ka pono o ke kūlana o ka hana mea kau o ke Kalana ‘o Kaua‘i.

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Nā Makemake:

- a. Mālama a ho‘oponopono mau i nā kahua mea kau me ka ho‘oponopono mau pū i ke kūlana waiwai
- b. Mālama a ho‘oponopono mau i nā kahua alanui me ka ho‘oponopono mau pū i ke kūlana waiwai
- c. Mālama a ho‘oponopono mau i nā kahua po‘e hele wāwae me ka ho‘oponopono mau pū i ke kūlana waiwai
- d. Mālama a ho‘oponopono mau i nā kahua paikikala me ka ho‘oponopono mau pū i ke kūlana waiwai

Pahu hopu 8. Lawelawe ‘ia ke Kalana ‘o Kaua‘i e kekahi hana mea kau nāna e pale a hō‘oi i nā mana‘o o ko Kaua‘i pili i ka nohona kanaka, ke kūlana kua‘āina o ka mokupuni, a me ke kūlana ki‘eki‘e o ka pono o ka nohona.

Nā Makemake:

- a. Pale i nā kumu waiwai a me nā kahua nohona kanaka
- b. Ho‘ēmi i ka pihana hana malihini māka‘ika‘i ma nā kanakai a me nā kahua like ‘ole i nui loa ka ho‘ohana ‘ia
- c. Hō‘oi i nā mana‘o o ko Kaua‘i pili i ka nohona kanaka a me nā hana ku‘una
- d. Ho‘oponopono i nā ala e komo ai i nā wahi like ‘ole ā like me ia i ka wā ma mua a ma hope o ka hiki ‘ana mai o Kāpena Kuke
- e. Pale a hō‘oi i nā mea e pono ai nā nānaina o nā hi‘ona ‘āina

Ua ho‘ohana ‘ia kekahi mo‘olelo i no‘ono‘o wale ‘ia no ke alaka‘i ‘ana i ke kūkulu ‘ia ‘ana o nā polokalamu no ka ho‘okō ‘ia ‘ana o ka MLTP. Ma ka ho‘ohana ‘ana i nā ana like ‘ole no ka holo pono o ka hana, ua kūkulu ‘ia ‘elua mo‘olelo i no‘ono‘o wale ‘ia i hiki ke loa‘a. Ma ka Mo‘olelo Kumu i No‘ono‘o Wale ‘ia, kuhi wale ‘ia ‘a‘ohe ho‘ohuikau ‘ana ma nā hana a kānaka ma ka holo ‘ana e loli ai nā hana e kū nei i kēia manawa e ‘ike ‘ia ai he pi‘i ‘ana he 19 pakeneka ma ka pihana ka‘a ā puni ka mokupuni i ka hiki ‘ana mai o ka 2035. Ma ka Mo‘olelo i No‘ono‘o wale ‘ia a i makemake ‘ia, hō‘ike ‘ia kekahi mau hana e mālama ai i ka pihana ka‘a ā like me ia i ka 2010 ā hiki i ka 2035. ‘O nā hana i hiki ke hana ‘ia, ‘o ia ho‘i ka pi‘i ‘ana o ka pakeneka o ka po‘e hele wāwae, kau paikikala, a kau i nā mea kau, a ‘o ka hopena, ‘o ia ka emi ‘ana o nā mea e kalaiwa ana.

Ho‘ohana ‘ia kēia mau ana hō‘ike i ka pono o ka hana ma ka MLTP:

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- Nā mile i holo ‘ia e ke ka‘a (VMT)
- Ka VMT o kēlā me kēia kanaka
- Ka ‘aila i ho‘olilo ‘ia e ka ‘enekeini kū i ka makahiki
- Ka ‘aila i ho‘olilo ‘ia e ka ‘enekeini na kēlā me kēia kanaka
- Ke puhi ‘ia ‘ana o ke ea ho‘opālulu honua (GHG)
- Ka lakio ho‘oku‘i ka‘a
- Ke ka‘ana like ‘ia ‘ana o ka mea kau
- Ka heluna po‘e kau mea kau
- Ka nui o ka ho‘oikaika kino ‘ana o nā kānaka
- Ka lilo no nā mea kau o kēlā me kēia home kū i ka makahiki

Hō‘ike ‘ia e nā hopena o ka wehewehe ‘ano no ka mo‘olelo i no‘ono‘o wale ‘ia no ka wā e hiki mai ana ‘o ka hopena o ka ho‘okō ‘ia ‘ana o ka Mo‘olelo i No‘ono‘o ‘ia a i Makemake ‘ia, ‘o ia nā hopena nāna e kāko‘o ana i nā pahu hopu he nui o ka MLTP:

- Ho‘ēmi ‘ia ka nui o ka ‘aila i ho‘olilo ‘ia;
- ‘A‘ohe pi‘i ‘ana o ka nui o ka huina ka‘a;
- Ho‘ēmi ‘ia ka lilo no ka mea kau no kēlā me kēia home;
- Pi‘i ka nui o ka ho‘oikaika kino ‘ana; a
- Pi‘i ka nui o ka ho‘ohana ‘ia ‘ana o nā ‘ano holo ‘ana ma waho a‘e o ke kalaiwa ‘ana, e la‘a ka hele wāwae, ke kau paikikala, a me ke kau ‘ana ma luna o nā mea kau.

Na ka MLTP i hō‘ike ‘eono polokalamu no ka ho‘okō ‘ana i kekahi hana o nā ‘ano mea kau like ‘ole no ka mokupuni holo‘oko‘a: he polokalamu mea kau, he polokalamu paikikala, he polokalamu po‘e hele wāwae, he polokalamu alanui kalana, he polokalamu hali mea kanu, a me kekahi polokalamu ho‘ohana ‘āina.

1.3 Ka Mea ‘Oko‘a Nui

‘O ka mea ‘oko‘a nui loa ma waena o ka FAHTP a me ka MLTP, ‘o ia ka hana ‘ia ‘ana o ka Mo‘olelo i No‘ono‘o Wale ‘ia a i Makemake ‘ia ma loko o MLTP i kuhi ‘ia ai kekahi mau mea nāna e ho‘olalau i ka hana e ‘ike ‘ole ‘ia ai kekahi lolii o ka huina ka‘a, a pēlā e emi ai ka pono no nā hanana ho‘oponopono waiwai pipi‘i he nui i hō‘ike ‘ia i loko o ka FAHTP.

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Ua ‘oko‘a nō ho‘i nā kuhi no ka loli o ka heluna kanaka i loko o nā hō‘ike ‘elua. Ma loko o ka FAHTP, ua wānana ‘ia he pi‘i ka heluna kanaka o Kaua‘i he 30 pakeneka a ‘oi i ka hiki ‘ana mai o ka 2035, akā, i loko o MLTP, wānana ‘ia he pi‘i ka heluna kanaka o Kaua‘i he 27 pakeneka i ka hiki ‘ana mai o ka 2035.

Māhele 2. Hō‘ike Laulā no ka Hana Mea Kau e Kū nei

2.1 Ho‘ākāka

Ho‘ākāka ‘ia ma kēia māhele ka hana alanui e kū nei i kēia manawa a me nā makemake i wānana ‘ia i mea kau.

2.2 Ka Hana Mea Kau e Kū nei

‘O ka huina o nā mile o nā alanui aupuni ma Kaua‘i, he 417, a he māhele 107 mile o ia mau alanui o ka hana alanui o ka Moku‘āina. ‘O ke Alaloa Kaumuali‘i (Ala Moku‘āina 50) a me ke Alaloa Kūhiō (Ala Moku‘āina 56 a me ke Alanui Moku‘āina 560) nā alanui nui ā puni ke ka‘e o ka mokupuni. Nā kēia mau alaloa ‘elua e ho‘opili i nā kaona a me nā kaiāulu, a penei nō ho‘i e komo ai i nā wahi kūloko like ‘ole ma o nā manamana ala li‘ili‘i mai me nā alanui e hui pū ana me nā alanui hou a‘e.

He 33 mile ka loa o ke Alaloa Kaumuali‘i ma ke komohana o Līhu‘e. ‘O ke alaloa nui e holo ai i ka ‘ao‘ao komohana, a ‘o ia ka ho‘omaka ‘ana o ke ala ho‘okahi wale nō ma waena o Līhu‘e a me ‘Ōma‘o. Ho‘ākāka ‘ia kona ‘ano he ala emi mai kona nui mai ‘Ōma‘o a hala ma loko o Hanapēpē a me Waimea, a pau ma kahi o Nōhili ma ke komohana. A ma uka a ma kai o ke Alaloa Kaumuali‘i e komo ai i nā wahi kūloko he mau alanui e hui ai me ke alaloa, e like me Alanui Waimea Canyon, Alanui Halewili, Alanui Maluhia, Alanui ‘Ōma‘o, Alanui Po‘ipū, a me Alanui Kinoiki.

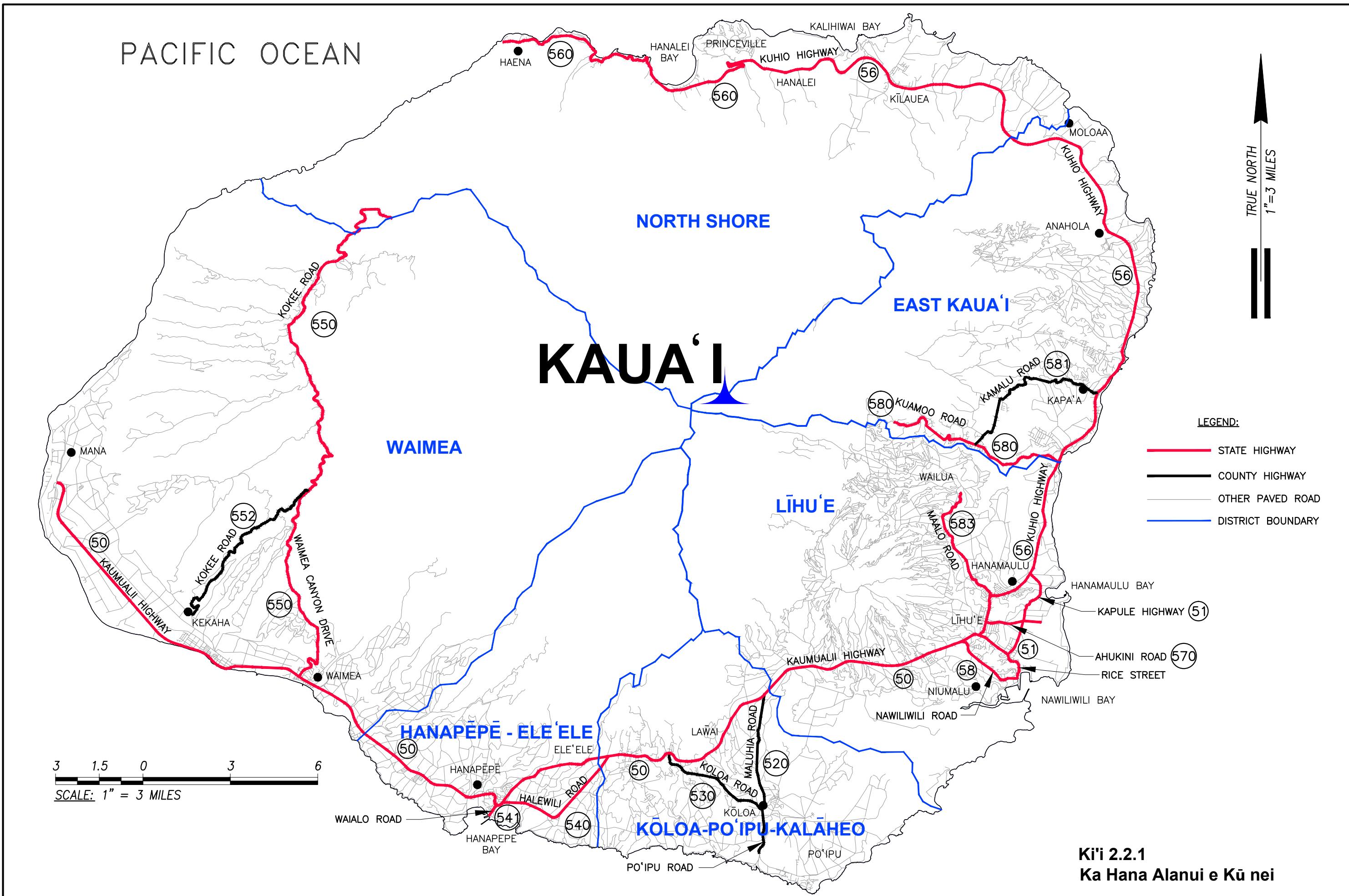
He 38 mile ka loa o Alaloa Kūhiō ma ka ‘ākau o Līhu‘e, a ‘o ia ho‘okahi wale nō ke ala ma waena o ke kapa kai ‘ākau a me Līhu‘e. Ho‘omaka ia alaloa ‘o ia ke ala ho‘okahi wale nō mai Līhu‘e ā hiki i Kapa‘a a me Wailua, a ho‘omau nō ma ke ‘ano he ala emi mai kona nui ma ke ka‘e hikina ‘ākau o ka mokupuni ma loko o Anahola a me Princeville. Ho‘ākāka ‘ia kona ‘ano he alanui e hui ai me ke alaloa mai Hanalei ā ke komohana aku o Hā‘ena.

Ma Līhu‘e, ho‘ākāka ‘ia ke ‘ano o Alanui Ahukini (Ala Moku‘āina 570), Alaloa Kapule / Alanui Rice (Ala Moku‘āina 51), Ala Nāwiliwili (Ala Moku‘āina 58) he mau manamana alanui nui a pēlā e holoholo ai nā kānaka ma waena o nā hui, nā hale kū‘ai, ke kahua mokulele, a me ke awa kū moku.

Ua nānā ka Hana Kōkua Pekelala i loko o ka Papa Hana Mea Kau Nā Alaloa Kōkua Pekelala 2035 (FAHTP) i nā alanui ma lalo o ke kuleana o ka Moku‘āina a me ke Kalana ‘o Kaua‘i i

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ho‘ākāka ‘ia kona ‘ano he alanui hui a he alanui manamana. Hō‘ike ‘ia ka hana alanui o ka mokupuni e kū nei ma ke Ki‘i 2.2.1, a hō‘ike ‘ia nā alanui Moku‘āina a me ke Kalana, nā alanui māka‘ika‘i hi‘ona ‘āina, a me nā alanui i kīpapa a kīpapa ‘ole ‘ia ho‘i.



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2.3 Ka Makemake i Mea Kau

Ho‘ohui ‘ia ma lalo o ka makemake i mea kau kēia mau ‘ano like ‘ole o ka mea kau: nā ‘ano ka‘a like ‘ole, nā ka‘a hali ukana, nā mea kau, ka paikikala, ka po‘e hele wāwae, a me nā ka‘a lawelawe pō‘ino. Ma loko o kēia māhele, ho‘ohālikelike ‘ia nā makemake o kēia manawa e holoholo nā kānaka a me ka mea i wānana ‘ia no kēia mua aku e like me ia i ho‘oholo ‘ia e ka Papa Hana Mea Kau Nā Alaloa Kōkua Pekelala 2035 (FAHTP) a me ka Papa Hana Mea Kau ‘Āina o nā ‘Ano Like ‘Ole o Kaua‘i (MLTP) a me nā makemake e loli ana no nā ‘ano mea kau like ‘ole i loa‘a.

2.3.1 Ka Huina Ka‘a

Aia ma loko o ka FAHTP kekahi māhele no nā huina ka‘a e kū nei a me ka mea i wānana ‘ia ma ke ‘ano he lakio huina i ho‘ohālike ‘ia me ka nui i hiki (V/C) a me ke kūlana lawelawe (LOS). He ho‘ohālike ‘ana ka lakio V/C no ka huina ka‘a me ka nui i hiki ke loa‘a ma kekahi alanui. Hō‘ike ka LOS i ke kūlana o ka holo pono o ka hana ma ke ‘ano he 6 māhele kaha-hua palapala. Ho‘ākāka ‘ia kēlā me kēia Kūlana Lawelawe ma ka Papa 2.3.1. ‘O ka mana‘o o ka lakio V/C he 1.0, ‘o ia ho‘i, ua like ka huina ka‘a me ka nui i hiki ma ia alanui, a ‘o kona kaha-hua palapala, he F.

Papa 2.3.1 Ka Ho‘ākāka ‘ana no ke Kūlana Lawelawe

Kūlana Lawelawe (LOS)	Ka Holo Pono o ka Hana
A	Holo maika‘i; ‘a‘ohe ālailai ‘ia o ka holo o ka hapa nui o nā ka‘a a emi ka nui o ke kali ‘ana
B	‘Ano maika‘i nō ka holo; li‘ili‘i ke ālailai ‘ia o ka holo o nā ka‘a
C	Holo mau; ‘ike akāka ‘ia ke ālailai ‘ia o ka holo o nā ka‘a
D	Ke hele nei ā pupū ka holo; ‘ano pupū ka holo o nā ka‘a
E	Pupū ka holo; ho‘okū ‘ia ka holo o nā ka‘a ma muli o ka pili loa ma waena o nā ka‘a
F	Pau ka holo; kū ka holo o nā ka‘a a lō‘ihī ke kali ‘ana a i ‘ole piha pū nā ka‘a

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‘Oiai ‘o Līhu‘e ke kikowaena o ka mokupuni, ‘o kahi o ka pi‘i loa o ka ‘awelika o ka huina ka‘a, aia ma kahi o ua kaona nei. He hali ke Alaloa Kaumuali‘i 36,000 mau ka‘a i ka lā ho‘okahi he hali ke Alaloa Kūhiō 36,000 mau ka‘a i ka lā ho‘okahi (nā huina o ka 2013). ‘O ka lakio V/C ma lalo o ua mau ala holo ‘elua, he 1.0 a ‘oi paha a ‘o ka holo ma ka LOS, he F. E nānā i ke Ki‘i 2.3.1 i ki‘i o ka pono o ka holo e like me ia e kū nei ma ka mokupuni ma ka ho‘ohālike ‘ana me ka lakio V/C. E like me ia i hō‘ike ‘ia ma ke Ki‘i 2.3.1, he F ka LOS o Alaloa Kaumuali‘i mai Ala Rice ā hiki i Ala Maluhia a ma loko nō ho‘i o Kalāheo. He E ka LOS o kekahi mau māhele o ke Alaloa Kaumuali‘i ma kahi kokoke i ‘Ōma‘o a me ‘Ele‘ele. He F ka LOS ka hapa nui o Alaloa Kūhiō mai Hanamā‘ulu ā hiki i Kapa‘a.

Ma loko o ka MLTP, ua pi‘i ka nui o nā miliona o nā mile i holo ‘ia e nā ka‘a (VMT) mai ka 645.4 ā ka 818.3 mai ka 2000 ā ka 2007, akā, ua emi mai i ka 771.5 i ka 2010. Akā na‘e, ma loko o ka puke, ‘o 2013 Hawaii Data Book, i ho‘omākaukau ‘ia e ka ‘Oihana Hui o Hawai‘i o ka ‘Oihana Ho‘omohala Ho‘okele Waiwai me ka Huaka‘i Māka‘ika‘i, ua pi‘i ka VMT ā ka 948.7 i ka 2013. Ua ‘ano like pū nō ka nui o ke kalaiwa na kēlā me kēia kanaka (VMT na kēlā me kēia kanaka), he pi‘i ka VMT na kēlā me kēia kanaka mai ka 8,582 ā ka 10,605 i ka 2013. Ho‘ohana ‘ia ka heluna kanaka i kuhi wale ‘ia i loko o ka VMT, ‘o ia ka heluna kanaka he ‘awelika i loa‘a ma kekahi lā i pono koho ‘ia, hui pū ‘ia me nā malihini a ho‘okoe ‘ia nā kānaka noho aia ma kahi ‘ē i kekahi māhele o ka manawa.

Ma loko o ka FAHTP, hō‘ike ‘ia he pi‘i ka huina ka‘a he 30 pakeneka a ‘oi i ka hiki ‘ana mai o ka 2035 ma ke Alaloa Kaumuali‘i ma waena o Līhu‘e a me Kalāheo, a pēia pū ma ke Alaloa Kūhiō ma waena o Līhu‘e me Kapa‘a me ka pi‘i i wānana ‘ia no ka heluna kanaka a me nā hana, a me ka pi‘i i kuhi ‘ia ma ka ho‘ohana ‘āina ‘ana a me ke kūkulu ‘ana.

E nānā i ke Ki‘i 2.3.2 i ki‘i o ka holo pono o ka hana i wānana ‘ia i ka makahiki 2035 ma ka mokupuni ke ho‘ohālike ‘ia me ka lakio V/C. E like me ia i hō‘ike ‘ia ma ke Ki‘i 2.3.2, emi ka pono o ka holo o ka hana ma ke Alaloa Kaumuali‘i ma ‘Ōma‘o ā ka LOS he D a me ka LOS he F, a me ka LOS he F ma ‘Ele‘ele. Emi ka pono o ka holo o ka hana ma ke Alaloa Kapule mai ka LOS he D ā ka LOS he F. Emi ka pono o ka holo o ka hana ma ke Alaloa Kūhiō mai ka LOS he D ā ka LOS he F ma Hanamā‘ulu. Ma muli o kēia mau wānana no ke kūlana pono o ka holo o ka hana, he pi‘i ka nui o ka manawa ma ka holo ‘ana a me ka hiki ke ‘ike ‘ia ke kali ‘ana ma kēia mau māhele o ke Alaloa Kaumuali‘i a me ke Alaloa Kapule.

E ho‘omaopopo ‘ia ‘o ke kūlana o ka pono o ka holo o ka hana i wānana ‘ia i hō‘ike ‘ia ma ka FAHTP, ua ho‘okumu ‘ia ma luna o nā wānana a me nā kuhi like ‘ole ma waho a‘e o ka MLTP.

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Wehewehe ‘Ano no nā Pono Kūlanakauhale o Kaua‘i
Hana Mea Kau



Papa Hana Laulā i Hō‘ano Hou ‘ia
Wehewehe ‘Ano no nā Pono Kūlanakauhale o Kaua‘i
Hana Mea Kau



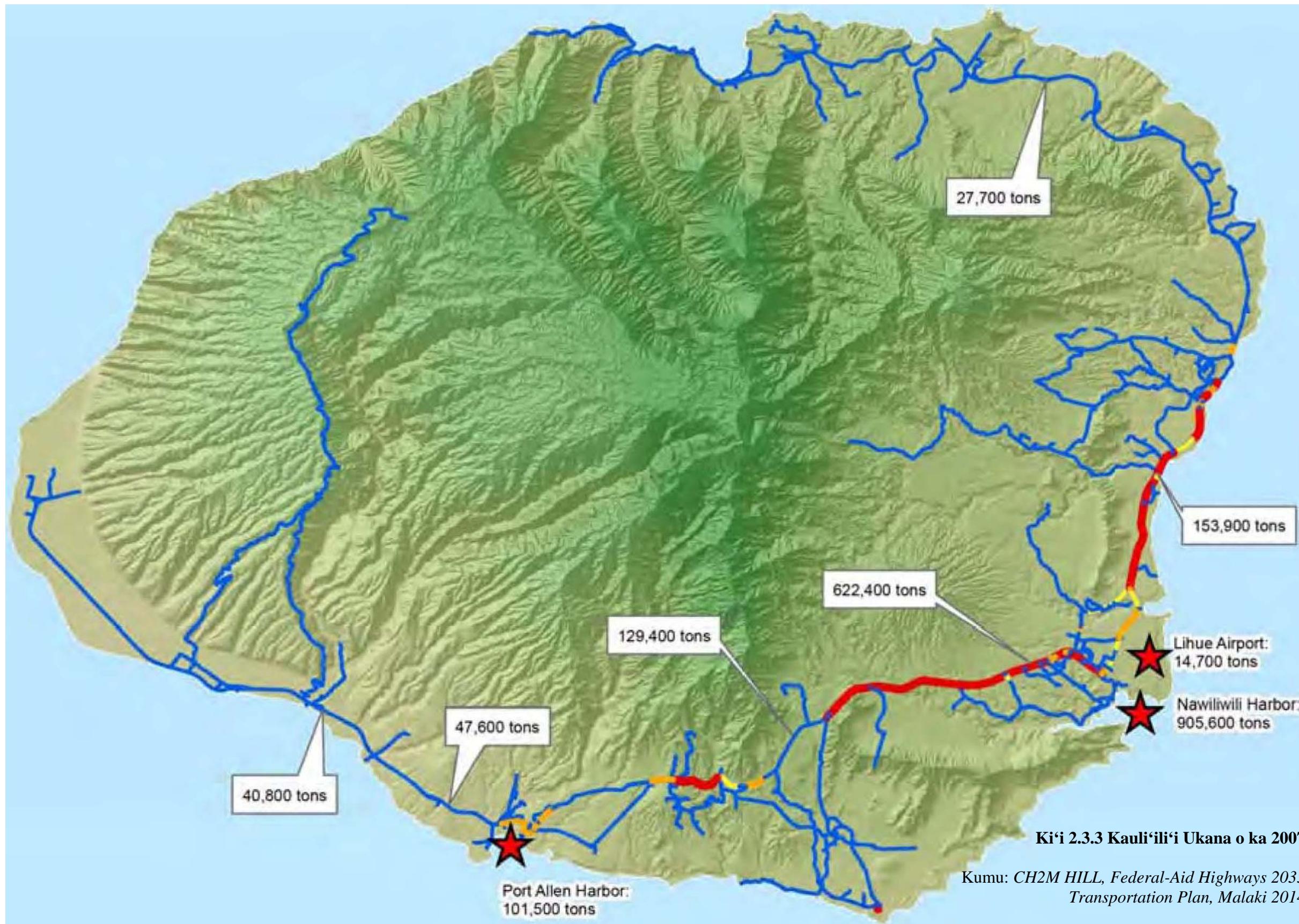
Papa Hana Laulā i Hō‘ano Hou ‘ia
Wehewehe ‘Ano no nā Pono Kūlanakauhale o Kaua‘i
Hana Mea Kau

2.3.2 Ka Hana Ka‘a Hali Ukana

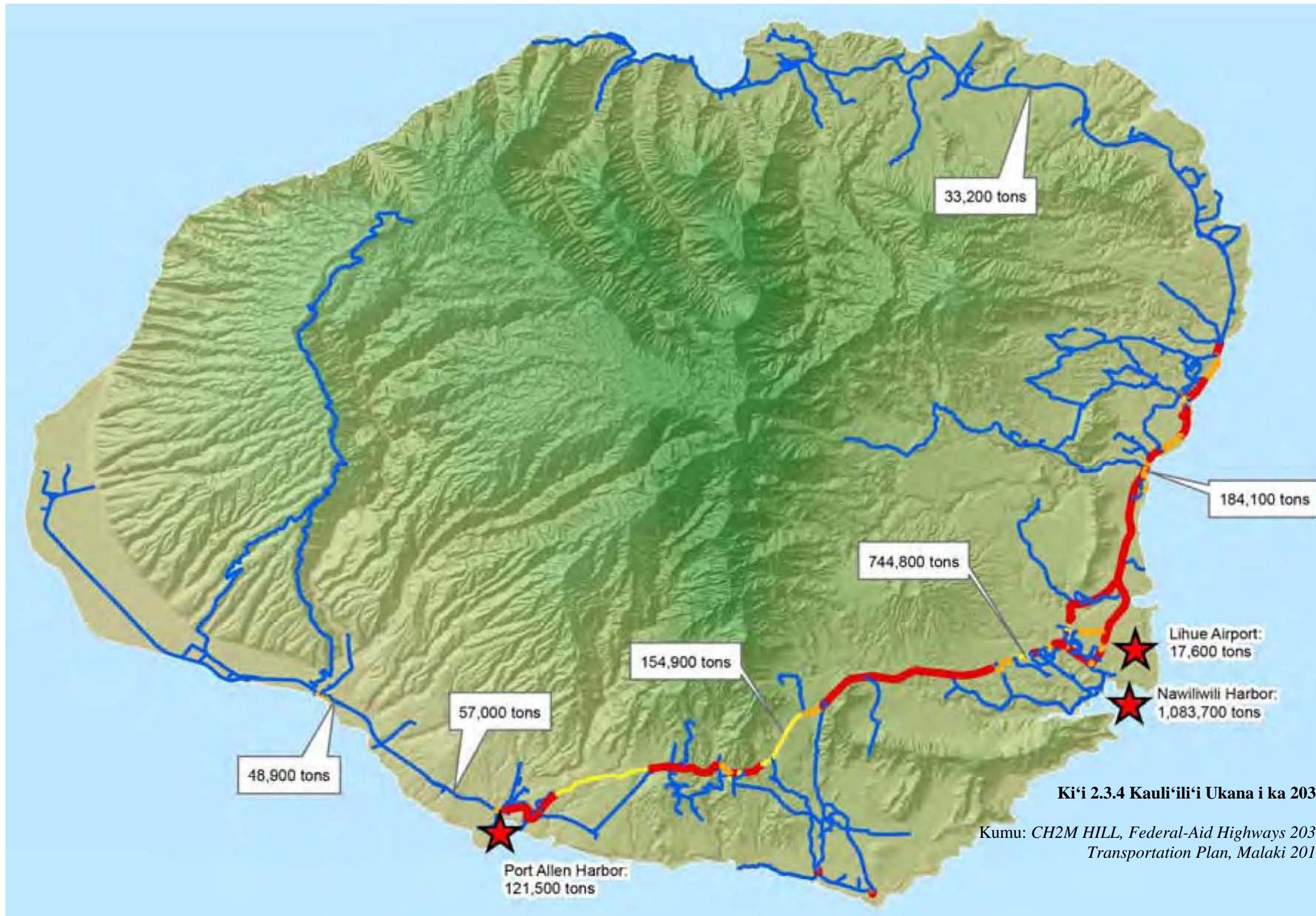
Aia ka nui o nā hana hali ukana ma ke Kahua Mokulele o Līhu‘e, Ke Awa Kū Moku o Nāwiliwili, a me ke Awa Kū Moku o Port Allen. Aia ma ke Awa Kū Moku o Nāwiliwili ma kahi o 90 pakeneka o ka huina ukana (he 900,000 kana a ‘oi) i hali ‘ia mai i Kaua‘i nei a i ‘ole ho‘ouna ‘ia aku mai ‘ane‘i aku. Kaupalena ‘ia ke ‘ano o ka ukana i hali ‘ia mai i ke Awa Kū Moku o Port Allen he ‘aila wale nō. Ua pono ma kahi o 60,000 mau ka‘a hali ukana no ka halihali ‘ana i ka ukana ā puni ka mokupuni.

Ma loko o ka FAHTP, me ka pi‘i pū nō o ka ho‘okele waiwai ‘ana i mahu‘i ‘ia, mahu‘i pū ‘ia ka pi‘i o ka huina kana ukana ma kahi o 20 pakeneka i ka hiki ‘ana o ka 2035, a ‘o ka hopena he 1 miliona kana a ‘oi o ka ukana i ho‘opā ‘ia ma ke Awa Kū Moku o Nāwiliwili i kēlā me kēia makahiki. ‘O ka mana‘o nui o kēia, he 12,000 mau ka‘a hali ukana hou aku ma nā alanui o Kaua‘i. E like me ia i ho‘ākāka ‘ia ma ka Māhele 2.3.1, wānana ‘ia he pi‘i ka huina ka‘a ma ke Alaloa Kaumuali‘i, ke Alaloa Kūhiō, a me ke Alaloa Kapule. E ‘ike ‘ia kekahī hopena ma ka ho‘okele waiwai ma muli o nā kali ‘ana o nā ka‘a hali ukana ma ka holo ‘ana ma ke alanui inā ‘a‘ole hiki ke holo pono nā ka‘a ma nā alanui me ka pi‘i pū o nā makemake.

Hō‘ike ‘ia ma nā Ki‘i 2.3.3 a me ka 2.3.4 ka holo ‘ana o nā ka‘a hali ukana e kū nei a me ka mea i wānana ‘ia ma nā alanui o ka mokupuni.



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Wehewehe ‘Ano no nā Pono Kūlanakauhale o Kaua‘i
Hana Mea Kau

2.3.3 Ka Hana Mea Kau Lehulehu

‘O ka hana mea kau lehulehu, ‘o The Kaua`i Bus, he lawelawe ala pa‘a mau, he mau ala lawelawe wikiwiki, he mau lawelawe ‘ōhua ma‘i, a me kekahi mau kahua waiho ka‘a a me nā kū ‘ana. He lawelawe ala pa‘a nui nō ma waena o nā kaona. ‘Oiai ‘o Līhu‘e ke kikowaena o ka hana mea kau, hele ka lawelawe ā hiki i Hanalei ma ke Alaloa Kūhiō, a hele ā hiki i Kekaha ma ke Alaloa Kaumuali‘i. Hō‘ike ‘ia nā ala mea kau e kū nei ma ke Ki‘i 2.3.5. Holo ka lawelawe ka‘a lawe ‘ōhua pōkole ma nā ala pa‘a mau ma loko a i ‘ole ma waena o nā kaona i kokoke. I kēia manawa, loa‘a 55 mau ka‘a i loko o ka huina ka‘a, a ho‘oholo ‘ia e nā limahana o ke Kalana. ‘O nā ‘ano ka‘a i loa‘a, he ka‘a 14 ona ‘ōhua ā hiki i nā ka‘a ‘ōhua nui he 16 ‘ōhua ka nui ā hiki i ke 33.

Ma loko o ka MLTP, ua nui ka pi‘i o ka nui o ka po‘e kau o nā lā noa ma luna o ka lawelawe ka‘a ‘ōhua ala pa‘a mau mai ke 903 i ka 2007 ā ka 2,671 ā hiki i ka 2,671 i ka 2012, me ka pi‘i iki pū nō o ka lawelawe ‘ōhua ma‘i mai ka 172 i ka 2007 ā ka 193 i ka 2012.

Ua mahu‘i ‘ia he pi‘i mai koe ka nui o ka po‘e kau ma luna o ka lawelawe ‘ōhua ma‘i. I mea e holo pono ai ka hana me ka pi‘i pū nō o ka makemake, pono nō e pi‘i ka pono o ka ho‘oholo ‘ia ‘ana o kēia lawelawe, a pono pū e pi‘i ka nui o nā ka‘a. ‘Oiai he ka‘ana like nā ka‘a mea kau lehulehu i nā alanui ho‘okahi me nā ka‘a hali ukana a me nā ka‘a o ka lehulehu pū, pono e ‘ae ‘ia nā ka‘a nui hou a‘e ma nā hana alanui i ka pi‘i ‘ana o ka makemake i mea e pono ai ka holo o ka hana mea kau.

2.3.4 Ka Hana Paikikala

Aia ma kahi o 23 mau mile ka nui o nā pono paikikala ma Kaua‘i, he ‘ekolu mau ‘ano: nā ala holo paikikala a i ‘ole nā ala i ka‘ana like ‘ia, nā ala, a me nā alanui i ka‘ana like ‘ia.

Ho‘ākāka ‘ia nā makemake o ka wā e hiki mai ana ma loko o ka Papa Hana Nui o ka Moku‘āina ‘o Hawai‘i: Papa Hana Paikikala o Hawai‘i no nā ala a me nā pono i ka‘ana like ‘ia ma ka hapa nui o nā alaloa nui a me nā alanui manamana ā puni ka mokupuni. Ua mana‘o ‘ia he ‘ae ‘ia ka paikikala a me nā ka‘a ‘enekini pū nō ma nā ala like ‘ole i ka wā ho‘okahi. Hō‘ike ‘ia ka hana paikikala e kū nei a me ka mea i ho‘olālā ‘ia ma ke Ki‘i 2.3.6.

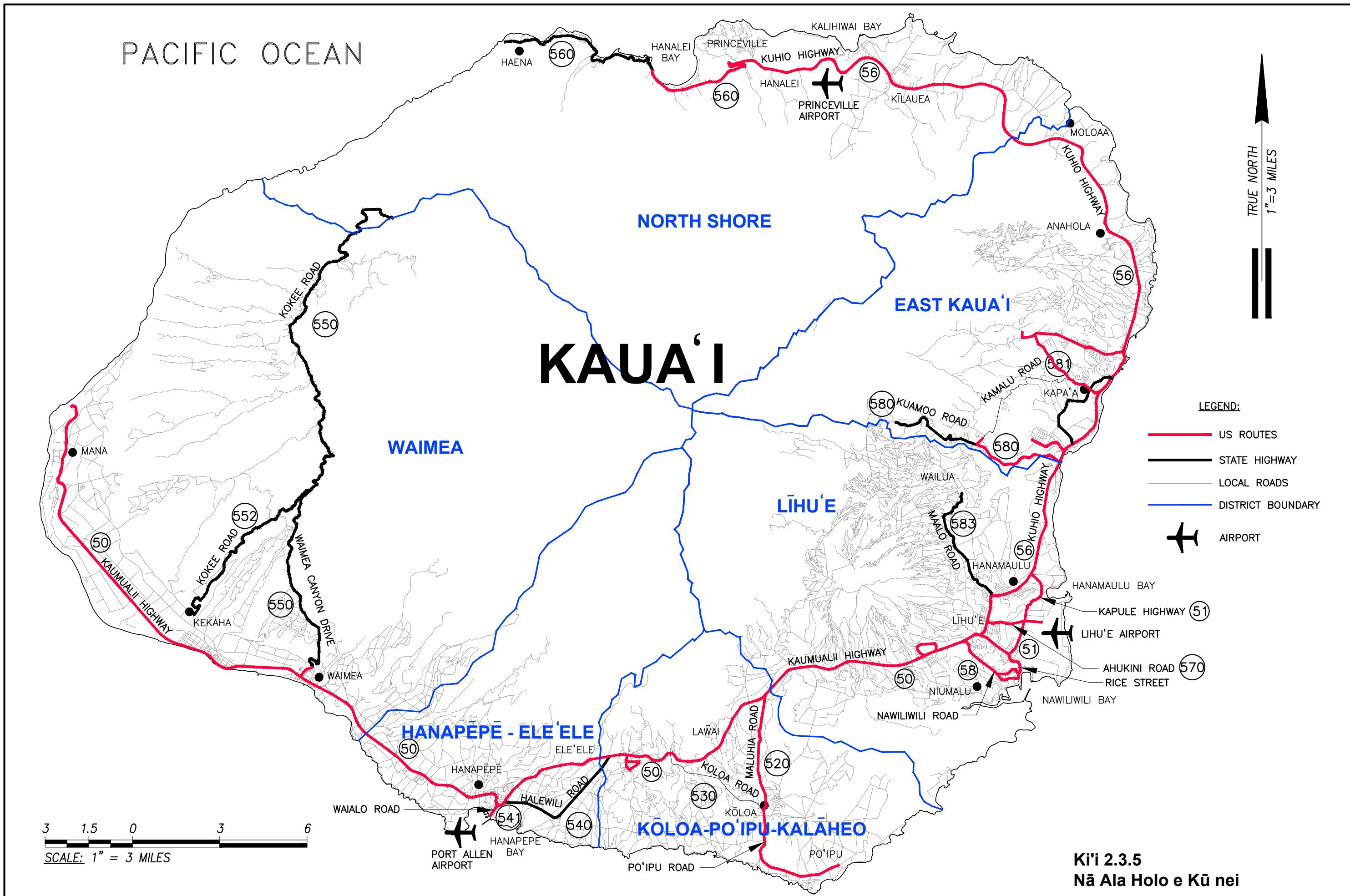
2.3.5 Ka Hana Po‘e Hele Wāwae

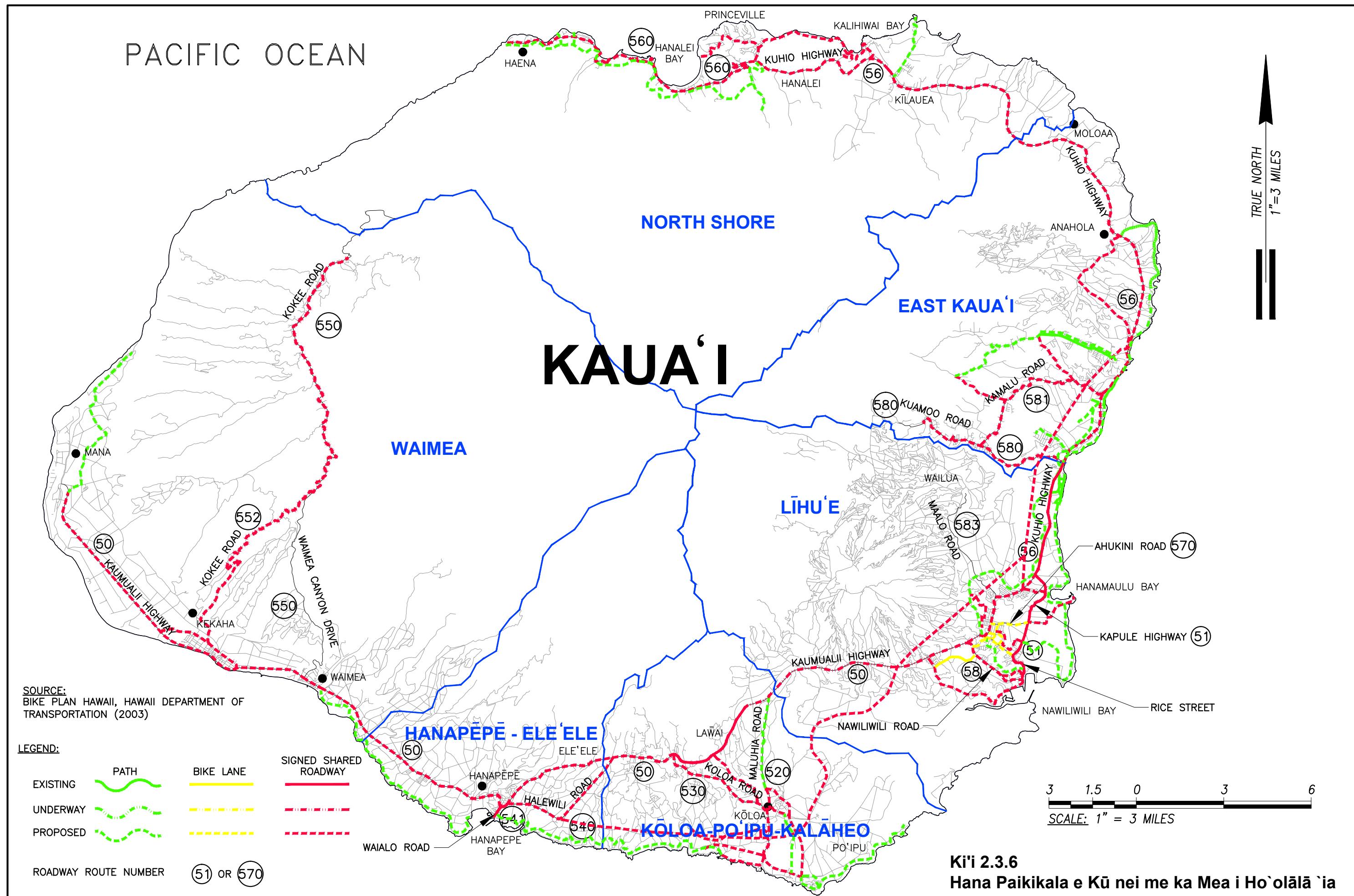
Aia loko o nā pono no ka po‘e hele wāwae nā ala hele wāwae o ka‘e alanui, nā ala ‘a‘e alanui, a me nā ala hele. Aia i loko o ka Papa Hana Po‘e Hele Wāwae Nui o ka Moku‘āina kekahi ‘ike no nā pono e kū nei no ka po‘e hele wāwae, a hō‘ike pū ‘ia kekahi mau ‘ao‘ao hemahema kekahi no kēia mua aku ma ka hana alaloa o ka Moku‘āina. ‘O kekahi mau hemahema i hō‘ike ‘ia, ‘o ia nā ‘oā ma nā ala hele o ka‘e alanui, nā ka‘e hāiki loa, a me ka nele o nā ala ‘a‘e alanui ma nā alanui

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i mana‘o ‘ia ai he ka‘ana like ‘ia me ka po‘e hele wāwae. M ake Ki‘i 2.3.7, hō‘ike ‘ia ka Hana Po‘e Hele Wāwae o ka Moku‘āina.

Ma loko o ka MLTP, ua hō‘ike ‘ia nā wahi he nui ‘a‘ohe ala hele ka‘e alanui. ‘A‘ohe ala hele ka‘e alanui ma ka hapa nui o nā alanui Kalana ma waho o nā kikowaena kaona. ‘O kekahi mea nō, ua nele nā ka‘e nui kūpono ma nā alanui he nui no ka po‘e hele wāwae ma muli o nā ālailai a i ‘ole no ka hāiki loa. ‘O ka hopena o nā wahi hele wāwae me ka palekana, ‘o ia ke koho ‘ana o ka po‘e noho a me ka po‘e malihini e kalaiwa a ‘a‘ole e hele wāwae, a pēlā e pi‘i ai ka nui o nā ka‘a ma ke alanui.





PACIFIC OCEAN

KAUA'II

WAIMEA

LÍHÚ[®]

This map illustrates the road network and geographical features of Kauai, Hawaii. The Pacific Ocean is to the west. Key areas labeled include:

- NORTH SHORE:** Haena, Hanalei Bay, Princeville, Hanalei, Kīlauea, Moloaa.
- EAST KAUAI:** Anahola, Kapa'a, Wailua, Hanamaulu, Kapule, Ahukini Road, Rice Street, Nawiliwili Bay.
- WAIMEA:** Mana, Ke'eha, Waimea, Waimea Canyon Drive, Kokee Road, Kauai'ului Highway.
- HANAPEPE - ELE ELE:** Hanapepe, Halewili, Ele'ele, Wailao Road, Hanaapepe Bay.
- KOLOA-PO'IPU-KALĀHEO:** Koloa, Po'ipu, Kalāheo, Maluhia Road, Koloa Road, Halewili Road, Waialo Road.

Roads are color-coded: red for state highways (e.g., 560, 56, 550, 552, 580, 581, 583, 51, 58), blue for county roads (e.g., 54, 540, 520, 530), and yellow for local roads (e.g., Kuamoo Road, Malo Road). A scale bar indicates 0 to 6 miles.

SOURCE: STATEWIDE PEDESTRIAN MAP
HAWAII DEPARTMENT OF TRANSPORTATION

Ki'i 2.3.7
Hana Po'e Hele Wāwae o kauai

SOURCE:
STATEWIDE PEDESTRIAN MASTER PLAN,
HAWAII DEPARTMENT OF TRANSPORTATION (2013)

Ki'i 2.3.7 Hana Po`e Hele Wāwae o ka Moku`āina e Kū nei

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2.3.6 Ka Hana Lawelawe Pō‘ino

Ma muli o nā hi‘ona ‘āina a me ka ho‘onohonoho ‘ia ‘ana o nā alanui e kū nei ma Kaua‘i, he ho‘opuni ke ‘ano o ka waiho ‘ana o ka hana alanui ma ka‘e ma ke Alaloa Kūhiō a me ke Alaloa Kaumuali‘i. He ho‘opupū ‘ia ka lawelawe ‘ia ‘ana o nā pō‘ino ma muli o ka pihana ka‘a a he pilikia ka hopena ka po‘e noho a me nā ka‘a lawelawe pō‘ino e ho‘ā‘o ana e hō‘ea aku i nā kahua ho‘oponopono pō‘ino nui.

Pono e mālama a ho‘oponopono mau ‘ia nā alanui a me nā uapo i mea e kūpono ai no ka lawelawe ‘ana i nā pō‘ino. Pono e ho‘oponopono ‘ia ka pihana ka‘a o kēia mua aku i mea e pono ai nā lawelawe pō‘ino. Ke ho‘olālā ‘ia mai nei kekahi ala hō‘alo ma Līhu‘e a he hiki ke ho‘ohana ‘ia ke Ana Puka ‘o Wilson (‘ona ‘ia e Grove Farm) i ala hō‘alo ma waena o Līhu‘e a me Kōloa. Ua no‘ono‘o ‘ia kekahi ala hō‘alo no Kōloa ma mua, akā, ua ho‘opau ‘ia ia mana‘o.

Māhele 3. Nā Hā‘ina i Hāpai ‘ia

3.1 Ho‘ākāka

Hō‘ike ‘ie nā ha‘ina i hāpai ‘ia mai ka FAHTP a me ka MLTP i loko o kēia māhele. Hō‘ike ka FAHTP i nā hanana ho‘onui, me kekahi papa helu pū i ho‘oka‘ina ‘ia o nā hanana ho‘onui. E like me ia i ho‘ākāka ‘ia ma ka Māhele 1, hō‘ike nui ka MLTP i kekahi Mo‘olelo i No‘ono‘o Wale ‘ia a i Makemake ‘ia i ho‘ēmi ‘ia ai ka pono i hanana ho‘onui ma ka ho‘okumu ‘ana i nā hana a kānaka i hō‘ike ‘ia e mālama ai i ke kūlana pihana ka‘a e like me ia i ka 2010 ā hiki i ka 2035.

3.2 Ka Papa Hana Mea Kau Nā Alaloa Kōkua Pekelala 2035 (FAHTP)

Ua kūkulu ke kime hanana FAHTP hui pū ‘ia me kekahi po‘e hou aku nona kekahi kuleana i nā nīnau pili i ka mea kau a me nā mea e pono ai ma Kaua‘i mai ka ‘ao‘ao mai o nā wahi nui o ka ‘āina. Ma hope o ka nānā a me ka ho‘oka‘ina ‘ia ‘ana o nā ha‘ina i hāpai ‘ia, ‘o nā hanana i ki‘eki‘e ma ke ka‘ina, ‘o ia nā hanana e nānā nui ana i nā pahu hopu o kēlā me kēia wahi nui e mālama ai i ka holo pono o ka hana, ka palekana, a me ka ho‘onui hou ‘ana i ka holo pono a me ka nui i hiki. ‘O kekahi mau ‘ano hanana hou a‘e e pili ana i nā ‘ano alanui o nā ‘ano mea kau like ‘ole a pa‘a pono paha, ka ho‘oponopono ‘ana i ka pa‘a pono a me ka palekana a me ka ho‘oponopono ‘ana i nā hopena no ka loli o ke aniau, ua ho‘ohui pū ‘ia nō ho‘i i loko o kēia papa hana. Hiki ke ho‘ohana ‘ia ka papa helu o nā ha‘ina i hāpai ‘ia e nā luna nāna e ho‘oholo i nā mana‘o no ka māhelehele ‘ana i ke kālā no kēia mua aku a alaka‘i pū i ka mana‘o no kēia mua aku i ka wā lō‘ihī no nā mea kau ma luna o ka mokupuni. Kuhi ‘ia ka ho‘okō ‘ia ‘ana, me ka nānā ‘ole ho‘i i nā kaupalena ‘ana o ka ho‘okele waiwai ‘ana, he \$3.2 piliona ka lilo o ke kālā e kū nei i kēia wā. Hō‘ike ‘ia ma ka Papa 3.2.1 ka māhelehele ‘ia ‘ana o ka lilo ma ke ‘ano o ka hanana. ‘A‘ole i kaupalena ‘ia ka papa helu o nā ha‘ina i hāpai ‘ia ma muli o ka ho‘okele waiwai, ‘o ia ho‘i, paipai ‘ia nā ha‘ina i hāpai ‘ia ma muli o ka pono a me ka mea e hiki ai ke ho‘okō aku

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i nā pahu hopu o ka Papa Hana, a ‘a‘ole ma muli o ka ho‘okele waiwai. Paipai nui ‘ia ka ho‘oka‘ina ‘ia ‘ana o nā hanana ma muli o ka mea e hiki ai ke ho‘olako i ke kālā.

Papa 3.2.1 Nā Ha‘ina o ka Wā Lō‘ihī i Hāpai ‘ia a me nā Kuhi no ka Lilo a ka FAHTP

Polokalamu Ho‘olako Kālā	Nā Kuhi Lilo o ka Papa Hana	Pakeneka
Mālama Hana	\$ 315 M	10 %
Palekana	\$ 595 M	19 %
Nui (‘a‘ohe kaupalena)	\$ 2.2 B	70 %
Holo Pupū	\$ 57 M	1 %
Mea ‘Oko‘a	\$ 10 M	< 1 %
HUINA	\$ 3.2 B	100 %

Kumu: CH2M HILL, Federal-Aid Highways 2035 Transportation Plan, Malaki 2014

3.2.1 Nā Hanana Ho‘onui

Hō‘ike ‘ia kekahi papa helu pōkole o nā ha‘ina no ka wā lō‘ihī i hāpai ‘ia no ka nui ma ka Papa 3.2.2. Hō‘ike ‘ia kēia mau hanana ma nā wahi like ‘ole ma muli o ka nui o ka hanana a kuhi ‘ia ka lilo o nā hanana 17 ma ka papa helu he \$1.5 piliona ma ke kālā o kēia wā. Hō‘ike ‘ia nā wahi kahi o nā hanana ma ke Ki‘i 3.2.1 (e nānā i ka hō‘ailona hua palapala ma ka Papa 3.2.2).

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Papa 3.2.2 Nā Ha‘ina no ka Wā Lō‘ihī i Hāpai ‘ia no ka Nui (waewae ‘ia ma ka helu o ke Ala Moku‘āina)

Hua Ki‘i	Helu Ala	Moku-‘āina/ Kalana	Hanana	Ho‘ākāka	Lilo Kuhi MH 2011 (\$M)
A	50	Moku-‘āina	Alaloa Kaumuali‘i – Ala ‘Anonui ā Ala Kīpū (Māhele 1B)	Kōkua 2 hou ala i ka holo palekana o nā ka‘a	\$22.3
B	50	Moku-‘āina	Alaloa Kaumuali‘i – Ala Kīpū ā kahi o ke ala ku‘u mokulele o Ha‘ikū (ma ke komohana aku o ka Humane Society, M.P. 3.47, Māhele 1C)	Kōkua 2 hou ala i ka holo palekana o nā ka‘a	\$22.3
C	50	Moku-‘āina	Alaloa Kaumuali‘i – Kahi o ke ala ku‘u mokulele o Ha‘ikū (ma ke komohana aku o ka Humane Society, M.P. 3.47) ā ka uapo o Hulē‘ia (Māhele 2)	Ho‘oponopono ‘ia ke alaloa	\$58.5
D	50	Moku-‘āina	Alaloa Kaumuali‘i – Ka uapo o Hulē‘ia ā ke komohana aku o ke Ala Kāhili Mountain Park (ma kahi o 1000 kapua‘i, Māhele 3)	Ho‘oponopono ‘ia ke alaloa	\$55.8
E	50	Moku-‘āina	Alaloa Kaumuali‘i – Ke Ala Kāhili Mountain Park ā Ala Kōloa	Ho‘oponopono ‘ia ke alaloa	\$71.4
F	50	Moku-‘āina	Ke Alaloa Kaumuali‘i – Ke kaona o Kalāheo ā hiki i Ala Kōloa	Kōkua 2 hou ala i ka holo palekana o nā ka‘a	\$33.5
G	50	Moku-‘āina	Ke Alaloa Kaumuali‘i – Ala Hanapēpē ā Ala ‘Ele‘ele	2 hou ala e holo ai	\$12.9
H	51	Moku-‘āina	Ke Alaloa Kapule	2 hou ala e holo ai me nā ala paikikala a me nā ala hele wāwae	\$98.1
I	56	Moku-‘āina	Alaloa Kūhiō – Alaloa Kapule ā Ala Mailehuna	2 hou ala e holo ai	\$128.0
J	520	Kalana	Ala Po‘ipū – Ala Lāwa‘i ā Ala Kinoiki	Ho‘oponopono i ke ala e kū nei a ho‘ohui pū i nā ala paikikala, nā ala hele wāwae, a ho‘oponopono i nā huina alanui.	\$6.7
K	570	Moku-‘āina	Ahukini Road – Kūhiō Highway to Kapule Highway	Ho‘oponopono i ke ala komo i ke kahua mokulele me ka ho‘onohonoho hou i ke alanui a kūkulu ‘ia nā ipukukui. 2 hou ala e holo ai me nā ala hele wāwae a me nā ala paikikala a i ‘ole he ala huaka‘i paikikala	\$41.7
L	580	Moku-‘āina	Ala Kuamo‘o – Alaloa Kūhiō ā Ala Kamalu	Ho‘oponopono i ke alanui e kū nei a ho‘ohui pū ‘ia nā ala paikikala a me nā ala hele wāwae	\$30.3
M	581	Kalana	Ala Kamalu – Ala Kuamo‘o ā Ala ‘Oloheha	Ho‘oponopono i ke alanui e kū nei a ho‘ohui pū ‘ia nā ala paikikala a me nā ala hele wāwae	\$15.0
N	5860	Kalana	Ala Kawaihau – Alaloa Kūhiō ā Ala Mailehuna	Ho‘oponopono i ke alanui e kū nei a ho‘ohui pū ‘ia nā ala paikikala a me nā ala hele wāwae	\$10.1
O	‘a‘o he	Kalana	Ala Hō‘alo Līhu‘e-Hanamā‘ulu	Kūkulu i kekahi Ala Hō‘alo Līhu‘e – Hanamā‘ulu ma ke alanui o kahi mahi ‘ai e kū nei	\$115.4

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P	‘a‘o he	Moku-‘āina	Ala Kōkua o Kapa‘a – Ke Alaloa Kapule ā ke kahawai o Kapa‘a	Kūkulu i ke Ala Kōkua o Kapa‘a ma waena o ke Alaloa Kapule a me ke kahawai o Kapa‘a	\$600.0
Q	‘a‘o he	Kalana	Ka māhele o ka ‘ākau aku o ke Ala Komo Komohana	Kūkulu 2 hou ala me nā hō‘ailona a ka‘ana like ‘ike mai Ala Kōloa a me ka māhele i pau ke kūkulu ‘ia o ka huina alanui o Ala Kalanikaumaka ā Ala Maluhia a me ka huina alanui o Ala Kinoiki	\$20.0

Kumu: CH2M HILL, Federal-Aid Highways 2035 Transportation Plan, Malaki 2014

PACIFIC OCEAN

A vertical orientation indicator consisting of a long black arrow pointing upwards, labeled "TRUE NORTH" above it. Below the arrow is a horizontal scale bar divided into three equal segments by two tick marks. The label "1"=3 MILES" is positioned to the right of the scale bar.

KAUA'

WAIMEA

LÍHU'

SCALE: 1" = 3 MILES

10

- STATE HIGHWAY
 - COUNTY HIGHWAY
 - OTHER PAVED ROAD
 - DISTRICT BOUNDARY

A POTENTIAL LONG-RANGE
CAPACITY SOLUTIONS
PROJECTS

SOURCE: KAUAI TRANSPORTATION DATA BOOK,
KAUAI MULTIMODAL LAND TRANSPORTATION PLAN,
JANUARY 2012 (WITH EDITS)

NOTE:
SEE TABLE 3.1.2 FOR THE DESCRIPTION OF EACH
POTENTIAL LONG-RANGE CAPACITY SOLUTIONS PROJECTS

Ki'i 3.2.1

Nā Ha`ina Polokalamu Ho`onui i Hiki no ka Wā Lō`ihī

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3.2.2 Ka Ho‘okō ‘ana i ka FAHTP a me ka STIP

He hō‘ike ka FAHTP i nā pahu hopu o nā makahiki 20 a ‘oi o ka wā lō‘ihī o ka ‘Oihana Alaloa o ka Moku‘āina. I loko o ka Papa Hana o kekahi mau makahiki e hiki mai ana (e ho‘omaka auane‘i), e ho‘oka‘ina ‘ia nā ha‘ina e ho‘okō ‘ia i loko o nā makahiki 8-10 e hiki mai ana, me nā kaupalena ‘ana pū kekahi pili i ke kālā. Hiki ke ‘oi aku ka pinepine o ka hō‘ano hou ‘ia ‘ana o kēia papa hana i ka loli ‘ana o nā wānana pili i ka ho‘okele waiwai. I kēlā manawa, na ka Moku‘āina e hō‘ike i kekahi papa hana o nā hanana i hiki ke ho‘okō ‘ia i loko o nā makahiki ‘ehā e hiki mai ana me ke kālā o ka Statewide Transportation Improvement Program (STIP). Kūkulu ‘ia nā hanana STIP ma o ka ho‘olālā ‘ana no ka ‘āina ā puni, ka hana ‘enekinia, ke kaha ki‘i ‘ana, a laila, ke kūkulu ‘ana.

Ho‘olako ‘ia ke kālā no nā hanana mea kau e ka Waihona Kālā Alaloa o ka Moku‘āina ‘o Hawai‘i i ho‘opiha ‘ia e ke aupuni pekelala a me ka moku‘āina. Loa‘a ke kālā pekelala mai ka Highway Trust Fund i ho‘olako ‘ia ai ma o ka ‘auhau kakalina pekelala. Loa‘a ke kālā moku‘āina mai ‘eono mau kumu nui mai: nā ‘auhau kakalina, nā kāki ka‘a hai/holo māka‘ika‘i, nā ‘auhau kaupaona, nā kāki kākau inoa ka‘a, nā kāki like ‘ole, a me ka uku ho‘opane‘e mai nā kālā ho‘opukapuka mai no nā alaloa. Loa‘a i ka ‘Āpana ‘o Kaua‘i ma kahi o 8-10 pakeneka o ka Pu‘u Kālā Alaloa o ka Moku‘āina ‘o Hawai‘i. Ke ho‘ohālike ‘ia me ka māhelehele ‘ia ‘ana mai ka wā ma mua mai, hiki ke mahu‘i ‘ia ka loa‘a mai o kahi o ka \$630 miliona, i ho‘oponopono hou ‘ia no ka pi‘i o nā kumu kū‘ai a i loko o ka Makahiki Ho‘okele Kālā (MHK) o ke kālā o ka 2011 no nā hanana mea kau ma waena o ka MHK11-MHK35. Ho‘opane‘e ‘ia nā hanana ma muli o ka emi o ke kālā ma waena o ka kūlana lako kālā a me nā mea e pono ai i kālā. He no‘ono‘o nō paha ka moku‘āina i nā kumu kālā like ‘ole hou aku, e like me nā kāki mea ho‘ohana, nā ‘auhau mea kū‘ai laulā, a me nā ku‘ikahi lehulehu/hui. He nānā pū nō paha ka Moku‘āina i ka ho‘ēmi ‘ana i nā makemake no ka hana mea kau ma o ka ho‘omalu makemake mea kau.

Inā ‘a‘ole loa‘a ke kālā no nā hanana a pau i koikoi ‘ia, he kōkua ka Mo‘olelo i Kuhi ‘ia a i Makemake ‘ia o ka MLTP i ka ho‘ēmi ‘ana i ke kumu kū‘ai no nā hanana ho‘onui, a pēlā e ‘ae ‘ia ai ka ho‘one‘e ‘ia ‘ana o ke kālā i nā polokalamu ‘ē a‘e, e like me ka mālama ‘ia ‘ana o ka hana, ka palekana, a me ka pihana ka‘a.

3.3 Ka Papa Hana Mea Kau ‘Āina o nā ‘Ano Like ‘Ole o Kaua‘i (MLTP)

Ma loko o ka MLTP, i mea e loa‘a aku ai ka Mo‘olelo i Kuhi ‘ia a i Makemake ‘ia, he pono ka loli ‘ana o ka holo ‘ana o ke kanaka ho‘okahi a kau i nā ‘ano mea kau hou a‘e, e like me ka hele wāwae, ka paikikala, a me ka mea kau no ka lehulehu. Ho‘ākāka ‘ia i loko o ka papa hana mea aku o nā mea kau like ‘ole ā puni ka mokupuni ‘eono mau polokalamu e pono ai ke Kalana, ka Moku‘āina, a me nā ‘oihana like ‘ole ‘ē a‘e e kūkulu ma waena o kēia wā a me ka 2035. ‘O kekahi o ia mau polokalamu, he polokalamu mea kau, he polokalamu po‘e hele wāwae, he polokalamu alanui kalana, he polokalamu hali mea kanu, a me kekahī polokalamu ho‘ohana

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‘āina. ‘O ka pahu hopu nui, ‘o ia ka pale ‘ana i ka ulu hou ‘ana achieving the Preferred Scenario will require a change in some of the drive-alone trip o ka pihana ka‘a, me ke kuhi pū ‘ia nō na‘e o ka pi‘i ‘ana o ka heluna kanaka.

3.3.1 Ka Polokalamu Mea Kau

‘O ke kumu no kēia polokalamu, ‘o ia ke kāko‘o ‘ana i ka pi‘i nui ‘ana o nā kānaka kau mea kau no ka lehulehu, me ka pahu hopu pū nō he pāhā ka nui aku o nā mea kau i ka hiki mai o ka 2035. Penei e pono ai nā ‘ao‘ao like ‘ole i hui pū ‘ia: ka ho‘onui ‘ana i ka holo pono o ka hana, ka ho‘onui ‘ana i ke kālā puka o ka hana, ka ho‘onui ‘ana i ke kālā i ho‘olako ‘ia no waho mai, ka ho‘onui ‘ana i ke kālā mea kau o ke kalana, a me ka ho‘ohana ‘ana i ke kālā i ho‘āhu a ho‘onui ‘ia e ho‘oponopono ai i ka pono o nā lawelawe mea kau. I mea e nānā ‘ia ai ka pono o ka holo o ka hana, nānā ‘ia ka pinepine o ka holo o nā lawelawe, ‘o nā hola a me nā wahi i nui loa ai ka makemake ka mea nui, a nānā pū ‘ia ka pono ke kūkulu ‘ia ‘ana o nā kahua kū ka‘a ‘ōhua o ke Kalana/Moku‘āina, a me nā kahua kū ka‘a ‘ōhua e pono ai ka ADA ma nā wahi a pau e kau ai ka po‘e kau (nā kaiāhome, kahi o nā hale kū‘ai, nā wahi e hai ai, nā kula, a pēlā aku).

I kēia wā, ho‘omalu ‘ia ka hana mea kau ma o nā limahana o ke Kalana, akā, ke no‘ono‘o ‘ia mai nei e ho‘ololi ma ka hai ‘ana i nā limahana ma ka palapala ‘aelike. I ka pi‘i ‘ana o ka heluna po‘e kau, pi‘i pū ka heluna ka‘a ‘ōhua, a pēia pū paha ka nui o nā ka‘a ‘ōhua. E kū‘ai ke Kalana i kekahī mau ka‘a ‘ōhua nui mai O‘ahu mai e ‘ike ai inā he kūpono kēia hana no Kaua‘i. Ke ho‘olālā ‘ia nei kekahī mau kahua waiho ka‘a ‘ōhua e kōkua ai i ka nui aku o nā ka‘a ‘ōhua a i mea e ‘oi aku ai ka pono o ka holo o ka hana.

Ke kuapo nei ke Kalana i ke ‘ano o ka ‘aila e ho‘oholo ai i nā ka‘a ‘ōhua he ea loa‘a wale i ‘ōpā ‘ia (*compressed natural gas*: CNG), a ke no‘ono‘o ‘ia nei e kūkulu ‘ia kekahī kahua ho‘opiha ‘aila no nā ka‘a o ke Kalana. ‘O kekahī mau ‘ano mana‘o, ‘o ia ka ho‘ohana ‘ia ‘ana o ka SmartCards e kōkua ai i ka po‘e ho‘ohana, ka ho‘ohuli ‘ana i nā kānaka ‘a‘ole i kū iā lākou nā mea kau ADA i nā lawelawe i pa‘a nā ala mea kau, a me ke koi ‘ana nō ho‘i e kūkulu ‘ia nā kahua ka‘a ‘ōhua ma nā kahua kū ka‘a ‘ōhua a pau i ka hiki ‘ana mai o ka 2020.

3.3.2 Ka Polokalamu Paikikala

Ma kēia polokalamu, koikoi ‘ia ka ho‘omau ‘ia o ka ho‘olilo ‘ana i ke kālā ma ka ho‘olālā ‘ana i ka ho‘oponopono ‘ia ‘ana o nā pono kūlanakauhale no nā makahiki 25 e hiki mai ana, i mea e ho‘olako ai i ka pono kūlanakauhale i ‘oi aku ai ka palekana no nā paikikala ā puni ka mokupuni.

3.3.3 Ka Polokalamu Po‘e Hele Wāwae

‘O ka pahu hopu o kēia polokalamu, ‘o ia ka ho‘onui ‘ana i ke kōkua, ka ‘olu‘olu, a me ka palekana o ka holo ‘ana o nā kānaka hele wāwae no ka hele pōkole ‘ana. I mea e paipai ai i ka ho‘onui ‘ana i ka hele wāwae ‘ana, paipai kēia papa hana i nā hana e hana ai ka po‘e hele wāwae

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no ka wā pōkole a me ka wā lō‘ihī. Nānā nui ka polokalamu i ka ho‘oponopono ‘ana ma nā wahi i nui loa ai ka hele wāwae ‘ana ma ka mokupuni, ‘o ke kikowaena pū nō o ke kaona i nui loa ai nā kānaka, ma nā ala e hui ai nā kula a me nā pāka i ho‘ohana nui ‘ia ai e kamali‘i, a ma nā alanui i loa‘a ai ho‘i nā kahua kū ka‘a ‘ōhua. Ho‘ohui ‘ia i loko o nā māhele o ka polokalamu ka ho‘olālā ‘ana no nā kānaka hele wāwae, ka polokalamu ala palekana e hele ai i ke kula (SRTS), ka ho‘olālā ‘ana o ke kikowaena kaona i kēia mua aku, ka ho‘okō ‘ia ‘ana o ka papa hana no ke kikowaena o ke Kaona ‘o Līhu‘e, ka loa‘a aku o ka mea kau, ka ho‘ākāka ‘ana no nā ala e hele ai kānaka, a me ka ho‘oponopono ‘ana i ka palekana no ka po‘e hele wāwae.

3.3.4 Ka Polokalamu Alanui Kalana

He mea nui ka ho‘oponopono ‘ia ‘ana o nā alanui e kōkua ai inā ‘ano like ‘ole o ka mea e holo ai i mea e ho‘okō ‘ia ai nā pahu hopu o kēia papa hana, me ka mālama pū ‘ia ‘ana o ke ‘ano kua‘āina ma ke kaupalena ‘ana i ka ho‘olaulā ‘ana i nā alaloa. ‘O kekahi mau mea nui hou aku, ‘o ia ke kāko‘o ‘ana i nā ala māka‘ika‘i ‘āina, ka hali ukana ‘ana, ka ho‘ēmi ‘ana i ka holo māmā loa ‘ana, ka ho‘oponopono ‘ana i ka palekana, a me ka pale ‘ana i ka ulu ‘ana o ka pihana ka‘a o kēia mua aku a me ka pi‘i hou ‘ana aku o ka pupū o ka holo.

3.3.5 Ka Polokalamu Hali Mea Kanu

Nānā nui kēia polokalamu i ka ho‘ēmi ‘ana i ka lilo no ka hali mea kanu ‘ana, ka hō‘alo ‘ana i ke kū ‘ana o ka holo i ka wā pō‘ino, ka ho‘oponopono ‘ana i ka loa‘a aku o nā mea kanu, a me ka hō‘oia ‘ana i ka loa‘a aku o ka mea e hiki ai ka po‘e hana i ko lākou mau wahi hana.

3.3.6 Ka Polokalamu Ho‘ohana ‘Āina

Ho‘ākāka kēia polokalamu i kēlā me kēia makemake a me nā hana e ho‘ohui ‘ia ai ka polokalamu mea kau o ke Kalana me kona mau hana ho‘omalu ulu. Alaka‘i ‘ia kēia polokalamu e nā koi nui no ka ho‘oponopono ‘ana i hiki ke ho‘omau ‘ia: ka emi o kona nui, ka lawa o kona piha, a me ka pili ‘ana ma waena o nā ‘ao‘ao like ‘ole. ‘O kekahi mau ‘ao‘ao, ‘o ia ka ho‘oponopono ‘ana i nā ‘ano like ‘ole o ka ho‘ohana ‘ia ‘ana o ka ‘āina, ke kūkulu ‘ia ‘ana o nā pāka a me nā kula ma nā kaiāulu, ke kūkulu ‘ia ‘ana o nā hana i pili pū no ka holo ‘ana, ka holo pōka‘a pono ‘ana a me ka loa‘a aku o nā ala like ‘ole, a me ka ho‘opa‘a ‘ana i nā ana pono mea kau.

3.3.7 Ka Ho‘okō ‘ia ‘ana o ka MLTP

Nānā ‘ia ka mālama ‘ia ‘ana o ke kūlana kūpono o nā pono kūlanakauhale ‘o ia ka mea nui a me ka ho‘oponopono ‘ana i nā kahua mea kau no ka lehulehu (The Kaua‘i Bus) a me nā kahua e pono ai ka po‘e hele wāwae. Nānā nui ‘ia nō ho‘i nā hanana alanui Kalana a me ka paikikala e ho‘okō ai i ka Papa Hana Kikowaena Kaona ‘o Līhu‘e a me nā papa hana ho‘oponopono kaiāulu, a pēia pū nā hana noi‘i e nānā nui ana i nā ‘ano like ‘ole o nā mea kau like ‘ole. Mana‘o ‘ia e hui

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pū nā ‘oihana like ‘ole o ke Kalana a me nā hui ‘ē a‘e nō kekahi ma ka hana pū ‘ana ma kekahi Kōmike Ho‘onohonoho Mea Kau (*Transportation Coordinating Committee*: TCC) nāna e ho‘omalu a ho‘okō i ka MLTP. Na ka TCC e ho‘okō aku i ka Polokalamu Ho‘oponopono Waiwai no nā hanana mea kau, a e hana pū ia me ka ‘Oihana Mea Kau o ka Moku‘āina e ho‘onohonoho ai i nā mea nui o ke Kalana me ka nānā nui pū i ka STIP o ka Moku‘āina.

I loko o ka MLTP, ua hō‘ulu‘ulu ‘ia kekahi papa hana ho‘okō me nā pahu hopu, nā mea nui e nānā ai, ame nā hui nona kekahi kuleana. Ua kūkulu ‘ia ka MLTP ma ke ‘ano he ‘ekolu nō wā: ka wā pōkole mai ka ‘āpono ‘ia ‘ana o ka papa hana ā hala ka 2015, ka wā ‘ano lō‘ihī aku mai ka 2016-2020, a me ka wā lō‘ihī mai ka 2021 ā ka 2035. E hō‘ano hou ‘ia ka papa hana i loko o ka 2021 ma hope o ka nānā ‘ana i ka holomua ‘ana i ka holo ‘ana o ka wā ‘ano lō‘ihī aku.

3.4 Ka Ho‘ohālike ‘ana me ka Wehewehe ‘Ano no ka Lehulehu a me ka Ho‘okele Waiwai a me ka Wānana ‘ana o ka 2014

Ua ho‘omākaukau ‘ia ka Papa Hana Laulā o Kaua‘i i Hō‘ano Hou ‘ia: Wehewehe ‘Ano no ka Lehulehu a me ka Ho‘okele Waiwai a me ka Wānana ‘ana (SAF) e ka SMS no ke Kalana ‘o Kaua‘i. Hō‘ike ‘ia i loko o ka SAF (no Pepeluali 2014) nā wānana no ka heluna kanaka, ‘ohana, hana, hale, malihini, a me nā hale noho malihini no ke Kalana ‘o Kaua‘i mai ka 2013 ā ka 2035. Ma kēia māhele, e ho‘ohālikelike ‘ia nā wānana no ka heluna kanaka o ka SAF me nā ha‘ina i hō‘ike ‘ia i loko o ka FAHTP a me ka MLTP e loiloi ai i ka pono o ia mau ‘ike a inā he pono ka ho‘oponopono ‘ia ‘ana o nā ha‘ina.

3.4.1 Ka Wānana no ka Heluna Kanaka

‘O ka ulu heluna kanaka i ho‘ohana ‘ia i loko o ke kumu ho‘ohālike o ka SAF, he 1.1 pakeneka o ka makahiki no ke Kalana ‘o Kaua‘i. He wānana kohu laina nā wānana i loko o ka SAF no ke Kalana ‘o Kaua‘i mai ka wā hope mai i palapala ‘ia ai ka ‘ike ā hiki i kekahi hō‘ike wānana o ka 2035. He hō‘ike nā wānana i nā hana a kānaka i ke au ‘ana o ka manawa i kū like me ka ulu ‘ana o ka heluna kanaka i ka holo ‘ana o ka wā o ka wānana.

Ho‘ākāka pū ‘ia nā wānana no ka heluna kanaka e like me ia i loko o nā Wahi Ho‘olālā ‘Āpana no ke Kalana ‘o Kaua‘i, ma ka ho‘ohana ‘ana i nā ‘ike heluna kanaka kēlā me kēia wahi o kahiko. ‘A‘ole he laina ka ulu ‘ana i wānana ‘ia no nā ‘āpana ‘eonō.

Hō‘ike ‘ia ma ka Papa 3.4.1 ka heluna kanaka i hō‘ike ‘ia i ho‘okumu ‘ia ma luna o ka mo‘olelo a me ka wānana a hō‘ike ‘ia i loko o ka SAF.

Papa 3.4.1 Heluna Kanaka o ka Po‘e Noho ma nā Wahi Ho‘olālā o ke Kalana ‘o Kaua‘i, 1990 ā ka 2035

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‘Āpana	Makahiki					
	1990	2000	2010	2020	2030	2035
Kalana ‘o Kaua‘i	51,676	58,463	67,091	74,693	83,328	88,013
Līhu‘e	11,169	12,507	14,683	18,017	21,595	23,456
Kōloa - Po‘ipū - Kalāheo	9,600	10,545	11,696	13,623	15,737	16,855
Hanapēpē - ‘Ele‘ele	3,873	4,362	6,157	6,463	6,860	7,094
Waimea	4,698	5,660	5,561	5,901	6,323	6,566
Hanalei (Kapa Kai ‘Ākau)	5,913	6,605	8,002	8,286	8,686	8,933
Kawaihau - Kapa‘a (Kaua‘i Hikina)	16,192	18,784	20,992	22,403	24,128	25,110

Kumu: Kaua‘i General Plan Update: Socioeconomic Analysis and Forecasts, Pepeleali 2014

Ke nānā ‘ia nā wānana o ka SAF i hō‘ike ‘ia ma ka Papa 3.4.1, wānana ‘ia he pi‘i ka heluna kanaka o ke Kalana ‘o Kaua‘i he 31 pakeneka. ‘O Līhu‘e kahi o ka nui loa o ka pi‘i o ka heluna kanaka mai ka 2010 ā ka 2035 he 60 pakeneka, ‘oiai ma ka ‘āpana ‘o Hanapēpē – ‘Ele‘ele, ua emi loa ka pi‘i ma ka wānana i ke au ‘ana o ia wā ho‘okahi nō he 15 pakeneka.

Hō‘ike ‘ia ka heluna kanaka noho a me nā malihini kipa i ka lā ho‘okahi ma ke ‘ano he ‘heluna kanaka maoli’. Hō‘ike ‘ia ma ka Papa 3.4.2 ka heluna kanaka i ho‘okumu ‘ia ma luna o ka mo‘olelo a me ka wānana i loko o ka SAF.

Papa 3.4.2 Heluna Kanaka Maoli o nā Wahi Ho‘olālā o ke Kalana ‘o Kaua‘i, 1990 ā ka 2035

‘Āpana	Makahiki					
	1990	2000	2010	2020	2030	2035
Kalana ‘o Kaua‘i	68,558	75,200	82,101	92,485	102,500	107,915
Līhu‘e	‘a‘ohe	15,368	17,266	20,582	24,424	26,433
Kōloa - Po‘ipū - Kalāheo	‘a‘ohe	16,012	17,248	20,133	22,800	24,213
Hanapēpē - ‘Ele‘ele	‘a‘ohe	4,362	6,157	6,463	6,860	7,094

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Waimea	‘a‘ohe	5,930	5,719	6,144	6,542	6,770
Hanalei (Kapa Kai ‘Ākau)	‘a‘ohe	10,232	11,514	12,723	13,357	13,722
Kawaihau - Kapa‘a (Kaua‘i Hikina)	‘a‘ohe	23,297	24,196	26,439	28,517	29,684

Kumu: Kaua‘i General Plan Update: Socioeconomic Analysis and Forecasts, Pepeleali 2014

3.4.2 Ka Ho‘ohālike ‘ana me ka FAHTP

Ma loko o ka FAHTP, ua hō‘ike ‘ia he wānana ‘ia ka pi‘i o ka heluna kanaka o Kaua‘i he 30 pakeneka a ‘oi i ka hiki ‘ana mai o ka 2035, a he kū like ia i ka pi‘i ‘ana he 31% i hō‘ike ‘ia i loko o ka SAF. Akā na‘e, ua emi mai ka heluna kanaka i wānana ‘ia no ka 2035 he 85,200 i loko o ka FAHTP, aia ma kahi o ka 2,800 (3.2%) ka emi mai i ka heluna kanaka i wānana ‘ia no ka 2035 he 88,013 i loko o ka SAF. Ma loko o ka FAHTP, ua hō‘ike ‘ia nō ho‘i ‘o ka nui loa o ka ulu ‘ana o ka heluna kanaka, aia ma Līhu‘e a me kahi o Kōloa - Po‘ipū a ua like pū nō kēlā me nā ‘ike i loko o ka Papa 3.4.1.

Inā ho‘ohana ‘ia nā wānana i hō‘ike ‘ia i loko o ka SAF ma kahi o nā wānana i ho‘ohana ‘ia i loko o ka FAHTP, he pono nō paha ka ho‘ololi ‘ana i nā mana‘o kōkua i hō‘ike ‘ia i loko o ka FAHTP.

3.4.3 Ka Ho‘ohālike ‘ana me ka MLTP

I loko o ka MLTP, ua wānana ‘ia ka ulu ‘ana o ka heluna kanaka o Kaua‘i he 27% 98,979, ua emi kēlā i ka heluna kanaka i wānana ‘ia i loko o ka SAF he 31% he 88,013.

I loko o ka MLTP, ua wānana ‘ia ka ulu ‘ana o ka heluna kanaka maoli he 22% he 98,979, a he emi loa nō kēlā i ka heluna kanaka maoli maoli i wānana ‘ia he 31% he 107,915. Aia ka ‘oko‘a i loko o ka pi‘i ‘ana o ka ulu ‘ana o ka heluna malihini kipa.

‘Oiai ‘a‘ohe kuhi ‘ana o ka MLTP he pi‘i ka pihana ka‘a i loko o ka Mo‘olelo i Kuhi ‘ia a i Makemake ‘ia, ‘a‘ohe ‘ike ‘ia o ka hopena o ka heluna kanaka maoli ki‘eki‘e a‘e i hiki ke loa‘a i loko o nā hanana ho‘oponopono waiwai i hiki ke loa‘a. Ma kahi o kēlā, e ‘ike ‘ia auane‘i ka hopena o ka heluna kanaka maoli ki‘eki‘e a‘e i hiki ke loa‘a i loko o nā ho‘oponopono ‘ana e pono ai no ka polokalamu mea kau i mea e kōkua ai i ka pi‘i o ka nui o ka po‘e kau e loa‘a ai ka ‘ole o ka pi‘i o ka pihana ka‘a.

**KA PAPA HANA LAULĀ I HŌ‘ANO HOU ‘IA
WEHEWEHE ‘ANO NO NĀ PONO KŪLANAKAUHALE O KAUAI**

KA HANA HO‘OKAHE WAI

Ho‘omākaukau ‘ia no

Ke Kalana ‘o Kauai

Ho‘omākaukau ‘ia e

R.M. Towill Corporation

Mei 2015

Ka Papa Hana Laulā i Hō‘ano Hou ‘ia
Wehewehe ‘Ano no nā Pono Kūlanakauhale o Kaua‘i
Ka Hana Ho‘okahe Wai

Ka Ho‘okahe Wai ‘ana

‘O ke kumu no kēia wehewehe ‘ano no ka hana ho‘okahe wai ke ho‘ohālike ‘ia me ka Papa Hana Laulā i Hō‘ano Hou ‘ia, ‘o ia ka hō‘ike aku i ka ‘ike i hiki ke ho‘ohana ‘ia e ke Kalana e kūkulu ai i nā lula alaka‘i nāna e alaka‘i aku i nā hanana ho‘oponopono no ka pono kūlahanakauhale no ka hana ho‘okahe wai o ke Kalana.

Māhele 1. Ka Hō‘ike Laulā o ka Hana Ho‘okahe Wai e Kū nei

1.1 Ho‘ākāka

He ho‘okahe wai ka hana nui a nā kahawai a me nā muliwai o Kaua‘i. Loa‘a nō ho‘i nā ‘auwai mahi kō ā puni ka mokupuni nāna e ho‘okahe aku i ka wai. Paipai ‘ia ma ka Puke A‘o Hana Wai Lana Kahe o ke Kalana ‘o Kaua‘i: Nā Ana Wai (Kaua‘i County Storm Water Runoff System Manual: Drainage Standards), i ‘āpono ‘ia i loko o ka 2001, ka mālama ‘ia ‘ana o kēia mau ‘auwaha loa‘a wale ma ka ‘āina. I mea e emi ai ka lana ‘ana o ka wai no ka haiki o kēia mau ‘auwaha loa‘a wale, ua kūkulu ka Department of the Army Corps of Engineers i nā pale kahawai ma nā kapa o kekahi o nā kahawai o Kaua‘i.

1.2 Ka Hana Ho‘okahe Wai e Kū nei

He nui loa nō ka ua o waenakonu a ma ka ‘ao‘ao hikina ‘ākau o ka mokupuni, me Mauna Wai‘ale‘ale ma waenakonu o ka mokupuni, kahi i palapala ‘ia ai ka ‘awelika huina ua o ka makahiki he 480 ‘īniha.

Mai ka hō‘ano hope ‘ia ‘ana mai o ka Papa Hana Laulā o Kaua‘i i ka 2000, ua ho‘ololi ka Federal Emergency Management Agency i ka Hana Noi‘i ‘Inikua Wai Hālana o ke Kalana ‘o Kaua‘i (*Kaua‘i County’s Flood Insurance Study: FIS*), a hō‘ano pū ‘ia nā kūlana wai hālana kumu, ke ala kahe, nā wahi pō‘ino nui i ka wai hālana, ke kuhikuhi ‘ana i nā wahi, a me ka ho‘ohana ‘ia ‘ana nō ho‘i o nā leka i pa‘i ‘ia ma mua no ka ho‘ololi ‘ia ‘ana o nā palapala‘āina a me nā wehewehe ‘ano no ka wai hālana. Ua hō‘ano hou nō ho‘i ke Kalana i nā palapala‘āina pūhe‘e kai mimiki no ka mokupuni.

Ua ho‘opa‘a ka FIS i nā māhele a pau a i ‘ole kekahi hapa o nā kumu wai ma lalo nei no ka wai hālana ma nā ‘ano hana i ho‘ākāka ‘ia: Kahi Wai Kahe o Hanalei, Kahi Wai Kahe o Kapa‘a, Kahi Wahi Kahe o Kaua‘i Komohana, Kahi Wai Kahe o Waimea, Kahi Wai Kahe o Wailua, Kahi Wai Kahe o Līhu‘e, Kahi Wai Kahe o Hanapēpē, Kahi Wai Kahe o Anahola, Kahi Wai Kahe o Kōloa, Kahi Wai Kahe o Wainiha, a me ke Kahawai o Hanamā‘ulu. Ua ho‘opa‘a hou ‘ia ka hālana kai mimiki ma ke kapa kai holo‘oko‘a a ho‘opa‘a hou ‘ia ma nā ‘ano hana i ho‘ākāka ‘ia me ka hō‘ano hou pū ‘ana nō i nā kaupalena ‘ana ma nā kapa kai komohana hema, ka hema, a me ka hikina.

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Ua ho‘opa‘a nō ho‘i ka FIS i kēia mau kumu wai a pau ma lalo nei a i ‘ole kekahi hapa ma nā ‘ano hana laulā hou aku: Kahi Wai Kahe o Wainiha, Kahi Wai Kahe o Līhu‘e, Kahi Wai Kahe o Kapa‘a, Kahi Wai Kahe o Hanalei, Kahi Wai Kahe o Kōloa, Kahi Wai Kahe o Wailua, Kahi Wai Kahe o Kalihiwai, a me Kahi Wai Kahe o Waimea.

Ma ka hapa nui o nā alanui o nā kaiāhome kahiko aku o Kaua‘i, he mahiki ma ka‘e alanui. ‘A‘ohe hana ho‘okahe wahi ma lalo o ka honua ma kekahi o kēia mau alanui. Kahe ka wai hālana ma nā ‘auwaha o ka‘e o ke alanui ā hiki i kekahi alanui nui aku me nā ka‘e kimeki, nā ‘auwaha ho‘okahe wai, a me nā alahele wāwae kimeki, a me ka hana ho‘okahe wai ma lalo o ka honua a i ‘ole he kahe ka wai ā hiki i kahi e ‘a‘e ai ke alanui i kekahi ‘auwaha i hana lima ‘ia a i ‘ole he ‘auwaha ho‘okahe wai. Ma nā kaiāhome hou, loa‘a nā ‘auwaha ho‘okahe wai o ka‘e alanui a ma lalo pū nō a i ‘ole nā ka‘e kimeki, nā ‘auwaha o ka‘e alanui, a me nā alahele wāwae kimeki me nā hana ho‘okahe wai ma lalo o ka honua.

Māhele 2. Nā Pilikia Nui o ka Wai Hālana

‘Ekolu nō mau ‘ano o ka wai hālana i ‘ike ‘ia ma ka mokupuni ‘o Kaua‘i: hū ke kahawai, ke kai mimiki, a me ka makani pāhili. Malia paha ‘o ke kumu o ka hū ‘ana o ke kahawai, ‘o ka mau o ka ‘ōpala i loko o ke kahawai, ka wai kahe ikaika, ke kapakahī o ke kahe ‘ana o ka wai, nā ‘alu ma ka ‘āina ma kauwahi, ke kūpono ‘ole o ke kahe ‘ana o ka wai, a ‘o ka loli paha o ke kahe ‘ana o ka wai ma muli o ke kūkulu ‘ia ‘ana o nā hale. ‘O ke kai mimiki a me ka pi‘i pākela pū o ka nalu ma muli o ka makani pāhili kekahī o ke kumu o ka luku ‘ana ma luna o ka ‘āina.

Kahi Wai Kahe o Hanalei: Ua nui ka hālana ‘ana o ka Muliwai o Hanalei i ka wā ma mua a hālana a‘ela nā wahī he nui o ke Alaloa Kūhiō a me nā pā mahi ‘ai i pili pū mai. He nui nā hi‘ona ‘āina wai hālana o kahi o ka Muliwai o Hanalei e ho‘onui ana i ka pilikia o ka hū ‘ana o ka muliwai. I ka wā emi o ke kahe ‘ana o ka wai, ālailai ‘ia ke kahe ‘ana e kekahī pu‘e one a me ka uluāhewa o ka nāhelehele ma ka‘e. I ka wā kahe nui, na ka pu‘e one i kūkulu ‘ia no ke kūkulu ‘ia ‘ana o nā hale hou e ālailai i ke kahe ‘ana o ka wai ma kahi o ka waha. Na nā uapo alaloa a me kekahī pu‘e one e ālailai i ke kahe ‘ana o ka wai ma nā Kahawai o Wai‘oli a me Waipā. He waiho ākea ‘o Hanalei i ka hālana ‘ana o ka wai i ‘ike ‘ia ma muli o ke kai mimiki a me ka nalu pi‘i i ka makani ‘ino, a ‘o nā hale a me nā kauhale ma kapa kai nā mea pilikia loa.

Kahi Wai Kahe o Anahola: Ālailai ‘ia ka waha o ke Kahawai o Anahola e kekahī pu‘e one waiho wale, a pēlā e pi‘i ai ka wai hālana ke emi ke kahe ‘ana. I ka ua nui, pi‘i ka ikaika o ke kahe ‘ana o ka wai a pi‘i pū ka ‘a‘ai ‘ia ‘ana o ka ‘āina, ka hāne‘e ‘ana, a me ka luku ‘ia ‘ana o nā ukana.

Kahi Wai Kahe o Kapa‘a: Ua ‘ike ‘ia ka luku ‘ana ma kapa kai o Kapa‘a-Keālia ma muli o ka pā mai o nā kai mimiki he nui. ‘O kekahī mea nō, i loko o nā mo‘olelo ka wā ma mua, ‘ike ‘ia ka luku ‘ia ‘ana o nā alanui hali kō, nā uapo, a me nā mea kanu ‘ai ma kahi o ke Kahawai o Kapa‘a. Mai ka wa mai i pau ai ke kūkulu ‘ia ‘ana o nā ‘Auwai ‘o Mō‘īkeha a me Waikaea, ‘a‘ohe

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palapala hou ‘ana no ka luku ‘ana ma muli o ka wai hālana. Akā na‘e, pilikia ka hālana ma muli nō o ka uluāhewa ‘ana o ka nāhelehele a me ka pi‘i o ka lepo o papakū ma loko o nā ‘auwai, a pēia pū i ka pi‘i ‘ana o ka ‘ōpala ma nā uapo alaloa ma luna o ke Kahawai o Kapa‘a.

Kahi Wai Kahe o Wailua: Ua pinepine ka pi‘i o ka wai o nā mile 2 o lalo o ka Muliwai o Wailua ā hū a‘e, a ‘ane‘ane nō a pau pū ke alanui e holo ana i kahi o Wailua Homestead ma lalo o ka wai i ka ka wai hālana hope loa aia i ka 1975. Paila ‘ia ka ‘ōpala ma ka uapo alaloa a pēlā e hālana ai ka wai ma uka aku ma ka Muliwai o Wailua. He hiki nō ho‘i ke pilikia nā kapa kai o Wailua i ka hālana kai i ke kai mimiki.

Kahi Wai Kahe o Līhu‘e: He pau pū nā wahi kula ha‘aha‘a o kapa kai ma lalo o ka wai kahe o nā Kahawai o Nāwiliwili a me Pū‘ali, a ‘o nā wahi kaiāhome pū nō kekahi, nā kahua ho‘okū ka‘a, a me nā alanui ma kahi kokoke i ke Kahawai o Pū‘ali. ‘O nā mea e pilikia ai i kēia manawa, ‘o ia ka paila ‘ana o ke one ma kahi o ka waha o ke Kahawai o Nāwiliwili a me ka paila pū ‘ana o ka ‘ōpala ma nā waha o nā uapo, a ‘o kahi o ka Uapo o Ala Rice kahi pilikia loa. Pilikia loa nā kapa kai o Nāwiliwili a me Niumalu i ka hālana ‘ana i ke kai mimiki kekahi.

Kahi Wai Kahe o Kōloa: He pinepine ka hālana ‘ana o ke kai ma kapa kai o Kōloa-Po‘ipū ma muli o ka ha‘aha‘a o kula ma ia kapa kai a me ka pilikia o nā ‘auwaha ho‘okahe wai. ‘O ka paila ‘ana o ka ‘ōpala a me ka uluāhewa ‘ana o ka nāhelehele nō ho‘i kekahi mea e pi‘i ai ka pilikia ma ke Kahawai ‘o Waikomo a me Ala Waikomo. He hō‘ike nā kama‘āina o ka ‘āina he hū nō ka wai o Kahawai o ‘Ōma‘o. ‘Ike ‘ia nā mo‘olelo o ka luku nui ‘ana i ka hālana ‘ana o ke kai ma kapa kai o Kahawai ‘o Waikomo a me Po‘ipū i ka po‘i nui o ka nalu i ka makani pāhili a me ka pi‘i loa o ka nalu.

Kahi Wai Kahe o Hanapēpē: ‘Ike ‘ia ka hālana wai ma kula ha‘aha‘a ma hope o nā pale kahawai ma uka o Hanapēpē ma kahi wai kahe o ka ‘Alu o Hiki‘ula. Ma kahi e pau ai ke kahe ‘ana o ka wai ma waena o Ala Hanapēpē a me ka waha o ka muliwai, ‘ike ‘ia nō ho‘i ka hālana wai ma kula ha‘aha‘a ma ia wahi. He ālailai nō ho‘i ka pu‘e one ma ka waha o ka muliwai a pēlā e pi‘i ai ka hālana wai. ‘Ike ‘ia nō ka hālana ‘ana o ke kai o ke Awa o Hanapēpē no ke kai mimiki a me ka makani pāhili.

Kahi Wai Kahe o Kaua‘i Komohana: I ka wā ma mua, ua ‘ike ‘ia ka hālana wai ma nā kaiāhome, nā alanui, a me nā pā mahi kō o Kekaha. He hō‘ike nā kama‘āina ua pi‘i pū ka pilikia o ka hālana wai i nā pu‘e one i loko o nā ‘auwaha ho‘okahe wai ma kahi o Kekaha. Ma muli o kona ‘ano he kaona kapa kai, ‘ike ‘ia ka hālana ‘ana i ke kai mimiki, ka nalu pi‘i loa i ka makani pāhili a me nā makani ‘ino.

Kahi Wai Kahe o Wainiha: ‘Ike ‘ia ka pilikia ma nā kula ha‘aha‘a o ke Awāwa o Wainiha ma muli o ka hū ‘ana o ka Muliwai o Wainiha, a pēia pū nō ma nā kaiāhome, nā pā mea kanu ‘ai, a me kekahi māhele o ke Alaloa Kūhiō kekahi. ‘Ike ‘ia ka luku nui ‘ana ma ke Awāwa o Wainiha i

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ka pi‘i loa ‘ana o ka nalu, a ‘o ke kai mimiki ka mea nui loa ma kai ā hiki i uka loa o ke awāwa. I uka loa aku, ‘ike ‘ia nō ho‘i ka hāne‘e pali ‘ana a me ka luku ‘ia ‘ana o ke alanui ma muli o ka wai kahe ikaika loa.

Kahi Wai Kahe o Waimea: Ua kūkulu a ho‘oponopono ‘ia kekahi hana pale wai e pale ai i ke kaona ‘o Waimea i ka hālana ‘ana o ka wai o ka Muliwai o Waimea. Akā na‘e, ma muli o kēia hana, ua pi‘i ka pilikia o ka ho‘okahe wai ‘ana ma kula ha‘aha‘a ma uka aku o ke Awāwa o Waimea. Hiki ke ‘ike ‘ia ka hū ‘ana o ka wai ā hālana ma uka aku ma muli o ke pani ‘ia ‘ana o nā pani puka wai hālana i ka wā o ke kahe ikaika ‘ana o ka muliwai a me ke pani ‘ia ‘ana o nā paipu ho‘okahe wai.

Māhele 3. Nā Papa Hana Ho‘opalekana Wai Hālana

Ua emi loa ka nui o nā papa hana ho‘opalekana wai hālana i kūkulu ‘ia ma Kaua‘i ma muli o ke ‘ano o ka ho‘omalu ‘ana o ke kalana i ka ‘āina, ka ho‘okahe wai ‘ana, nā ‘āina wai kahe, a me nā lula alaka‘i no ka wai. Ma kahi o kēlā, alaka‘i ‘ia ka ho‘omalu ‘ana o ke kalana i nā ‘āina wai kahe e nā hō‘ike pili i ka ‘ike no nā ‘āina wai kahe no nā wahi i ‘ike nui ‘ia ai ka hālana wai, e like me ia i hō‘ike ‘ia e nā ‘oihana Moku‘āina me ka Pekelala.

‘O Hanapēpē, Waimea, a me Kapa‘a wale nō nā ‘āpana me nā hana pale wai hālana. Na nā pale wai ma ka‘e o ka Muliwai o Hanapēpē e pale i ka hapa nui aku o Hanapēpē he 0.2 pakeneka ka hiki o ka ‘ike ‘ia o ka hālana wai o ka makahiki he 52,000 cfs ka nui o ka wai hālana.

Ma Kapa‘a, ua kūkulu ke kalana i ka ‘Auwai ‘o Mō‘īkeha he 4,600 kapua‘i ka lō‘ihī e pale aku ai he 1 pakeneka ka hiki o ka ‘ike ‘ia o ka hālana wai o ka makahiki. Ua kūkulu ‘ia ka ‘Auwai ‘o Waikaea a ‘o kona nui, he 10 makahiki ka nui o nā makahiki o ka hālana wai. Na ka ‘Auwai o Waipouli ma ka‘e o ke Alaloa Kūhiō e hopu i ke keu o ka hālana wai no Waikaea.

Na kekahi pale wai ma ka‘e komohana o ka Muliwai o Waimea e pale aku iā Waimea i ka 1 pakeneka o ka hiki ke ‘ike ‘ia o ka hālana wai o ka makahiki. I uka hou aku o ke alaloa, na ka papa hana o ka United States Army Corps of Engineers (USACE) i kūkulu ‘elua ‘auwaha ho‘okahe wai, nā paipu ho‘okahe wai, ho‘olō‘ihī ‘ia ka pale wai, a kūkulu ‘ia kekahi pā pale wai e pale aku ai i ke kaona i ka 1 pakeneka o ka hiki ke ‘ike ‘ia o ka hālana wai i uka he 5.7 kapua‘i ke ki‘eki‘e o kahi o uka e pale ai i ka wai hālana.

He nui nō nā luawai ho‘oki‘o ma Kaua‘i, a ho‘ohana nui ‘ia no ka hana wai ‘ana i nā mea kanu. He mālama nō ho‘i nā loko wai i ka wai, akā, ‘a‘ole holo pono kona ‘ao‘ao he kōkua i ka pale ‘ana i nā kula ha‘aha‘a i ka hālana wai, no ka mea, piha mua ia mau wahi i ka wai o nā ‘auwai ma mua o ka helele‘i ‘ana o ka ua. Hiki ke kūkulu ‘ia nā lua mālama wai e ho‘ēmi ai i ka hālana ‘ana o ka wai ke pi‘i loa wai. Na Nā Ana Ho‘okahe Wai o Kaua‘i (Kaua‘i Drainage Standards) e hō‘ike i nā ana no ke kūkulu ‘ana i nā lua mālama wai.

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‘A‘ohe Papa Hana Ho‘okahe Wai Nui no ka mokupuni, akā, no nā kaiāulu a me nā papa hana kūkulu hale wale nō. He mana‘o ko ka ‘Oihana Pono Kūlanakauhale e nānā nui i nā wahi pilikia loa a me nā wahi wai kahe, me ka mana‘o nui nō ho‘i e kūkulu i nā papa hana ho‘okō hana e ho‘ākāka ana i nā hana no ka pale a me ke kōkua ‘ana.

Paipai ‘ia nā Papa Hana Ho‘okahe Wai Nui no nā wahi i ‘ike nui ‘ia ai ka hālana wai, e like me Nāwiliwili, Kapa‘a, Wailua, Po‘ipū, a me Kekaha. Na nā Papa Hana Ho‘okahe Wai Nui e hō‘ike i ka wehewehe ‘ano moākāka no ke kūlana hālana wai a loiilo nō ho‘i i ka pono o nā pale wai, nā lua mālama wai, a i ‘ole nā koho like ‘ole no ka pale ‘ana i ka hālana wai.

Aia i loko o ke Kānāwai o ke Kalana ‘o Kaua‘i o ka 2006, ho‘ākāka ‘ia nā ana a me nā koi no ke kūkulu ‘ia ‘ana o nā pono kūlanakauhale no ka ho‘okahe ‘ana i ka wai hālana, penei:

- Pale a mālama i nā ‘auwaha ho‘okahe wai e kū nei i kēia wā
- Pale i nā kaiāhome mai nā pilikia i ka hālana wai
- Ho‘olako i ka hana e wehe ‘ia ai ka wai mai loko mai o ke kaiāhome me ka ho‘opilikia ‘ole ‘ana ho‘i i ka ‘āina waiho wale a i ‘ole nā ukana o kekahī kanaka
- I mea e pale ai i nā ‘auwaha kahe wai a me nā kapa kai, e ho‘ēmi ‘ia ka nui o nā mea ho‘ohaumia a me ka lepo o papakū ā like me ia ma mua o ke kūkulu ‘ia ‘ana o nā hale
- I mea e pale ai i nā ‘auwaha kahe wai a me nā kapa kai, e mālama ‘ia ka palena nui o ka wai kahe ā like me ia ma mua o ke kūkulu ‘ia ‘ana o nā hale
- Pale i nā ‘āina wai a me nā ‘ano wahi i like ke ‘ano e pono ai ke kūlana ma‘ema‘e o ka wai. E like paha me kēia: kūkulu i nā uapo ma luna o nā kahawai ma kahi o nā ‘auwaha ho‘ohuli wai i ‘ole e ho‘ohuli ‘ia ai nā papakū kahawai e loli ai ka ‘āina waiho wale ma kekahī ‘ano i mana‘o ‘ole ‘ia.

No nā papa hana kūkulu hale hou, na nā Ana Ho‘okahe Wai o Kaua‘i e hō‘ike i nā mana‘o kōkua, e like me ka mālama ‘ana i ka wai hālana e like me ia ma mua o ke kūkulu ‘ia ‘ana o nā hale, a pēlā e pale ‘ia ai ke kūkulu ‘ia ‘ana o nā hale hou i ‘ole e pilikia ai i ke kūlana hālana wai o kēia manawa me ka pi‘i pū nō o ka pilikia.

**KA PAPA HANA LAULĀ I HŌ‘ANO HOU ‘IA
WEHEWEHE ‘ANO NO NĀ PONO KŪLANAKAUHALE O KAUĀ‘I**

KA HANA WAI

Ho‘omākaukau ‘ia no
ke Kalana ‘o Kaua‘i

Ho‘omākaukau ‘ia e
R.M. Towill Corporation

May 2015

Ka Papa Hana Laulā i Hō‘ano Hou ‘ia
Wehewehe ‘Ano no nā Pono Kūlanakauhale o Kaua‘i
Ka Hana Wai

Ka Wai

‘O ke kumu no kēia wehewehe ‘ano no nā pono kūlanakauhale no ka wai ke ho‘ohālike ‘ia me ka Papa Hana Laulā i Hō‘ano Hou ‘ia, ‘o ia ka ho‘okumu ‘ana i nā lula alaka‘i e alaka‘i ai i ka ho‘oponopono ‘ana o kēia mua aku no ka hana wai o ke Kalana. No ka ‘Oihana Wai o ke Kalana ‘o Kaua‘i ke kuleana ‘o ke kūkulu a me ka ho‘omalu ‘ana i ka hana wai i hui ‘ia ai nā kumu wai, ka hana e mālama ai, a me ka ho‘okahe ‘ana. Hō‘ike pū ‘ia nā hana wai i ‘ona ‘ia ma ka mokupuni ma loko o kēia hō‘ike.

Māhele 1. Ka Hō‘ike Laulā no ka Hana Wai e Kū nei

1.1 Ho‘ākāka

Ua kūkulu ‘ia nā hana wai kahiko loa he nui e kū nei i kēia manawa e nā hui mahi kō, a ma hope mai, ua ho‘ākea hou ‘ia e kūpono ai ka makemake i nui hou maila i ka pi‘i ‘ana o ka heluna kanaka o ka mokupuni. Ua ho‘ololi ‘ia kēia mau hana wai ma hope no ka ‘Oihana Wai o ke Kalana ‘o Kaua‘i no ka ho‘omalu ‘ana, ka ho‘oholo ‘ana, a me ka ho‘okele ‘ana. He ke‘ena ka ‘Oihana Wai i ‘ano kū‘oko‘a nō nāna e lawelawe i kahi o 20,500 po‘e kū‘ai (mai Nowemapa 2013) a holo nō kāna hana ma muli o ka ‘ohi ‘ia o nā kāki no ka wai. Hō‘ike ‘ia ka ho‘ākāka ‘ana o ka hana wai o ka ‘Oihana Wai ma loko o ka Māhele 1.2.

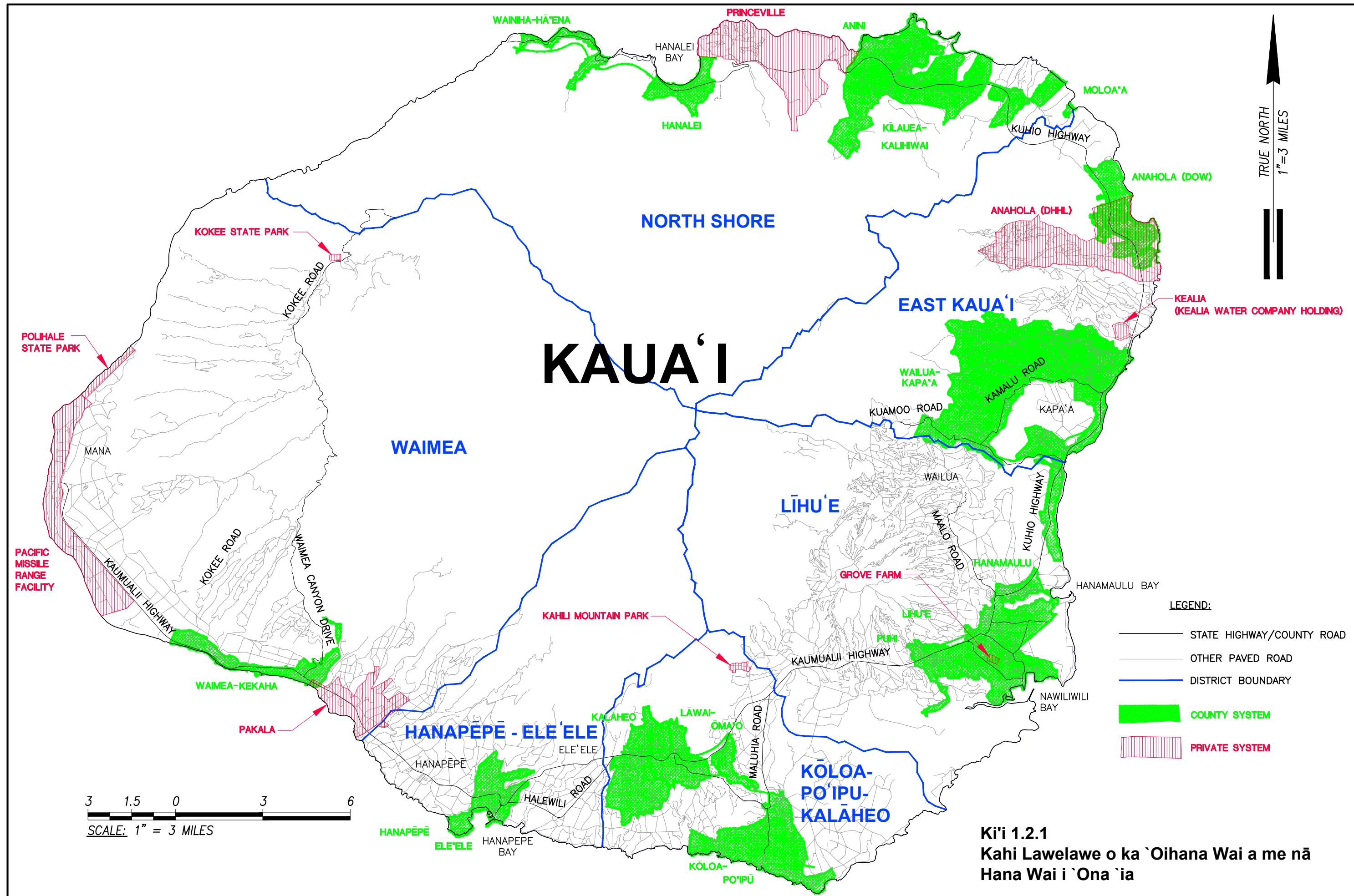
Loa‘a nō ho‘i ‘eiwa mau hana hawa ma Kaua‘i i ho‘omalu ‘ia e ka Papa Ola o ka Moku‘āina, Māhele Wai Inu Palekana. Hō‘ike ‘ia nā hana wai i ‘ona ‘ia ma loko o ka Māhele 1.3.

1.2 Nā Hana Wai o ka ‘Oihana Wai e Kū nei

He lawelawe nā hana wai o ka ‘Oihana Wai e kū nei i kekahi mau wahi a pū‘ulu po‘e kū‘ai i ho‘ākāka ‘ia. I mea e pono ai ka ho‘olālā ‘ana, na ka ‘Oihana Wai e ho‘ākāka i ka hana wai ma ke ‘ano he 13 mau wahi lawelawe e like me ia i hō‘ike ‘ia ma ke Ki‘i 1.2.1 a e like me ia i hō‘ike ‘ia ma lalo nei. Ua ho‘okumu ‘ia ka ‘ike no nā hana wai o ka ‘Oihana Wai e kū nei ma luna o nā kūkākūkā ‘ana me ka ‘Oihana Wai, nā palapala‘āina hana wai hou loa o ka ‘Oihana Wai, a me ka Papa Hana Wai o ka 2020, i ho‘omākaukau ‘ia e ka ‘Oihana Wai ma loko o Malaki o ka 2001.

1. Waimea-Kekaha:

‘O Waimea ke kikowaena o ka lehulehu o ka ‘Ao‘ao Komohana i nui ai nā hale kaiāulu, e like me ke kula ki‘eki‘e, ka haukapila, me nā hale ‘aina pū a me nā hale kū‘ai kekahi. He kaiāhome nō ma Kekaha me nā wahi ho‘oulu mea kanu ‘ai, nā wahi hana, a me nā pāka Moku‘āina. Ho‘ohui pū ‘ia ka Pacific Missile Range Facility i loko o kēia wahi lawelawe. Aia ma kahi o 5,135 mau kānaka ma kēia wahi lawelawe.



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‘Ekolu nō wahi pi‘i o ka hana i loko o kēia wahi lawelawe: kahi 540, kahi 196 o Waimea, a me kahi 196 o Kekaha. Na ka hale pauma wai o Waimea Uka e pauma i ka wai i luna ā kahi 540 mai kahi 196 o Waimea mai. Na ka hale pauma wai o Waimea e ho‘oholo i ka wai mai kahi 196 o Kekaha ā kahi 196 o Waimea ma muli o ka lō‘ihī ma waena o kahi lawelawe o Kekaha a me Waimea.

Ho‘opiha ‘ia kahi lawelawe o Waimea-Kekaha e ‘eono mau kumu nui:

- Ke Ana Puka Kekaha Helu 12
- Ka Luawai o ke Awāwa ‘o Paua
- Ka Luawai o Kekaha (Waipao) Luawai “B”
- Ka Luawai o Waimea Luawai “A” (Helu 26)
- Ka Luawai o Waimea Luawai “2”
- Ka Luawai o ke Awāwa ‘o Kapilimao

Aia ke Ana Puka Helu 12 o Kekaha a me ka Luawai o ke Awāwa ‘o Paua i loko o kahi ho‘okahi a me kahi 196 o Kekaha me ‘elua mau pahu mālama wai 0.5 miliona kālani (MG), ‘o ia Pahu Wai o Paua #1 & #2. Ho‘ohana ‘ia nā pauma huila kuinao papakū no ka ho‘oholo ‘ana i ka wai i loko o nā pahu mālama wai. He pahu kimeki ka Pahu Wai #1 o Paua a he pahu wai kila i kīpapa ‘ia ai i ke aniani ka Pahu Wai #2 o Paua. Loa‘a kekahi paipu wai he 10-‘īniha a he 12-‘īniha ka nui ma Ala Mānā e lawelawe ai iā Kekaha.

Lawelawe ka Luawai “B” o Kekaha (Waipao) a me ka Luawai “A” o Waimea (Helu 26) i kahi 196 o Waimea. Loa‘a ‘elua mau pahu mālama wai kimeki; he 0.25 MG ka nui o ka Pahu Wai 1 o Waimea, a he 0.50 MG ka Pahu Wai 2 o Waimea. Ho‘ohana nā luawai ‘elua i nā pauma huila kuinao papakū e ho‘oholo ai i ka wai i loko o nā pahu mālama wai.

Lawelawe ka Pahu Wai “2” o Waimea i kahi 196 o Waimea a me kahi 540, ‘o ia kahi o Waimea Uka. Ho‘ohana pū nō ho‘i ia luawai i kekahi pauma huila kuinao papakū e ho‘oholo ai i ka wai i loko o kekahi pahu mālama wai kimeki he 0.1 ka nui.

Lawelawe ‘ia ke Awāwa ‘o Kapilimao e ka Luawai o Kapilimao a me ka pahu mālama wai he 0.6 MG ka nui.

Hana ‘ia ka hana māhelehele wai i nā paipu kahiko he nui i kūkulu ‘ia i ka 1924. Kūkulu ‘ia nā paipu ‘ē a‘e i loko o ua hana nei i loko o nā 1950 a ma hope mai paha.

2. Hanapēpē-‘Ele‘ele

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Ho‘ohui ‘ia i loko o kēia wahi ‘o Port Allen, ‘o ia ho‘i ke kahua hana uila nui loa o ka mokupuni, a he mau hana hou a‘e nō i hana ‘ia ma kēia wahi. Ho‘ohui ‘ia i loko o kēia wahi ke kaona ‘o Hanapēpē a me Hanapēpē Uka, kahi haiki o nā hui hana o ‘Ele‘ele a me nā kaiāhome pū kekahi. Loa‘a ma kahi o 4,430 po‘e kānaka.

Loa‘a ‘ehā mau wahi ho‘okaomi i loko o ka hana wai o Hanapēpē-‘Ele‘ele: Kahi 402 o Hanapēpē, kahi 212, kahi 340, a me kahi 402 o ‘Ele‘ele. Ho‘oholo ‘ia ka wai i ‘Ele‘ele ma o nā kahua pauma nui, ‘oiai aia nā kumu wai a pau ma ka ‘ao‘ao Hanapēpē o kahi lawelawe.

Ho‘olako ‘ia ka wai o kahi Hanapēpē-‘Ele‘ele e ‘ehā mau luawai: Ka Luawai Helu 4 o Hanapēpē, ka Luawai Helu 25 o Hanapēpē, ka Luawai “A” o Hanapēpē, a me ka Luawai “B” o Hanapēpē ke nānā ‘ia nā palapala‘āina a ka ‘Oihana Wai o ke Kalana ‘o Kaua‘i.

Lawelawe ka Luawai Helu 25 o Hanapēpē i kahi 212 i loko o Hanapēpē. Ho‘ohana ia luawai i kekahi pauma i kū ma lalo o ka ‘ili wai e ho‘oholo ai i ka wai i loko o kekahi pahu mālama wai he 0.5 MG ka nui. Lawelawe ka Luawai “A” o Hanapēpē i kahi 402 o Hanapēpē (Hanapēpē Uka) a he pauma huila kuinao papakū nō e ho‘oholo ai i ka wai i loko o kekahi pahu mālama wai 0.5 MG ka nui. Lawelawe ka Luawai “B” o Hanapēpē a me ka Luawai Helu 4 o Hanapēpē i ko ‘Ele‘ele po‘e. Ho‘ohana ia mau mea ‘elua i ka pauma huila kuinao papakū e ho‘oholo ai i ka wai i loko o ‘elua mau pahu mālama wai he 0.4 MG ka nui a aia ma kahi 340. Lawelawe nō ho‘i ka Luawai Helu 4 o Hanapēpē i kahi 402 o ‘Ele‘ele me kekahi pahu mālama wai he 0.2 MG ka nui.

‘O ka paipu wai nui loa, he 12 ‘īniha ka nui ma loko o ke Alaloa Kaumuali‘i a loa‘a kekahi paipu 12 ‘īniha hou aku nō e moe ana ma ka‘e o ka Muliwai o Hanapēpē. Ua kahiko loa nā paipu i loko o ka hana māhelehele wai a ua kūkulu ‘ia i nā makahiki 1920-1940.

3. Kalāheo

Ho‘ohui ‘ia nā wahi hui hana o Kalāheo ma ke Alaloa Kaumuali‘i ma Ala Pāpālina, a me nā kaiāhome like ‘ole ma waho o ke alaloa. Loa‘a ma kahi o 6,280 po‘e kānaka i loko o kēia wahi lawelawe. Loa‘a ‘ehā mau wahi ho‘okaomi i loko o kēia wahi lawelawe: Kahi 1290, kahi 1222, kahi 1112 a me kahi 886. Ma waho a‘e o kēia, ho‘opili pū ‘ia kahi lawelawe o Kalāheo me kahi lawelawe o Lāwa‘i, he ‘elua nō ona mau wahi ho‘okaomi, ‘o ia kahi 825 a me kahi 677.

Ho‘olako ‘ia ka wai o kahi lawelawe o Kalāheo e ‘elua mau luawai: Ka Luawai 5631-01 o Kalāheo (Luawai A) a me ka Luawai 5631-02 o Kalāheo (Luawai B) ke nānā ‘ia

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nā palapala‘āina a ka ‘Oihana Wai o ke Kalana ‘o Kaua‘i. Aia nā luawai ‘elua ma kahi ho‘okahi a ho‘ohana ‘ia nā pauma huila kuinao papakū i loko o ka pahu kumu wai he 0.1 MG ka nui a me ke kahua ho‘oponopono wai mea ‘ino o Kalaheo, nā pahu mālama Luawai Ma‘ema‘e. He 2,000 kālani o ka minuke ka nui o ia mau luawai i hui pū ‘ia a lawelawe ‘ia kēia mau wahi ho‘okaomi: Kahi 1290, kahi 1222, kahi 1112, a me kahi 886.

Loa‘a ‘elima mau kahua pauma ho‘onui i loko o kēia wahi lawelawe: Ke kahua kumu wai ho‘onui (Nursery Booster Station: BS), Kalāheo, ka pahu wai ho‘i, Kukuiolono, a me ka BS hou o Kalāheo. Ho‘ohana ‘ia nā kahua o Kalāheo a me ka pahu wai ho‘i no ka pō‘ino wale nō.

Holo kekahi paipu ho‘oholo wai he 12 ‘īniha ka nui mai nā luawai ‘elua i lalo o Ala Lae e ho‘olako ai i kahi o Kalāheo. He mau ‘ano nō o ka nui o ka makahiki ke kahiko o nā paipu o ka hana māhelehele a kūkulu ‘ia nā paipu kahiko loa mai nā makahiki 1942-1953 mai.

4. Lāwa‘i-‘Ōma‘o

‘O nā wahi nui i ho‘ohui ‘ia i loko o kahi lawelawe o Lāwa‘i-‘Ōma‘o, ‘o ia nā ‘āina ho‘opulapula kanu mea kanu i māhelehele hou ‘ia a kūkulu ‘ia i kaiāhome. Loa‘a ma kahi o 3,520 po‘e kānaka i loko o kēia wahi lawelawe. Loa‘a ‘elua mau wahi ho‘okaomi i loko o kēia wahi lawelawe, kahi 825 a me kahi 677. ‘O kekahi mea hou aku, ho‘opili pū ‘ia kahi lawelawe o Lāwa‘i me kahi lawelawe o Kalāheo, he ‘ehā ona mau wahi ho‘okaomi: Kahi 1290, kahi 1222, kahi 1112, a me kahi 886.

Loa‘a ‘ehā mau luawai e ho‘olako ana i ka wai i kēia wahi lawelawe: Ka Luawai 22 o Lāwa‘i, ka Luawai Helu 2 o Lāwa‘i, ka Luawai Helu 2 o Pīwai, a me ka Luawai Helu 3 o Pīwai ke nānā ‘ia nā palapala‘āina a ka ‘Oihana Wai o ke Kalana ‘o Kaua‘i. Lawelawe ka Luawai 22 i kahi o Lāwa‘i-‘Ōma‘o i loko o kahi 677. Ho‘ohana ‘ia kekahi pauma i ho‘okū ‘ia ma lalo o ka ‘ili wai e ho‘opiha ai i ka pahu wai kimeki 0.25 MG ka nui o Lāwa‘i. Lawelawe ka Luawai Helu 2 o Lāwa‘i i ke Awāwa o Lāwa‘i i kahi 825. Ho‘ohana pū ‘ia kekahi pauma i ho‘okū ‘ia ma lalo o ka ‘ili wai e ho‘opiha ai i ka pahu wai Andrade he 0.03 MG ka nui he pahu wai kila i kīpapa ‘ia i ke aniani a me ka pahu wai i kīpapa ‘ia i ke kelemānia. Lawelawe nā Luawai Helu 2 me ka Helu 3 o Pīwai i kahi o ‘Ōma‘o i kahi 677.

‘O nā paipu nui loa no nā luawai ‘elua o Lāwa‘i, he 12 ‘īniha ka nui aia i loko o Alaloa Kaumuali‘i. ‘O nā luawai ‘elua o Pīwai, he mau paipu nō ho‘i ko lāua he 12 ‘īniha ka nui i loko o Alaloa Kaumuali‘i a me Ala ‘Ōma‘o. Loa‘a kekahi paipu 8 ‘īniha ma Alaloa Kaumuali‘i e ho‘opili pū ana i ka hana o Lāwa‘i-‘Ōma‘o me ka hana

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o Kalāheo. He mau ‘ano nō o ka nui o nā makahiki ke kahiko o nā paipu i loko o ka hana māhelehele wai, a kūkulu ‘ia nā paipu kahiko loa i ka 1953 a kūkulu ‘ia nā koena ma hope o ka 1960.

5. Kōloa-Po‘ipū

Ho‘ohui ‘ia i loko o kahi o Kōloa-Po‘ipū nā hōkele a me nā kaiāhome i kokoke a i ‘ole ma ke kapa kai nō a pēia nō ā puni ke kaona ‘o Kōloa. Loa‘a ma kahi o 5,310 po‘e kānaka ma loko o kēia wahi lawelawe. Loa‘a ‘elua mau wahi ho‘okaomi ma loko o kahi lawelawe o Kōloa-Po‘ipū, ‘o kahi 366 a me kahi 245.

Aia i loko o kahi lawelawe o Po‘ipū nā hanana kūkulu hale he nui. Loa‘a ‘eono mau kumu wai e ho‘olako ana i kēia wahi lawelawe ke nānā ‘ia nā palapala‘aina a ka ‘Oihana Wai o ke Kalana ‘o Kaua‘i:

- Ka Luawai E o Kōloa
- Ka Luawai 16A o Kōloa
- Ka Luawai 16B o Kōloa
- Ka Luawai C o Kōloa
- Ka Luawai D o Kōloa
- Ka Luawai F o Kōloa

Ho‘ohana ka Luawai E o Kōloa i kekahī pauma huila kuinao papakū e ho‘opiha ai i ka Pahu Wai #1 o Po‘ipū a lawelawe ‘ia kahi o Po‘ipū i loko o kahi 245. Ho‘ohana ka Luawai 16A i kekahī pauma huila kuinao papakū e ho‘opiha ai i Pahu Wai o Pa‘anau he 0.25 MG ka nui nāna e lawelawe pū i kahi o Po‘ipū i loko o kahi 245. Ho‘ohana ka Luawai 16B o Kōloa i kekahī pauma i ho‘okū ‘ia ma lalo o ka ‘ili wai e ho‘opiha ai i ka Pahu Wai o Kōloa he 1.0 MG ka nui nāna e lawelawe i kahi o Kōloa i loko o kahi 366. Ho‘ohana ka Luawai C o Kōloa i kekahī pauma huila kuinao e ho‘opiha ai i ka Pahu Wai #2 o Po‘ipū Helu 2 o Māhā‘ulepū aia i loko o kekahī pahu wai kimeki he 1.5 MG ka nui nāna e lawelawe i kahi o Po‘ipū i loko o kahi 245. Lawelawe ka Luawai F o Kōloa i kahi 245.

‘O nā paipu ho‘oholo wai nui mai kēia mau luawai ā hiki i ka hana māhelehele wai, he mau paipu 8 īniha ka nui e moe ana i loko o Ala Wailā‘au. ‘O nā paipu i loko o ka hana māhelehele wai, he mau paipu i kīpapa ‘ia i ke kini a me ka hao i hō‘omo‘omo ‘ia i kūkulu ‘ia ma waena o ka 1924 a me ka 1937.

6. Puhi-Līhu‘e-Hanamā‘ulu

Aia i loko o kahi lawelawe o Puhi-Līhu‘e-Hanamā‘ulu ke kahua mokulele o Līhu‘e, ke awa ho‘ouka ukana, nā wahi hui hana, ka Haukapila Wilikoki, he mau hōkele, nā

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wahi aupuni a me nā hui hana, a me kekahī mau kaiāhome. Loa‘a ‘elima mau wahi ho‘okaomi i loko o kēia wahi lawelawe:

- Kahi 510
- Kahi 393
- Kahi 295
- Kahi 173
- Kahi 319

Ho‘olako ‘ia kahi lawelawe e kēia mau kumu wai hana nui he 10 ke nānā ‘ia nā palapala‘āina a ka ‘Oihana Wai o ke Kalana ‘o Kaua‘i:

- Ka Luawai #2 o Puhi
- Ka Luawai #3 o Puhi
- Ka Luawai #4 o Puhi
- Ka Luawai #1 o ke KCC ma Puhi
- Kilohana A
- Kilohana B
- Kilohana C
- Kilohana G
- Kilohana I
- Ke Ana Puka ‘o Garlinghouse

‘O kēia nā kumu wai hou a‘e, akā, pau ka ho‘ohana ‘ia mai Malaki mai o ka 2001: Ke Ana Puka ‘o Koko‘olau, Ka Luawai #1 o Puhi, ka Luawai 51 & 5b o Puhi, a me ka Luawai F o Kolohana.

Aia ka hapa nui o kēia mau kumu wai ma nā wahi ho‘okaomi o uka a na ia mau mea e ho‘olako i nā wahi ma kai ma o nā pani nāna e ho‘ēmi i ka pihana wai (pressure reducing valve: PRV). Ho‘ohana ka Luawai #2 o Puhi i kekahī pauma huina kuinao papakū e ho‘oholo ai i ka wai i loko o ka pahu wai “393” o ke KCC he 1.0 MG ka nui nāna e lawelawe i kahi o Līhu‘e-Hanamā‘ulu i loko o kahi 393. Ho‘ohana nā Luawai #3 a me ka #4 i ka pauma huila kuinao papakū e ho‘oholo ai i ka wai i loko o nā pahu wai ‘elua #1 & #2 o ke Grove Farm nāna e lawelawe i ko Nāwiliwli po‘e i loko o kahi 295. Lawelawe ka Luawai #1 o ke KCC ma Puhi i kahi 510 me ka Pahu Wai 1 o ke KCC he 0.5 MG ka nui. Lawelawe pū ke Kilohana A i kahi o Puhi i loko o kahi 510 a ho‘ohana ‘ia kekahī pauma huila kuinao papakū e ho‘opiha ai i ka Pahu Wai kimeki 2 o ke KCC. Lawelawe ke Kilohana B & C i kahi o Līhu‘e-Hanamā‘ulu i loko o kahi 393. Na ia mau mea e ho‘opiha i nā Pahu Wai Kila #1 & #2 o Līhu‘e, a he mau pahu

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wai kila ia mau mea he 1.0 MG ka nui. Ho‘ohana ke Kilohana G i ka pauma huila kuinao papakū e ho‘opiha ai i ka Pahu Wai Hou o Nāwiliwili he 1.0 MG ka nui a lawelawe ‘ia kahi o Nāwiliwili-Niumalu i loko o kahi 173.

He mau ‘ano nō o ka nui o nā paipu ho‘oholo wai nui aia ma waena o ka 16 ‘īniha a me ka 12 ‘īniha a aia ma loko o Alaloa Kaumuali‘i. He mau ‘ano nō ho‘i o ka nui o nā makahiki ke kahiko o nā paipu i kūkulu ‘ia ma waena o ka 1926 a me ka 1935, a kūkulu ‘ia ke koena ma hope o ka 1946. Ua hala loa ‘ē ka wā pa‘a pono o ua mau paipu nei he 50 makahiki ka lō‘ihī ma‘amau a he pono nō e kuapo ‘ia.

7. Wailua-Kapa‘a

Ho‘ohui ‘ia i loko o kahi lawelawe o Wailua-Kapa‘a nā hōkele, nā hui hana, nā kula, nā haukapila, a me nā kaiāhome kūlanakauhale nui ma ke alaloa a ma Ala Kuamo‘o a me Ala Kawaihau. Loa‘a nō ho‘i nā ‘āina ho‘opulapula kahiko ma waenakonu o kahi ‘alu e ho‘olilo ‘ia nei i kaiāhome. Loa‘a Ewalu (8) mau wahi ho‘okaomi i loko o kahi lawelawe o Wailua-Kapa‘a:

- Kahi 605
- Kahi 538
- Kahi 530
- Kahi 428
- Kahi 313
- Kahi 268
- Kahi 233
- Kahi 214

He ‘umi mau kumu wai nō e ho‘olako nei i ka wai i kēia wahī lawelawe:

- Ka Luawai A & B o Wailua Homestead
- Ke Ana Puka ‘o ‘Ākulikuli
- Ke Ana Puka o Makaleha
- Ka Luawai 1 & 2 o Kapa‘a Homestead
- Ke Ana Puka ‘o Moelepe
- Nonou 9-1A
- Nonou 9-1B
- Nonou 9-1C

Ho‘ohana ka Luawai A a me ka B o Wailua Homestead i nā pauma i ho‘okū ‘ia ma lalo o ka ‘ili wai e ho‘opiha ai i ka Pahu Wai o ke Kahua o ke Kulanui o Hawai‘i a

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me ka Luawai #3 o ke kahua o Wailua Homestead. He 0.25 MG ka nui o ia mau pahu wai a lawelawe ‘ia kahi 605. Ho‘olako ke Ana Puka ‘Ākulikuli i ka Pahu Wai o Wailua Homestead he 0.5 MG ka nui a lawelawe ‘ia ‘o Wailua Homestead i loko o kahi 538. Ho‘olako ke Ana Puka o Makaleha i ka pahu wai o Pu‘upilo he 0.125 MG ka nui nāna e lawelawe pū i kahi 605. Ho‘ohana ka Luawai 1 o Kapa‘a Homestead i kekahi pauma ho‘okū ‘ia ma lalo o ka ‘ili wai e ho‘oholo ai i ka wai i loko o ka pahu wai o Makaleha he 1.0 MG ka nui a nāna e lawelawe iā uka o Kapa‘a Homestead i loko o kahi 530. Ho‘ohana ka Nounou 9-1A a me ka Nounou 9-1B i nā pauma huila kuinao papakū e ho‘opihai ai i ka Pahu Wai o Nounou he 2.0 MG ka nui a lawelawe ‘ia nā wahi ma kapa kai i loko o kahi 214. Ho‘ohana pū ka Nounou 9-1C i kekahi pauma huila kuinao papakū e ho‘opihai ai i ka pahu wai Ornellas he 0.2 MG ka nui nāna e lawelawe iā kai o Kapa‘a Homestead i loko o kahi 313.

He mau ‘ano nō o ka nui o nā makahiki ke kahiko o nā paipu o ka hana māhelehele wai a kūkulu ‘ia kekahi o nā paipu ma mua o ka 1930 a kūkulu ‘ia ke koena ma hope o ka 1945.

8. Anahola

Ho‘ohui ‘ia i loko o kahi lawelawe o Anahola nā kaiāhome a me ka ‘āina ho‘opulapula i ‘ona ‘ia o ka ‘Oihana ‘Āina Ho‘opulapula Hawai‘i (Department of Hawaiian Homelands: DHHL). Ho‘ohui pū ‘ia i loko nā ‘āpana ‘āina kaiāhome a me kahi kanu mea kanu i ‘ona ‘ia ma kahi o ke Awawa o Anahola. Loa‘a ma kahi o 2,170 po‘e kānaka i loko o kēia wahi lawelawe. He hana ku‘ikahi ka ‘Oihana Wai me ka DHHL no ka ho‘omalu ‘ana i ka hana wai, a ‘ona ‘ia kekahi hapa e kēlā a i ‘ole kēia ‘oihana. Loa‘a ho‘okahi wahi ho‘okaomi ma loko o kēia wahi lawelawe, ‘o ia kahi 288.

Ho‘olako ‘ia kahi lawelawe o Anahola e ka Luawai “A” o Anahola a me ka Luawai “B” o Anahola. Ho‘ohana ka Luawai “A” o Anahola i kekahi ana puka paipu wai e ho‘opihai ai i ka Pahu Wai o Anahola he 0.15 MG a ho‘ohana ka Luawai “B” o Anahola i kekahi pauma i ho‘okū ‘ia ma lalo o ka ‘ili wai e ho‘opihai ai i ka Pahu Wai Hou #2 o Anahola he 0.5 MG ka nui. He pahu wai kimeki ia mau pahu wai ‘elua nāna e lawelawe i kahi 288.

‘O nā paipu ho‘oholo wai nui mai ia mau paipu wai ‘elua mai, he mau paipu 12 ‘īniha ka nui e holo ana mai Ala Kalalea a me ke Alaloa Kūhiō. He mau ‘ano nō o ka nui o nā makahiki ke kahiko o nā paipu i loko o ua hana māhelehele wai nei a kūkulu ‘ia kekahi mau paipu i loko o ka 1929 a kūkulu ‘ia ke koena ma hope o ka 1956.

9. Moloa‘a

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Ho‘ohui ‘ia i loko o kahi lawelawe o Moloa‘a nā kaiāulu kua‘āina o Mola‘a a me Anahola. ‘O kēia kahi lawelawe li‘ili‘i loa he ‘elua wale nō ona kaiāhome aia i loko o ua wahi nei ho‘okahi wahi ho‘okaomi, ‘o ia kahi 292. Na kekahi kanaka nona kekahi ‘āpana ‘āina e ho‘oholo i ka luawai o ka Moku‘āina mai laila mai e kū‘ai ‘ia ai i nā kānaka o kēia mau kaiāhome a me kekahi mau hui mahi ‘ai ma ia wahi. Na ka Luawai Helu 1 a me ka 2 o Moloa‘a e ho‘olako i ka wai i kēia wahi me kekahi pahu mālama wai he 5,000 kālani ka nui ke nānā ‘ia nā palapala‘āina a ka ‘Oihana Wai o ke Kalana ‘o Kaua‘i. Aia i loko o ka hana māhelehele wai nā paipu PVC i kūkulu ‘ia i ka 1985.

10. Kīlauea-Waipakē-Kalihiwai

Ho‘ohui ‘ia i loko kahi lawelawe o Kīlauea-Waipakē-Kalihiwai ke kaona o Kīlauea a me kekahi mau kaiāhome mahi ‘ai e waiho ana mai uka a i kai o ke alaloa. Loa‘a ma kahi o 3,760 po‘e kānaka i lawelawe ‘ia ma kēia wahi a ‘ekolu nō wahi ho‘okaomi: Kahi 637, kahi 466, a me kahi 566.

Na ka Luawai Helu 1 a me ka 2 o Kīlauea e ho‘olako i ka wai i kēia wahi lawelawe. Ho‘ohana ka Luawai #1 o Kīlauea i kekahi pauma huila kuinao papakū e ho‘opihai ai i nā Pahu Wai ‘elua he 0.25 MG ka nui, ‘o ia nā Pahu Wai #1 & #2 e lawelawe ana i kahi o Kīlauea-Kalihiwai i loko o kahi 466.

Na ke kahua pauma ho‘onui o Kalihiwai e ho‘opihai i ka pahu wai o ke kualono o Kalihiwai he 0.1 MG ka nui. Nāna e lawelawe i kahi o uka o Kalihiwai i loko o kahi 637. Na ke kahua pauma ho‘onui o Waipakē e ho‘opihai i ka pahu wai o Waipakē he 0.1 MG ka nui a nāna e lawelawe i kahi 566. Na ke kahua pauma ho‘onui o Nāmāhana e ho‘opihai i ka pahu wai o Nāmāhana he 0.1 MG ka nui, akā, pau kona ho‘ohana ‘ia.

Aia nā paipu ho‘oholo wai nui i loko o ke Alaloa Kūhiō, Ala Hālaulani, Ala Kāhiliholo, a he 8 ‘īniha ka nui. Ua kūkulu ‘ia nā paipu kahiko loa o ka hana māhelehele ai i ka 1972.

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Ka Hana Wai

11. ‘Anini

Ho‘ohui ‘ia kahi lawelawe o ‘Anini nā kaiāhome o Princeville. Lawelawe ‘ia kēia wahi e ka Princeville Utilities, he hui i ‘ona ‘ia. Loa‘a paha 110 po‘e kānaka e noho nei ma loko o kēia wahi lawelawe. Na ka ‘Oihana Wai e ho‘opa‘a i kekahi palapala ‘aelike me ka Princeville Utilities no ka ho‘olako ‘ana i ka wai i kahi lawelawe o ‘Anini. ‘A‘ohe kahua mālama wai o ka ‘Oihana Wai ma kēia wahi lawelawe a aia i loko o kēia hana māhelehele wai he mau paipu PVC. Ua kūkulu ‘ia nā paipu kahiko i ka 1984.

12. Hanalei

Ho‘ohui ‘ia i loko o kahi lawelawe o Hanalei nā kaiāhome a me nā hui o ke kaona li‘ili‘i. Loa‘a ma kahi o 1,020 po‘e kānaka e noho nei i loko o kēia wahi lawelawe. Loa‘a ho‘okahi wahi ho‘okaomi, ‘o ia kahi 255, i loko o kēia wahi lawelawe. Na ka Luawai 73 o ke kualono o Maka e ho‘olako i ka wai i kēia wahi lawelawe a aia ‘elua nō pahu wai kimeki, ‘o ia Pahu Wai o Maka he 0.25 MG ka nui a me ka Pahu Wai o Hanalei he 0.05 MG ka nui ke nānā ‘ia nā palapala‘āina a ka ‘Oihana Wai o ke Kalana ‘o Kaua‘i. Holo ka paipu ho‘oholo wai nui i loko o ke Alaloa Kūhiō a he paipu 8 ‘iniha kona nui. He mau ‘ano nō o ka nui o nā makahiki o nā paipu i loko o ka hana māhelehele wai a kūkulu ‘ia kekahi i ka 1924 a kūkulu ‘ia ke koena i ka 1962.

13. Wainiha-Hā‘ena

Ho‘ohui ‘ia i loko o kahi lawelawe o Wainiha-Hā‘ena nā kaiāhome ma ke kapa kai a i loko nō ho‘i o ke awāwa o Wainiha. Loa‘a ma kahi o 1,120 po‘e kānaka e noho nei ma kēia wahi lawelawe. ‘Elua nō wahi ho‘okaomi, ‘o kahi 224 a me kahi 144.

Ho‘olako ‘ia ka wai i kēia wahi lawelawe e ka Luawai 66 o Hā‘ena, ‘o ia ka Luawai Helu 67 o Wainiha a me ka Luawai Helu 2 o Wainiha ke nānā ‘ia nā palapala‘āina a ka ‘Oihana Wai. Ho‘ohana ka Luawai Helu 66 o Hā‘ena i kekahi pauma huila kuinao papakū e ho‘opiha ai i ka Pahu Wai Kila o Hā‘ena he 0.1 MG ka nui a nāna e lawelawe i kahi o Hā‘ena i loko o kahi 144. Nāna nō ho‘i e ho‘opiha i kekahi pahu wai kila he 6,500 MG ka nui. Ho‘ohana ka Luawai #67 o Wainiha i kekahi pauma i ho‘okū ‘ia ma lalo o ka wai e ho‘opiha ai i ka Pahu Wai lā‘au redwood nāna e lawelawe i ke Awāwa o Wainiha i loko o kahi 224.

Holo ka paipu wai nui i loko o ke Alaloa Kūhiō a he paipu ia 8 ‘īniha ka nui. Ua kūkulu ‘ia nā paipu i loko o ka hana māhelehele wai i ka 1960.

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Ka Hana Wai

1.3 Nā Hana Wai i ‘Ona ‘ia e Kū nei

Na ka Māhele Wai Inu Palekana o ka Papa Ola o ka Moku‘āina e ho‘omalu ma luna o ‘eiwa mau hana wai ma Kaua‘i, a hō‘ike ‘ia i loko Ki‘i 1.2.1 a ho‘ākāka ‘ia ko lākou mau ‘ano ma lalo nei.

1. Grove Farm

He hui kūkulu kaiāulu a ho‘okele waiwai ka Grove Farm Company i ho‘okumu ‘ia i Līhu‘e nāna e ‘ona ma kahi o 38,000 mau ‘eka mai Hanamā‘ulu ā hiki i Kōloa. He māhele ka Waiahi Water Company o ka Grove Farm, a ho‘ohui ‘ia me ka ‘Oihana Wai o ke Kalana no ke kūkulu ‘ana i ka luawai ho‘oki‘o o Kapaia i kumu wai. Ma ka 2005, ua wehe ka Waiahi Water Company i ke kahua ho‘oma‘ema‘e wai o ka Grove Farm (Water Purification Plant: GFWPP) ma Kaua‘i.

Ho‘ohana ka GFWPP, ka i ho‘oholo ‘ia e ka Aqua Engineers, Inc., i nā pauma wai ‘ino no ka pauma ‘ana i ka wai mai loko mai o ka luawai ho‘oki‘o o Kapaia ma o ka hana ‘auwai o Hanamā‘ulu ā i loko ke kahua ho‘oponopono wai ‘ino nāna e mālama 1.0 MG o ka lā no ka hana ho‘oma‘ema‘e a me kekahī pahu wai ho‘ohuihui chlorine he 264,000 kālani ka nui. Pauma hou ‘ia ka wai i ho‘oma‘ema‘e ‘ia i loko o ka hana wai Līhu‘e-Hanamā‘ulu-Puhi a ka ‘Oihana Wai e nā pauma wai ma‘ema‘e, a lawelawe ‘ia ma kahi o 15,000 po‘e noho. Kuhi ‘ia ka nui o kēia manawa he 3.0 MG o ka lā a kuhi ‘ia ho‘omaha ‘ia ho‘okahi hana ho‘oma‘ema‘e wai. I ka ho‘omaka ‘ana, na ka Grove Farm i uku no ke kūkulu ‘ana, a ho‘oholo ‘ia ke kahua i kēia manawa e nā limahana o ka Grove Farm.

Kū‘ai ka ‘Oihana Wai i ka wai mai ka GFWPP mai ma ke kāki kū mahina a pēlā e uku ‘ia ai ka ho‘oholo ‘ana, e pēia pū ka ho‘oka‘a ‘ia ‘ana o nā ‘ai‘ē no ke kūkulu ‘ana, ka ho‘ihō‘i ‘ia ‘ana o ka lilo i kinohi a ka Grove Farm, a me ka waiwai puka. Pēlā ho‘i i kauoha ai ka ‘Oihana Wai i ka hana noi‘i, ‘o ka Needs Assessment Study i komo pū ai kekahī wehewehe ‘ano no ka ho‘oponopono hou ‘ana i ke kahua. Oia mau nō ke kākau ‘ia ‘ana o ua hana noi‘i nei, a ‘a‘ole na‘e i ‘āpono ‘ia e ka ‘Oihana Wai, akā, kuhi ‘ia he \$8.13 miliona ke kumu kū‘ai no ka ho‘oponopono hou ‘ana i ka hana e kū nei e ho‘onui ai i ka hana ā piha 60 pakeneka hou aku, a he \$31.725 miliona ke kumu kū‘ai no ka ho‘onui ‘ana i ka hana e kū nei ā pālua ka nui aku. ‘A‘ole i helu ‘ia i loko o kēlā me kēia kuhi ka lilo no ke kū‘ai ‘āina ‘ana a i ‘ole ka ho‘onui hou ‘ana i ka ho‘oholo ‘ana i ka wai ma waena o ka hana wai a ka GFWPP a me ka ‘Oihana Wai. Na kēia hana noi‘i nō ho‘i e loiilo i ke ka‘ana like ‘ia ‘ana o ka uku ‘ana a me ka mea e pakele ai ka ‘Oihana Wai.

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Ka Hana Wai

2. Princeville

He hana wai no ka lehulehu ka hana wai o Princeville water system (Hana Wai Lehulehu Helu 428) i ‘ona a ho‘oholo ‘ia e ka Princeville Utilities Co., Inc. Aia kēia hana wai ma ka ‘ao‘ao ‘ākau o ka mokupuni ‘o Kaua‘i. Na ka Papa Ola o ka Moku‘āina i hana i kekahī Loiloī Wai Ma‘ema‘e o ka hana wai o Princeville a ua ho‘okumu ‘ia kēia mau ‘ike ma lalo nei ma luna o ka Hō‘ike Wai Ma‘ema‘e (Sanitary Survey Report) o ka lā 25 o Malaki, 2009. ‘O ka ‘awelika o ka nui o ka makemake o ka lā no ka hana wai o Princeville, he 1.18 miliona kālani o ka lā (mgd) a loa‘a 1,029 mau hui ‘ana me ka hana wai e lawelawe nei ma kahi o 1,698 po‘e kānaka i Princeville, Kalihi Wai, a me ‘Anini Vista, hui pū ‘ia me ka hōkele, ‘o ka Princeville Resort a me nā hale pā‘ani kalapu. Loa‘a ka wai i ka hana wai o Princeville mai ‘ekolu mau luawai mai: Luawai Helu 1 (Luawai Moku‘āina Helu 2 2-1126-01), Luawai Helu 2 (Luawai Moku‘āina Helu 2-1126-02), a me Luawai Helu 4 (Luawai Moku‘āina Helu 2-1127-02).

Ho‘ohana ka hana wai o Princeville i nā pauma huila kuinao papakū ma ka Luawai Helu 1 a me 2 a me kekahī pauma ho‘okū ‘ia ma lalo o ka wai ma ka Luawai Helu 4. Ho‘oma‘ema‘e ‘ia ka wai o kēlā me kēia luawai ma kona wahi nō e kū nei me nā pauma ana Stenner peristaltic no ka ho‘oponopono ‘ana i ka wai me ka sodium hypochlorite. Pauma ‘ia ka wai o ka Luawai Helu 1 a me 2 i loko o ka luawai ho‘oki‘o 411, he pahu wai kimeki i ho‘oikaika ‘ia he 1.5 MG kona nui. Pauma ‘ia ka wai mai ka Luawai Helu 4 i loko o ‘elua hou mau pahu wai kimeki i ho‘oikaika ‘ia: Ka Luawai Ho‘oki‘o 580A a me ka 580B. He mālama ka Luawai Ho‘oki‘o 580A he 50,000 kālani wai a pahu wai ka Luawai Ho‘oki‘o 580B nāna e mālama 0.5 MG. Hiki nō ho‘i ke pauma ‘ia ka Luawai Helu 1 a me 2 i loko o nā Luawai Ho‘oki‘o 580A a me ka 580B e kekahī kahua pauma ho‘onui ma ke Alaloa Kūhiō. I kekahī wā kokoke i hala a‘ela, ua kuapo ‘ia ‘elua mau pauma 33 kālani o ka minuke ma ke kahua pauma ho‘onui me kekahī pauma he 400 kālani o ka minuke.

He hana ‘umekaumaha ke ‘ano o ka hana māhelehele wai o Princeville mai nā pahu wai ‘ekolu mai a hui pū ‘ia nā kahua PRV ‘elua (ka hale kinai ahi a me Kamehameha). He laulā ka nui o ke kaomi wai i loko o ka hana māhelehele wai mai ke 55 paona o ka ‘īniha kuea ā ke 90 paona o ka ‘īniha kuea.

Ke ho‘olālā ‘ia nei e pa‘a ka Luawai Helu 5 a me ka luawai ho‘oki‘o hou he 1.2 MG ka nui i ka pi‘i hou ‘ana aku o ka makemake. Ua wili ‘ia ua luawai nei a ho‘ā‘o ‘ia nō, akā, ‘a‘ole na‘e i kūkulu ‘ia.

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3. Pacific Missile Range Facility

He pāpū pū‘ali koa ke kahua ‘o ka Pacific Missile Range Facility (PMRF) ma lalo o ka ‘Oihana Moku Kaua o ‘Amelika Hui ‘ia aia ma ka ‘ao‘ao komohana o ka mokupuni ‘o Kaua‘i. ‘Ona a ho‘oholo ‘ia ka hana wai o ka PMRF (Hana Wai Lehulehu Helu 430) e ka ‘Oihana Moku Kaua o ‘Amelika Hui ‘ia. Ua mālama ka Papa Ola o ka Moku‘āina i kekahi loiilo wai ma‘ema‘e o ka hana wai a ka PMRF a ho‘okumu ‘ia ka ‘ike ma lalo nei ma luna o ka Hō‘ike Loilo Wai Ma‘ema‘e o ka lā 28 o ‘Aukake, 2009. Aia ma kahi o ka 0.42 miliona kālani o ka lā (mgd) ka nui o ke holo ‘ana o ka wai a loa‘a 185 mau hui ‘ana i loko o kēia hana. He loa‘a ka wai o ka hana a ka PMRF mai ‘elua mau kumu – he kumu luawai a me kekahi hui ‘ana me ka hana wai o ka ‘Oihana Wai ma Kekaha. Ho‘ohui ‘ia i loko o nā kahua hana wai a ka PMRF, aia ma ke kahua o ka PMRF nā mea a pau, ‘elua mau hale ho‘oholo mekanika, ‘ehā mau pahu mālama wai, a me ‘elua mau pahu wai ho‘okaomi pneumatic.

Ho‘ohana ka hana wai o ka PMRF ‘ekolu mau pauma ho‘okū ‘ia ma lalo o ka wai e huki ana i ka wai mai ke Ana Puka mai o Mānā aia ma kahi o kahi ho‘āhu pōkā o ke kualono o Kamokala. Pauma ‘ia ka wai ma kahi o ‘elua mile ka lō‘ahi i loko o ke kahua ho‘oponopono wai ‘ino o ka PMRF ma kēlā kahua pāpū kahi e ho‘oma‘ema‘e ‘ia ai me ke chlorine, a ho‘ohuihui ‘ia me ka fluoride, a laila, mālama ‘ia i loko o kekahi pahu wai kila he 0.42 MG ka nui a i ‘ole he 0.10 MG ka nui. Kahe ka wai mai kēia mau pahu wai i loko o ka hana māhelehele wai o ka PMRF. Ho‘olawa ‘ia ma kahi o ke 80% o ka makemake o ka PMRF e ke Ana Puka o Mānā. Ho‘olako ‘ia ka 20% i koe e kekahi hui ‘ana me ka hana wai o ka ‘Oihana Wai o ke Kalana ma Kekaha. Ho‘oma‘ema‘e ‘ia ka wai i ho‘olako ‘ia e ka ‘Oihana Wai a ho‘ohuihui ‘ia ka fluoride, a laila, pauma ‘ia i loko o ‘elua mau pahu wai kila he 0.01 MG ka nui.

Lawelawe ka hana wai o ka PMRF 1,200 po‘e kānaka i wai inu a i mea kinai ahi ma ke kahua holo‘oko‘a o ka pāpū PMRF. ‘O nā ‘ano o ka makemake ma ka PMRF, he mekanika, hui hana, kaiāhome, pāka, hale ‘aina, kahua pā‘ina/hō‘omoana, a me ka hana wai ‘ana i ka meakanu. Ho‘ohana ka hana wai o ka PMRF ‘elua mau pauma ho‘onui a me kekahi pahu wai hydro-pneumatic he 0.01 MG ka nui e mālama ai i ke kaomi wai o ka hana māhelehele wai he 40-60 paona o ka ‘īniha kuea. Ke pono ka wai kinai ahi, loa‘a ‘elua mau pauma nui keu e hemo mai ana ke emi ke kaomi wai ma lalo o ka 20 paona o ka ‘īniha kuea.

‘A‘ohe hanana ho‘oponopono waiwai i ho‘olālā ‘ia.

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Ka Hana Wai

4. Pākala
He hana wai kaiāulu ka hana wai o Pākala no kauhale o Pākala, a ‘ona a ho‘oholo ‘ia e ka Gay and Robinson Sugar Plantation. Lawelawe ‘ia ma kahi o 1,500 po‘e kānaka. I loko o kēia kaiāulu nā hale no nā limahana a me ka po‘e ritaia o ka hale mahi kō a me ka pā hānai pipi.
5. Kāhili Mountain Park
Lawelawe ka hana wai o Kāhili Mountain Park, ka i ‘ona ‘ia e ka ‘Ekalesia Ho‘omana Pō‘aono a ho‘oholo ‘ia e ka Aqua Engineers, Inc., i nā hale ho‘omaha malihini, ke kula, ‘o Kahili Adventist School, a me nā hale noho i ‘ona ‘ia e ka ‘Ekalesia Ho‘omana Pō‘aono.
6. Keālia
Lawelawe ka hana wai o Keālia, ka i ‘ona ‘ia e ka hui, ‘o Keālia Water Company Holding a ho‘oholo ‘ia e ka Aqua Engineers, Inc., ma kahi o 260 po‘e kānaka ma kekahī kaiāulu unincorporated ma waho o ke Alaloa Kūhiō ma kahi kokoke i ke kapa kai.
7. Ka Pāka Moku‘āina o Kōke‘e
Ho‘olako ka hana wai o ka Pāka Moku‘āina o Kōke‘e, ka i ‘ona a ho‘oholo ‘ia e ka ‘Oihana Kumuhonua ‘Āina (DLNR) ma lalo o ka Māhele Pāka, i ka wai i nā hale lua li‘ili‘i a me ka paipu wai ‘au‘au ma nā pāka kūwaho.
8. Ka Pāka Moku‘āina o Polihale
Ho‘olako ka hana wai o ka Pāka Moku‘āina o Polihale, ka i ‘ona a ho‘oholo ‘ia e ka Māhele Pāka o ka DLNR o ka Moku‘āina, i ka wai i nā hale lua li‘ili‘i a me ka paipu wai ‘au‘au ma nā pāka kūwaho.
9. Nā ‘Āpana Mahi ‘Ai o Anahola
Ma ka ‘ōlelo o ka Papa Hana o Kahi o Anahola (Anahola Regional Plan), ka i ho‘omākaukau ‘ia e ka ‘Oihana ‘Āina Ho‘opulapula Hawai‘i (DHHL) ma Iune 2010, he lawelawe ka hana wai o ka DHHL ma Anahola he 79 po‘e kū‘ai ma nā ‘āpana mahi ‘ai o ka DHHL a me kahi o Anahola Bay View. Aia ka po‘e noho ‘ē a‘e a pau ma ka hana wai o ka ‘Oihana Wai. Ho‘oholo ‘ia ka hana a ka DHHL e ka Aqua Engineers, Inc.

1.4 Ka Papa Hana Ho‘ohana Wai a me ka Papa Hana Kūkulu

Na ke Kānāwai Wai o ka Moku‘āina, Mokuna 174C, o nā Kānāwai i Ho‘ololi ‘ia o Hawai‘i (Hawai‘i Revised Statutes), i ho‘okumu i ka Papa Hana Wai o Hawai‘i i alaka‘i no ka ho‘okumu

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‘ana i nā papa hana ho‘olālā pono e pono ai no ka ho‘oponopono ‘ana i nā pilikia ma ka ho‘olako ‘ana a me ka mālama ‘ana i ka wai. He ho‘okahi māhele wale nō nā Papa Hana Kūkulu Ho‘ohana Wai o ke Kalana (County Water Use and Development Plans: WUDP) o ‘elima mau māhele o ka Papa Hana Wai o Hawai‘i.

‘O ke kumu o ka WUDP o ke Kalana, ‘o ia ka helu waiwai ‘ana i nā makemake a pau i wānana ‘ia ma kēlā me kēia kalana a me ka hō‘oia ‘ana i ka ho‘olawa ‘ia ‘ana o ka makemake o ke kalana i kēia wā e hiki mai ana i wai. He pono e ho‘opa‘a ka WUDP i ka māhelehele ‘ia ‘ana o ka wai i e lawa ai ka ho‘ohana ‘ia ‘ana ma ke kalana a pono e ho‘okō ‘ia nā lula alaka‘i no nā ‘ano pō‘ai like ‘ole a me ka ho‘ohana ‘āina ‘ana. Na ka WUDP e hō‘ike no ka ho‘olālā ‘ana no ka ho‘ohana ‘ia ‘ana o ka ‘āina a nāna e alaka‘i i ke Komikina ma ka ho‘oholo ‘ana i ka ‘ōlelo no ka māhelehele ‘ia ‘ana o ka wai a me nā noi i wai.

‘O ka WUDP hope o Kaua‘i, ua ho‘omākaukau ‘ia ma Pepeluali i ka 1990. Ua pau ka pono o nā ‘ike i loko o kēia WUDP no ke kahiko loa, a ua wānana ‘ia ka ho‘ohana ‘ia ‘ana o ka wai ā hiki i ka 2010, a ua nui ka loli o ka ho‘ohana ‘ia ‘ana o ka wai ma muli o ke pani ‘ia ‘ana o ka hale wili kō hope loa ma Kaua‘i nei i ka 2009.

Ke hana hou ‘ia mai nei nō ka WUDP o Kaua‘i i kēia manawa, a ho‘opa‘a ‘ia kona ho‘opau ‘ia ‘ana ma waenakonu o ka 2016.

Māhele 2. Polokalamu Hō‘ano Hou

2.1 Nā Makemake e Kū nei

He nui nō nā kahua e kū nei e pono ai e kuapo ‘ia a ho‘oponopono ‘ia paha ma muli o ko lākou kūlana pono ‘ole a i ‘ole no nā hemahema. E like me ia i koi ‘ia e ka HRS Māhele 46-143(1)(A), ua ho‘omākaukau ‘ia ka Needs Assessment Study and Facility Reserve Charge Update no ka hō‘ike aku i nā hemahema o kēia manawa ma nā hana kumu a me ka mālama ‘ana. Ua ho‘omākaukau ‘ia ka mana hope o ka Noi‘i Loiloi Makemake (Needs Assessment Study) no ka ‘Oihana Wai ma Nowemapa o ka 2013, akā, he ho‘ā‘o mua wale nō kona kūlana a ‘a‘ole na‘e i ‘āpono ‘ia e ka ‘Oihana Wai. Ua ho‘olako ‘ia ka wehewehe ‘ano o nā hemahema o kēia manawa i loko o ka ho‘ā‘o mua o ka Noi‘i Loiloi Makemake e nā limahana o ka ‘Oihana Wai i ka 2006. I loko o nā hana i hemahema i kumu wai a i ‘ole ma ka mālama ‘ana i ka wai, he pono e kūkulu ‘ia nā kahua hou e ho‘olako a mālama ai paha i ka nui aku o ka wai.

Hō‘ike ‘ia nā hana wai o ka ‘Oihana Wai i hemahema ke kumu wai a me ka mālama wai ‘ana ma ka Papa 2.1.1.

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 Ka Hana Wai

Papa 2.1.1 Nā Hemahema ma ke Kumu Wai a me ka Mālama Wai ‘ana e Kū nei (mālama ‘ia ka loiilo ‘ana ma ka 2006)

Hana Wai	Hemahema Kumu Wai e Kū nei	Hemahema Mālama Wai e Kū nei
Kekaha-Waimea	‘Ae (143 gpm)	‘Ae
Hanapēpē-‘Ele‘ele	‘A‘ole	‘A‘ole
Kalāheo	‘A‘ole	‘Ae
Lāwa‘i-‘Ōma‘o	‘A‘ole	‘Ae
Kōloa-Po‘ipū	‘A‘ole	‘Ae
Puhi-Līhu‘e-Hanamā‘ulu	‘A‘ole	‘A‘ole
Wailua-Kapa‘a	‘A‘ole	‘Ae
Anahola	‘Ae (111 gpm)	‘A‘ole
Moloa‘a	‘A‘OHE (‘A‘ohe kumu wai o ka ‘Oihana Wai)	‘Ae
Kīlauea-Waipakē-Kalihiwai	‘Ae (93 gpm)	‘Ae
‘Anini	‘A‘OHE (‘A‘ohe kumu wai o ka ‘Oihana Wai)	‘A‘OHE (‘A‘ohe kumu wai o ka ‘Oihana Wai)
Hanalei	‘Ae	‘Ae
Wainiha-Hā‘ena	‘Ae (67 gpm)	‘Ae

Kumu: Needs Assessment Study and Facility Reserve Charge Update, Leidos, Nowemapa 2013

Ma loko o ka ho‘ā‘o mua o ka Noi‘i Loilo Makemake o Nowemapa, 2013:

- He pono ma kahi o 21 pakeneka o ka Polokalamu Ho‘oponopono Waiwai (Capital Improvements Program: CIP) no nā hanana kumu wai e ho‘oponopono ai i nā hemahema kumu wai e kū nei.
- Kuhi ‘ia he pono 23 pakeneka o ka CIP no nā hanana mālama wai e ho‘oponopono ai i nā hemahema ma ka mālama wai ‘ana.
- Mahu‘i ‘ia e kuapo ‘ia ma kahi o 237 mile (o 399 mile ka huina) paipu i kūkulu ‘ia ma waena o ka 1921 a me ka 1980 ma muli o kona kahiko, ka popopo, a i ‘ole no ka lawa ‘ole o ka nui ke nānā ‘ia nā ana pale ahi o kēia manawa.
- He pono ma kahi o 20 pakeneka o ka Polokalamu Kuapo Waiwai (Capital Replacement Program: CRPL) a me nā lilo a pau o ka CIP e ho‘opau ai i nā hemahema e kū nei ma ka hana ho‘oholo wai.

He hanana kuapo nā hanana CRPL, akā, ho‘okūpono ‘ia ka nui o ka hanana e ho‘onui ai i ka mea e hiki ai, a nānā ‘ia ka māhele ho‘onui o kēia mau hanana e ho‘opau ai i nā hemahema ma ka ho‘oholo ‘ana i ka wai ma ka hana wai.

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Ho‘ohui ‘ia i loko o ka Ho‘opiha Wai Mālama o ke Kahua (Facility Reserve Charge: FRC) he māhele hō‘ai‘ē no ka po‘e kū‘ai hou ma kahi o ka māhele a lākou e uku ai e kōkua ai i ka ho‘opau ‘ana i nā hemahema e kū nei, a pēia pū no ka ho‘oponopono a me ke kuapo ‘ana i ke kumu wai a me ka mālama wai ‘ana, a me ka ho‘oka‘a ‘ai‘ē ‘ana kekahi nō nā hana lawelawe ma nā kahua e kū nei.

2.2 Nā Makemake i Wānana ‘ia

I loko o ka hō‘ike no ka Papa Hana Wai 2020, ua ho‘ohana ‘ia ka ‘ike no ka ho‘ohana ‘ia ‘ana o ka wai mai 1995 ā ka 1998, hui pū ‘ia me nā wānana no ka heluna kanaka a me ka ho‘ohana ‘ia ‘ana o ka ‘āina mai ka Papa Hana Laulā mai o Kaua‘i o ka 2000 e kūkulu ai i nā makemake wai o kēia mua aku i ka 2005, 2010, a me ka 2020. I loko o ka hō‘ike Papa Hana Wai 2020, ua kuhi ‘ia e ho‘omau nā ana ho‘ohana wai me ia nō mai ka 2000 ā ka 2020, a he emi ka wai i ana ‘ole ‘ia mai ka 25 pakeneka ā ka 15 pakeneka i ka hiki ‘ana mai o ka 2020.

Ma ka mana ho‘ā‘o o Nowemapa o ka 2013 o ka Noi‘i Loiloi Makemake, ua hō‘ulu‘ulu ‘ia nā wānana makemake wai no ka 2030 ma ka ho‘ohui ‘ana i nā wānana no ka heluna kanaka i loko o ka hō‘ike no ka Papa Hana Wai 2020 no nā makahiki 2020 a me ka 2050, a laila, ho‘ohui pū ‘ia nā ana ho‘ohana wai o ka 2020; hō‘ulu‘ulu ‘ia nā wānana no ka heluna kanaka a me ka ho‘ohana wai ‘ana mai ‘ō ā ‘ō o ka hana wai ma ka Papa 2.2.1.

Papa 2.2.1 Nā Wānana Heluna kanaka a me ka Ho‘ohana Wai

Makahiki	Heluna kanaka o Kahi Lawelawe	Wānana Ho‘ohana Wai (kālani o ka lā)
2000	54,800	
2020	68,880	17,794,000
2030	75,280	19,445,900

Kumu: Needs Assessment Study and Facility Reserve Charge Update, Leidos, Nowemapa 2013

Wānana ‘ia he pi‘i ka heluna kanaka o kahi lawelawe he 9 pakeneka ka ‘oi mai ka 2020 ā ka 2030.

Hō‘ike ‘ia nā hana wai o ka ‘Oihana Wai me nā hemahema i wānana ‘ia ma nā hana kumu wai a me ka mālama wai ma ka Papa 2.2.2.

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 Ka Hana Wai

Papa 2.2.2 Nā Hemahema Kumu Wai a me ka Mālama Wai i Wānana ‘ia

Hana Wai	Hemahema Kumu Wai o ka 2030 me ka ‘Ole o ka Nui Kumu Wai Hou	Hemahema Mālama Wai o ka 2030 me ka ‘Ole o ka Nui Mālama Wai Hou
Kekaha-Waimea	‘Ae	‘Ae
Hanapēpē-‘Ele‘ele	‘A‘ole	‘A‘ole
Kalāheo	‘Ae	‘Ae
Lāwa‘i-‘Ōma‘o	‘A‘ole	‘Ae
Kōloa-Po‘ipū	‘Ae	‘Ae
Puhi-Līhu‘e-Hanamā‘ulu	‘Ae	‘Ae
Wailua-Kapa‘a	‘A‘ole	‘Ae
Anahola	‘Ae	‘A‘ole
Moloa‘a	‘A‘OHE (‘A‘ohe kumu wai o ka ‘Oihana Wai)	‘Ae
Kīlauea-Waipakē-Kalihiwai	‘Ae	‘Ae
‘Anini	‘A‘OHE (‘A‘ohe kumu wai o ka ‘Oihana Wai)	‘A‘OHE (‘A‘ohe kumu wai o ka ‘Oihana Wai)
Hanalei	‘A‘ole	‘Ae
Wainiha-Hā‘ena	‘Ae	‘Ae

Kumu: Needs Assessment Study and Facility Reserve Charge Update, Leidos, Nowemapa 2013

Ua ho‘omākaukau ‘ia ka Papa Hana Laulā o Kaua‘i i Hō‘ano Hou ‘ia: Wehewehe ‘Ano a me na Wānana Ho‘okele Waiwai o ka Lehulehu (Kaua‘i General Plan Update: Socioeconomic Analysis and Forecasts: SAF) e ka SMS no ke Kalana ‘o Kaua‘i. ‘O ka SAF, ka i ho‘opuka ‘ia i Pepeluali, 2014, nāna e ho‘olako i nā wānana no ka heluna kanaka, nā kaiāhome, nā hana, a me ka hai ‘ana, ka heluna hale noho, ka heluna malihini kipa, a me ka heluna hale noho malihini no ke Kalana ‘o Kaua‘i mai ka 2013 ā ka 2035. Ma loko o ka SAF, ‘o ka heluna kanaka i wānana ‘ia no ke Kalana, he 74,693 no ka makahiki 2020 a he 83,828 no ka makahiki 2030, he 12 pakeneka ka pi‘i ‘ana.

He hō‘ike ka ho‘ohālike ‘ana no ka wānana no ka heluna kanaka ma waena o ka mana ho‘ā‘o o ka 2013 o ka Loiloi Makemake a me ka SAF he pi‘i a‘e ka SAF ma ka wānana heluna kanaka no ka 2020 a me ka 2030, a he pi‘i hou aku nō ho‘i ka heluna kanaka mai ka 2020 ā ka 2030. ‘O ka mana‘o o kēia, he emi mai nō paha nā hemahema kumu wai a me ka mālama wai i wānana ‘ia i hō‘ike ‘ia i kēia manawa e ka ‘Oihana Wai ma ka Papa 2.2.2. i ka nui o nā hemahema.

2.3 Nā Hanana Kahua Waiwai

Ua ho‘ākāka ka hō‘ike Papa Hana Wai 2020 inā hanana ho‘oponopono waiwai e ho‘oponopono ai i nā makemake o ka wā lō‘ahi e hiki mai ana i māhele o ke kūkulu ‘ia ‘ana o kona Polokalamu

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Ho‘oponopono Waiwai (Capital Improvements Program: CIP). Mai ka ‘āpono ‘ia ‘ana o ka hō‘ike Papa Hana Wai 2020 i loko o 2000, ua nui nā hanana o ia papa hana i kūkulu ‘ia. Ua hō‘ike ka hō‘ike Loilo Makemake o Nowemapa, 2013, i kekahī hō‘ike i hō‘ulu‘ulu a hō‘ano hou ‘ia o nā Hanana Kahua Waiwai, a hō‘ike ‘ia ma Papa 2.3.1.

Papa 2.3.1 Hō‘ulu‘ulu Hana Wai – Nā Hanana Kahua Waiwai ma ke ‘Ano o ka Hanana Hō‘ike ‘ia nā lilo ma ke kaukani o ke kālā

Hana Wai	Huina Hanana	Kumu Wai	Mālama	Ho‘oholo & Māhelehele	Nā Mea Like ‘Ole	Huina
Kekaha-Waimea	24	\$ 1,779	\$ 9,850	\$ 47,097	\$ 0	\$ 58,726
Hanapēpē-‘Ele‘ele	13	\$ 1,146	\$ 2,483	\$ 22,953	\$ 4,061	\$ 30,644
Kalāheo	12	\$ 3,939	\$ 5,175	\$ 33,607	\$ 7,714	\$ 50,434
Lāwa‘i-‘Ōma‘o	16	\$ 4,933	\$ 6,532	\$ 35,153	\$ 0	\$ 46,618
Kōloa-Po‘ipū	16	\$ 3,448	\$ 15,923	\$ 28,354	\$ 0	\$ 47,724
Puhi-Līhu‘e-Hanamā‘ulu	32	\$29,058	\$ 23,471	\$ 85,888	\$12,825	\$151,242
Wailua-Kapa‘a	40	\$15,967	\$ 35,856	\$ 98,258	\$ 164	\$150,244
Anahola	8	\$ 2,620	\$ 2,751	\$ 10,859	\$ 0	\$ 16,230
Moloa‘a	4	\$ 131	\$ 1,526	\$ 5,592	\$ 0	\$ 7,248
Waipakē-Kīlauea-Kalihiwai	17	\$ 3,284	\$ 11,120	\$ 40,289	\$ 655	\$ 55,348
‘Anini	3	\$ 66	\$ 0	\$ 8,522	\$ 0	\$ 8,587
Hanalei	10	\$ 3,327	\$ 1,791	\$ 12,201	\$ 639	\$ 17,959
Hā‘ena-Wainiha	13	\$ 2,765	\$ 5,535	\$ 14,144	\$ 0	\$ 22,444
HUINA NUI	208	\$72,460	\$122,013	\$442,917	\$26,058	\$663,449

Kumu: Needs Assessment Study and Facility Reserve Charge Update, Leidos, Nowemapa 2013

E like me ia i hō‘ike ‘ia ma ka Māhele 2.3, ua ‘oi aku ka nui o nā wānana heluna kanaka ma loko o ka SAF no ka 2020 a me ka 2030 ma mua o ka hō‘ike o ka mana ho‘ā‘o o ka 2013 o ka Loilo Makemake. ‘O ka mana‘o o kēia, he emi mai nō paha ka nui o nā hanana kahua waiwai e pono ai e ho‘oponopono i nā hemahema i wānana ‘ia i hō‘ike ‘ia i loko o Papa 2.3.1 e like me ia i ho‘ākāka ‘ia i kēia manawa e ka ‘Oihana Wai.

2.4 Nā Mana‘o Kōkua

Ma hope o ka Papa Hana Laulā i Hō‘ano Hou ‘ia o Kaua‘i o kēia manawa, e ho‘omaka ka ‘Oihana Wai i ka noi‘i Papa Hana Wai 2040. Na ka noi‘i hou e ho‘ohui i nā wānana heluna kanaka a me ka ho‘ākāka lehulehu i loko o ka SAF i ho‘omākaukau ‘ia no ka Papa Hana Laulā i hō‘ano hou ‘ia. Ke paipai ‘ia nei e nānā pū ka noi‘i hou i kēia mau mana‘o:

- Loilo ‘ia ka mea e hiki ai a inā makemake ‘ia nō ka ho‘ohui ‘ia ‘ana o nā hana wai i ‘ona ‘ia i loko o ka hana wai o ke Kalana; a
- Loilo ‘ia ka ho‘ohana ‘ia ‘ana o ka ‘aila i hiki ke hana hou ‘ia ma kona mau kahua.

**PAPA HANA LAULĀ I HŌ‘ANO HOU ‘IA
WEHEWEHE ‘ANO NO NĀ PONO KŪLANAKAUHALE O KAUAI**

KA HANA WAI MEA ‘INO

Ho‘omakaukau ‘ia no

Ke Kalana ‘o Kaua‘i

Ho‘omākaukau ‘ia e ka

R.M. Towill Corporation

Mei 2015

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Hana Wai Mea ‘Ino

Ka Wai Mea ‘Ino

‘O ke kumu no ka wehewehe ‘ano no nā pono kūlanakauhale no ka wai mea ‘ino ma kona ‘ao‘ao i pili me ka Papa Hana Laulā i Hō‘ano Hou ‘ia, ‘o ia ka ho‘opa‘a aku i nā lula alaka‘i nāna e alaka‘i i ka ho‘oponopono ‘ana o kēia mua aku no nā waiwai pili i ka hana wai mea ‘ino o ke Kalana. He kuleana ia o ka papa hana ho‘omalu wai mea ‘ino o ke Kalana e kūkulu a ho‘oholo i ka hana wai mea ‘ino, me ka ‘ohi‘ohi a me ka ho‘oponopono ‘ana, a me nā kahua kiloi pū kekahī.

Māhele 1. Ka Hō‘ike Laulā no ka Hana Wai Mea ‘Ino e Kū nei

Hō‘īke ‘ia ma loko o kēia māhele kekahī hō‘ulu‘ulu ‘ana no nā pono kūlanakauhale e kū nei ma Kaua‘i nei no ka wai mea ‘ino. ‘Ona ‘ia nā hana wai mea ‘ino ma ka mokupuni e kekahī po‘e a i ‘ole e ke Kalana ‘o Kaua‘i. Ua pau kekahī o nā papa hana hana no ka wai mea ‘ino no nā wahi nui like ‘ole o ka mokupuni i ka ho‘okō ‘ia. Ma kēia māhele, e hō‘ulu‘ulu ‘ia nā papa hana wai mea ‘ino nui like ‘ole a e hō‘ike ‘ia ma ho‘okahi palapala.

1.1 Ho‘ākāka

Na ke Kalana ‘o Kaua‘i e mālama i kekahī hana lawelawe no nā kaiāulu nui ‘ehā (4), ‘o ia ho‘i, Waimea, Hanapēpē-‘Ele‘ele, Līhu‘e-Hanamā‘ulu, a me Wailua-Kapa‘a, e like me ia i hō‘ike ‘ia ma Ki‘i 1-1. Kauka‘i nā kaiāulu ma waho o kahi e lawelawe ‘ia nei e ke Kalana ma luna o nā kahua ho‘oponopono wai mea ‘ino i ‘ona ‘ia. Ma nā wahi kua‘āina kahi i loa‘a ‘ole ai ka hana lawelawe ho‘oponopono wai mea ‘ino, kauka‘i nā kānaka a me nā hui li‘ili‘i he nui ma luna o nā Hana Wai Mea ‘Ino Kū Ho‘okahi (Individual Wastewater System: IWS) a me ka luawai pelapela. ‘O nā wahi e kauka‘i ana ma luna o nā kahua ho‘oponopono wai mea ‘ino i ‘ona ‘ia a i ‘ole ka IWS/luawai pelapela, ‘o Puhi, Kekaha, Princeville, a me Po‘ipū.

1.2 Nā Pono Kūlanakauhale no ka Wai Mea ‘Ino o ke Kalana ‘o Kaua‘i

Ho‘ohui ‘ia i loko o nā kahua wai mea ‘ino o ke Kalana ‘o Kaua‘i ke Kahua Ho‘oponopono Wai Mea ‘Ino o Waimea, ke Kahua Ho‘oponopono Wai Mea ‘Ino o ‘Ele‘ele, ke Kahua Ho‘oponopono Wai Mea ‘Ino o Līhu‘e, ke Kahua Ho‘oponopono Wai Mea ‘Ino o Wailua, a me nā kahua pauma wai mea Mea ‘Ino o ‘Ele‘ele, ke Kahua Ho‘oponopono Wai Mea ‘Ino o Līhu‘e, ke Kahua Ho‘oponopono Wai Mea ‘Ino o Wailua, a me nā kahua pauma wai mea ‘ino like ‘ole. Hō‘ike ‘ia i loko o ka Papa 1-1 kekahī hō‘ulu‘ulu ‘ana o nā kahua ho‘oponopono wai mea ‘ino a me ko lākou mau wahi lawelawe. Hō‘ike ‘ia nā kahua ho‘oponopono wai mea ‘ino nā wahi kahi o nā kahua ho‘oponopono wai mea ‘ino ma ka Papa 1-2. Penei ka ho‘ākāka ‘ana no kēlā me kēia hana wai mea ‘ino:

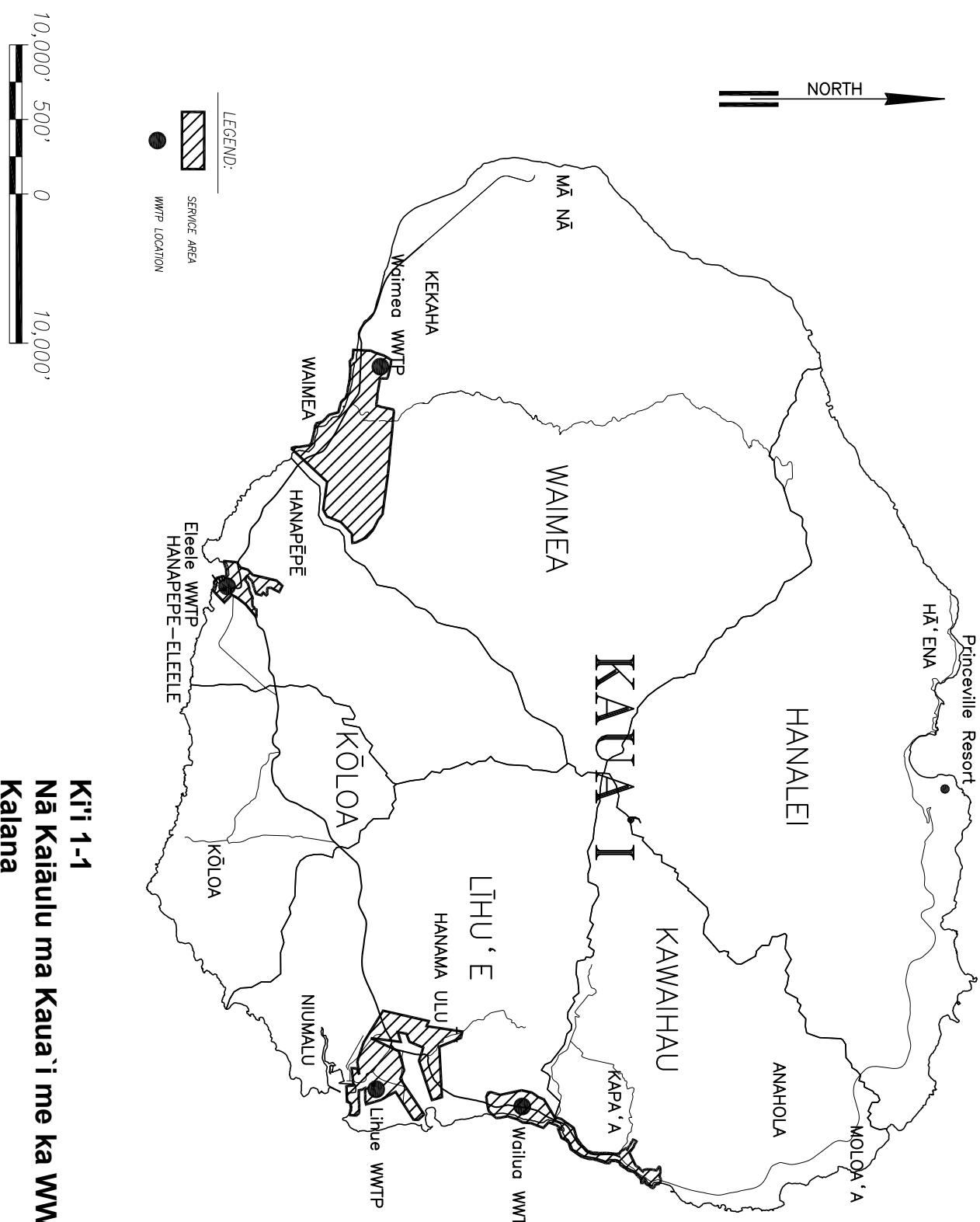
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 Hana Wai Mea ‘Ino

Papa 1-1. Hō‘ulu‘ulu no nā Kahua Ho‘oponopono Wai Mea ‘Ino o ke Kalana ‘o Kaua‘i

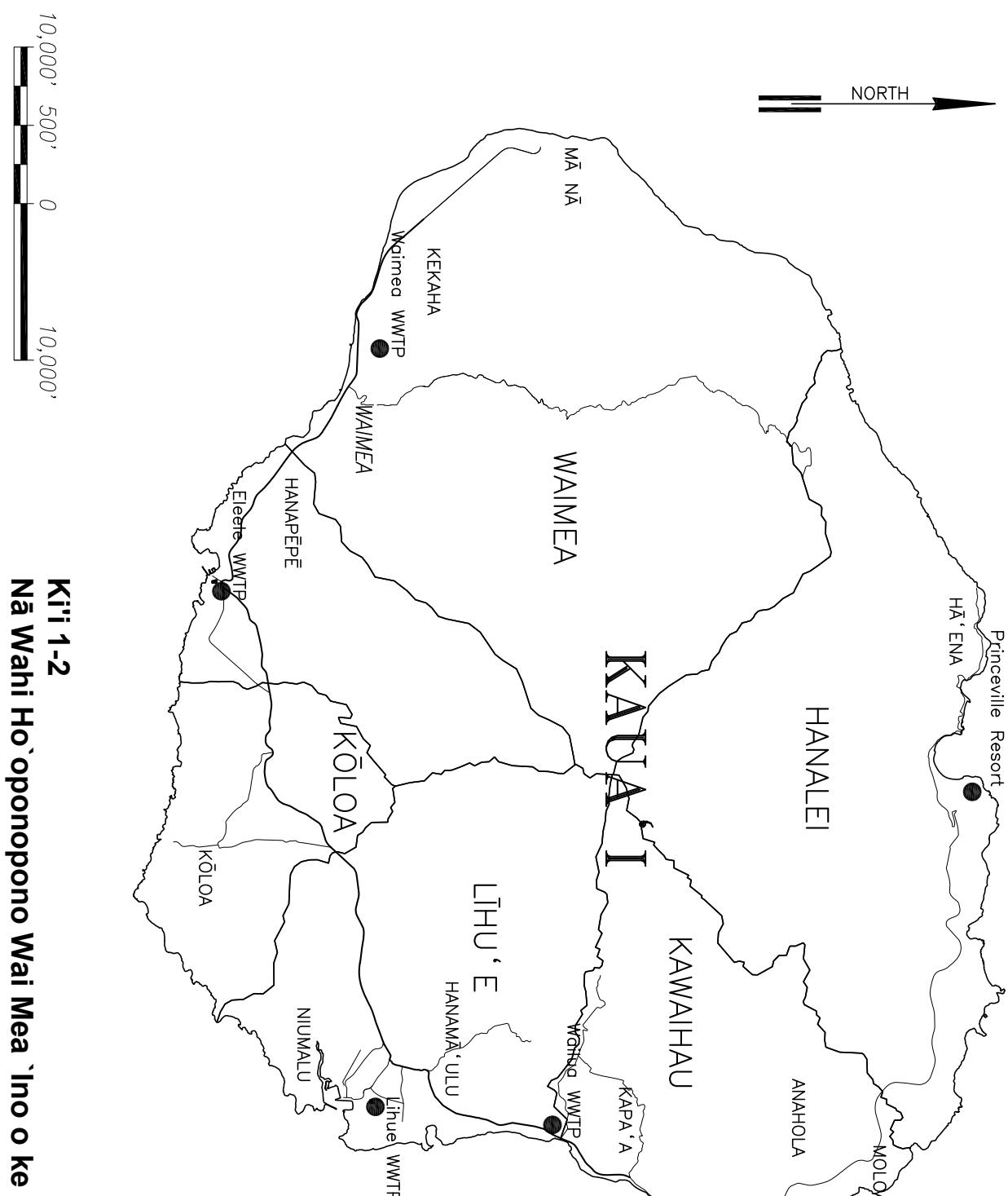
Kahua	Kahi Lawelawe	Ka Nui i Kūkulu ‘ia ai	Ke ‘Ano o ka Wai
Ho‘oponopono			
Waimea	Waimea community	0.7 mgd	R-1 ¹
‘Ele‘ele	Hanapēpe, ‘Ele‘ele, Port Allen	0.8 mgd	Secondary
Līhu‘e	Properties along Kapule Highway, Kūhiō Highway, Ahukini Road, and Rice Street	2.5 mgd	R-1
Wailua	Kapa‘a, Papaloa, Waipouli, Wailua	1.5 mgd	R-2 ²

1. R-1: Wai i ho‘opō‘aiāpuni ‘ia i ho‘ohuihui ‘ia ai ka O₂, pau ke kālana ‘ia, a ho‘oma‘ema‘e ‘ia.

2. R-2: Wai i ho‘opō‘aiāpuni ‘ia i ho‘ohuihui ‘ia ai ka O₂ a ho‘oma‘ema‘e ‘ia.



Kī'i 1-1
Nā Kaiāulu ma Kaua'i me ka WWTP o ke
Kalana



Kī'i 1-2
Nā Wahī Ho'oponopono Wai Mea 'Ino o ke Kalana o Kaua'i

10,000' 500' 0 10,000'

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Hana Wai Mea ‘Ino

1.2.1 Ka Hana Wai Mea ‘Ino o Waimea

Ua kūkulu ‘ia ka hana wai mea ‘ino o Waimea i nā makahiki o mua o nā 1970 ma ka ‘ao‘ao komohana hema o Kaua‘i a ho‘onui hou ‘ia i ka 2013. Lawelawe kēia hana i ke kaiāulu o Waimea a aia i loko o ua hana nei nā paipu, nā lua komo paipu wai mea ‘ino, ‘ehā (4) mau kahua pauma wai mea ‘ino, nā paipu ho‘oholo wai nui, a me ke kahua ho‘oponopono wai mea ‘ino. Hō‘ike ‘ia i loko o Ki‘i 1-3 kahi o nā kahua pauma wai mea ‘ino ‘ehā (4) a me ke kahua ho‘oponopono wai mea ‘ino.

1.2.2 Ka Hana Wai Mea ‘Ino o ‘Ele‘ele

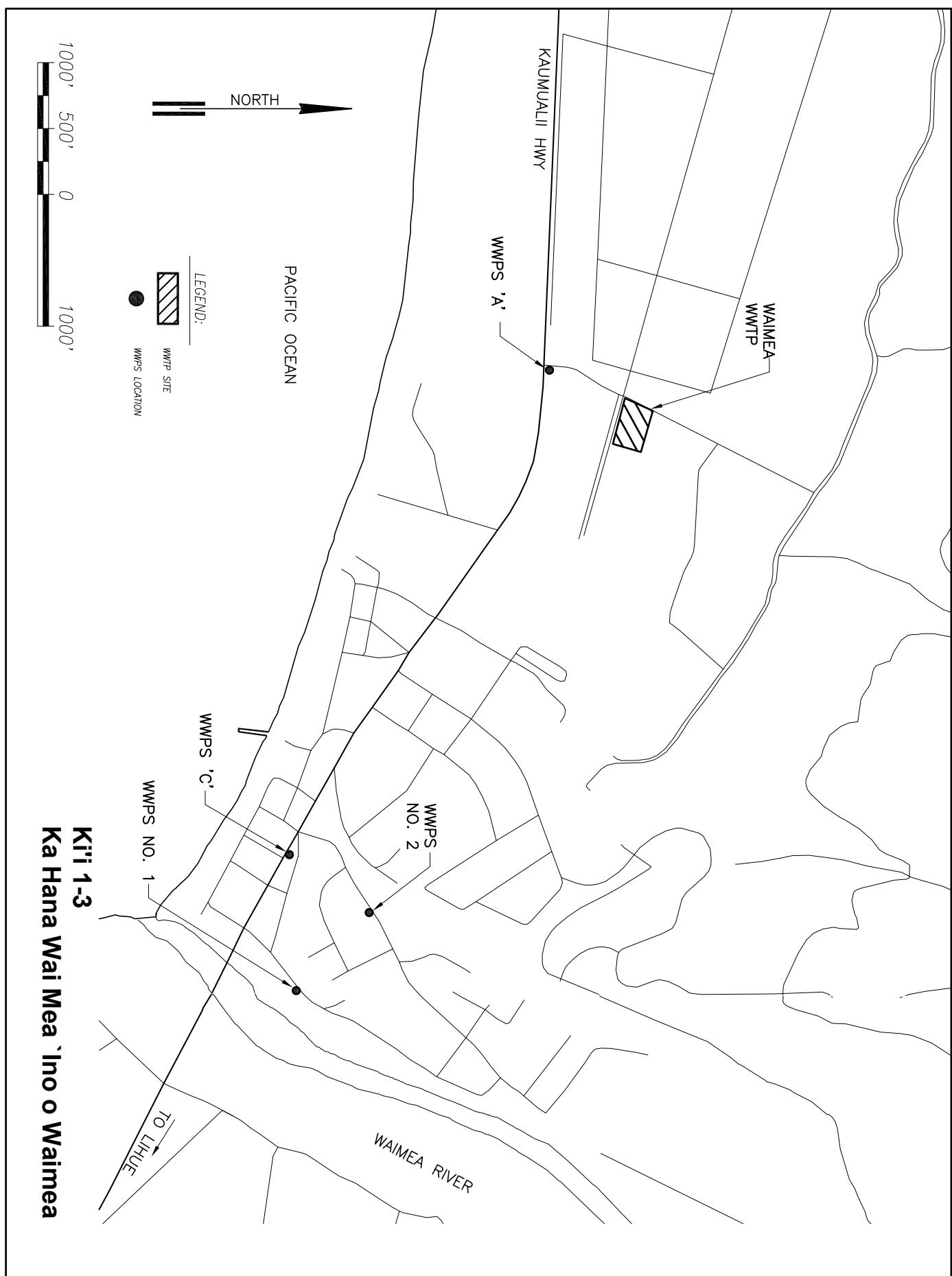
Ua kūkulu ‘ia ka hana wai mea ‘ino o ‘Ele‘ele i ka 1977 a ho‘onui ‘ia i loko o nā makahiki 1990 no ka lawelawe ‘ana i nā wahi o Hanapēpe, ‘Ele‘ele, a me Port Allen. Aia i loko o kēia hana nā paipu ‘umekaumaha, nā lua komo paipu wai mea ‘ino, ‘ekolu (3) mau kahua pauma a me ko lākou mau paipu ho‘oholo wai nui, a me ke kahua ho‘oponopono wai mea ‘ino. Hō‘ike ‘ia i loko o Ki‘i 1-4 kahi o nā kahua pauma wai mea ‘ino a me ke kahua ho‘oponopono wai mea ‘ino.

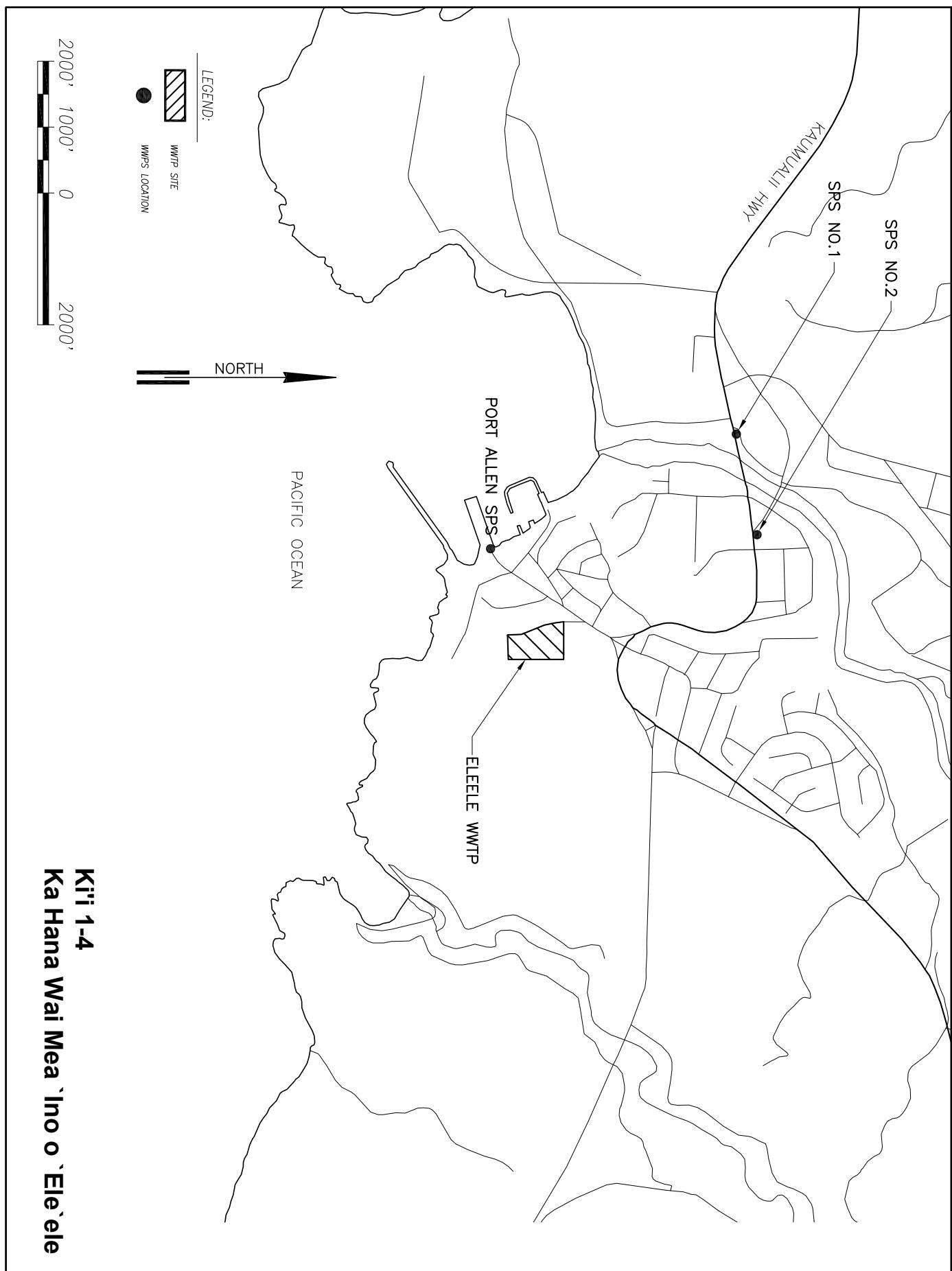
1.2.3 Ka Hana Wai Mea ‘Ino o Līhu‘e

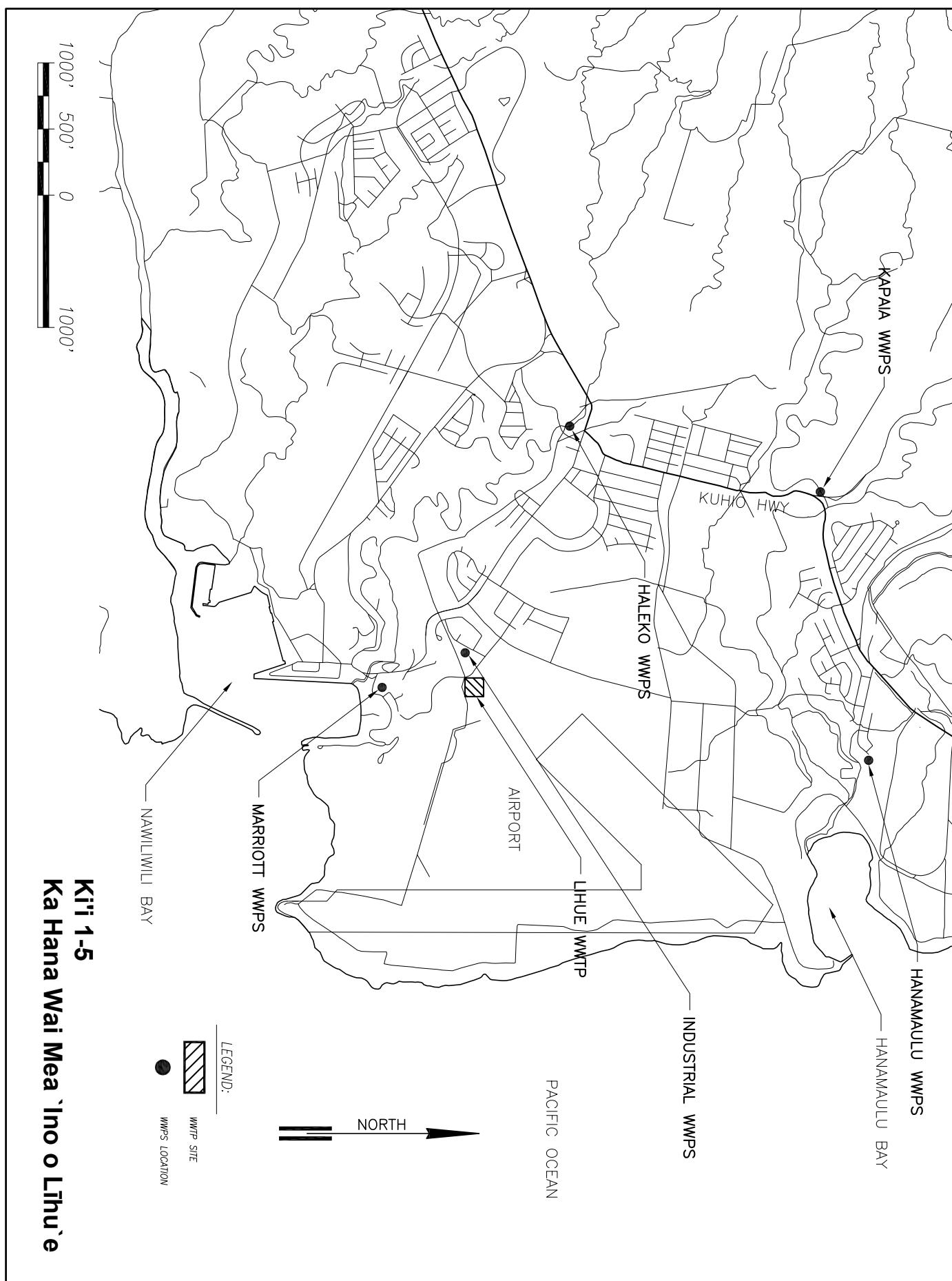
Ua kūkulu ‘ia ka hana wai mea ‘ino o Līhu‘e i loko o nā 1970 no ka lawelawe ‘ana i nā hale ma ke Alaloa Kapule, ke Alaloa Kūhiō, Ala Ahukini, a me Ala Rice, a ua ho‘onui hou ‘ia a‘e i nā makahiki o hope o nā 1990. Aia i loko o ua hana nei nā paipu ‘umekaumaha, nā lua komo paipu wai mea ‘ino, ‘elima (5) mau kahua pauma wai mea ‘ino a me ko lākou mau paipu ho‘oholo wai nui, a me ke kahua ho‘oponopono wai mea ‘ino. Hō‘ike ‘ia i loko o Ki‘i 1-5 kahi o nā kahua pauma wai mea ‘ino a me ke kahua ho‘oponopono wai mea ‘ino.

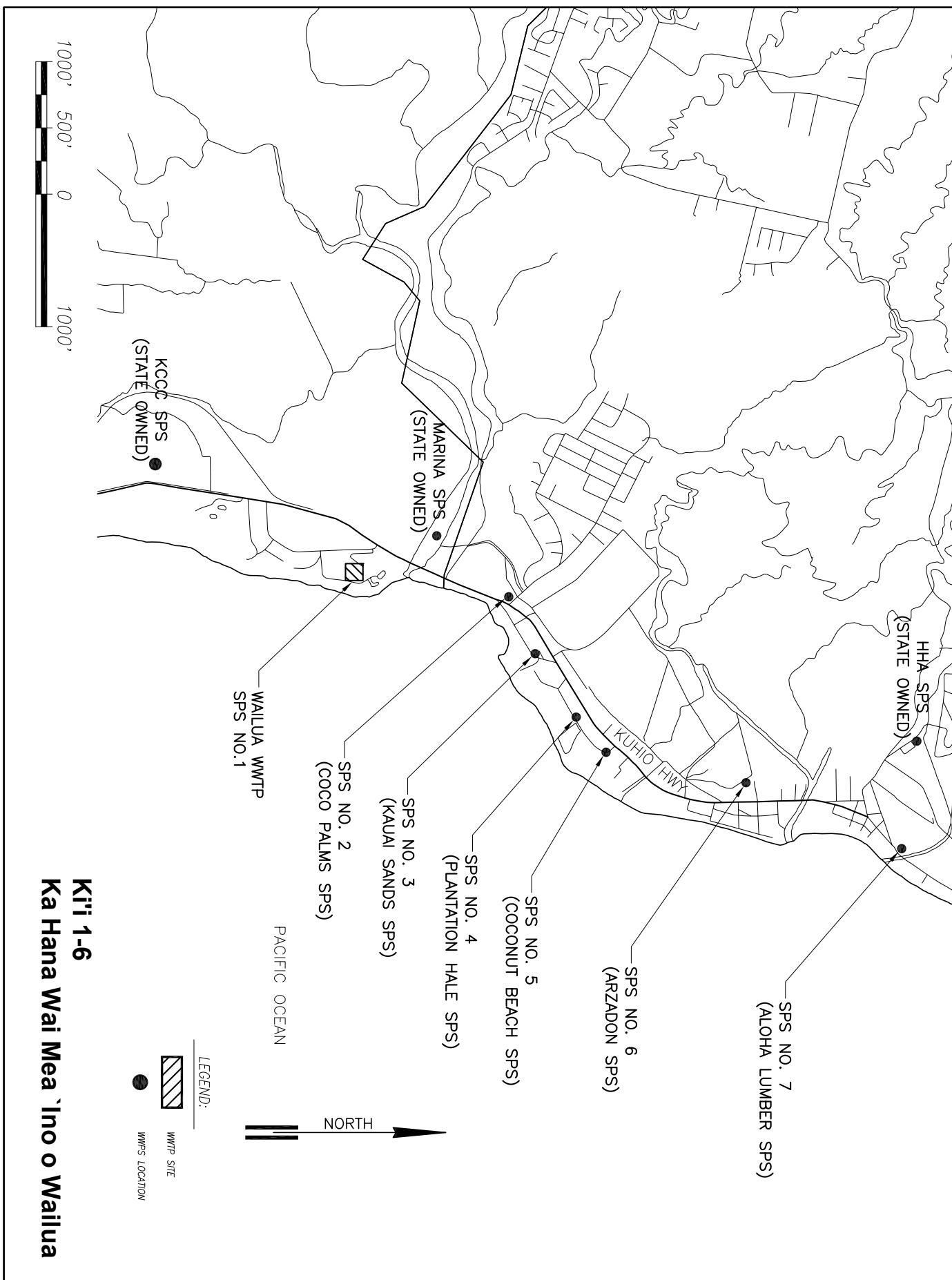
1.2.4 Ka Hana Wai Mea ‘Ino o Wailua

Ua kūkulu ‘ia ka hana wai mea ‘ino o Wailua ma ka 1964 no ka lawelawe ‘ana i kahi o Kapa‘a, Papaloa, Waipouli, a me Wailua a ua ho‘onui hou ‘ia a‘ela i loko o kekahī mau māhele, a ‘o ka manawa hope loa, aia i ka 1991. Aia i loko o kēia hana nā paipu ‘umekaumaha, nā lua komo paipu wai mea ‘ino, ‘umi (10) mau kahua pauma wai mea ‘ino a me ko lākou mau paipu ho‘oholo wai nui, a me ke kahua ho‘oponopono wai mea ‘ino. Hō‘ike ‘ia i loko o Ki‘i 1-6 kahi o nā kahua pauma wai mea ‘ino a me ke kahua ho‘oponopono wai mea ‘ino.









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1.3 Nā Hana Wai Mea ‘Ino i ‘Ona ‘ia

He nui nā hana wai mea ‘ino i ‘ona ‘ia ma Kaua‘i nei. Hō‘ike ‘ia nā hana nui a‘e ma lalo nei a hō‘ike pū ‘ia nā hana wai mea ‘ino e lawelawe ana i nā wahi o Puhi, Pacific Missile Range Facility, Princeville, a me Po‘ipū. ‘O kekahi mau hana wai mea ‘ino li‘ili‘i hou mai ma Kaua‘i, ‘o ‘Alihi Lani, Nāwiliwili, Kōke‘e, Hale Kahanalu, Kalepa Village, Kūhiō Shores, Lāwa‘i Beach, a me Whaler’s Cove. Hō‘ike ‘ia kekahi hō‘ulu‘ulu ‘ana o nā hana wai mea ‘ino nui ma ka Papa 1-2.

Papa 1-2. Hō‘ulu‘ulu o nā Kahua Ho‘oponopono Wai Mea ‘Ino i ‘Ona ‘ia

Kahua Ho‘oponopono	‘Ona	Ka Nui i Kūkulu ‘ia ai	Ke ‘Ano o ka Wai
Puhi	Grove Farm	1.0 mgd	R-1
Pacific Missile Range Facility (PMRF)	U.S. Navy	‘Ao‘ao ‘ākau: 7,500 gpd ‘Ao‘ao hema: 10,000 gpd	Kualua
Kaua‘i Beach Resort Assoc. (KBRA)	KBRA	0.1 mgd	Kualua
Princeville	Princeville	1.5 mgd	R-2
Po‘ipū	HOH Utilities, LLC	0.8 mgd	R-1

1.3.1 Ka Hana Wai Mea ‘Ino o ka Puhi Sewer and Water Company

‘Ona ‘ia ka Puhi Sewer & Water Company e ka Grove Farm a nāna e ho‘oponopono i ka wai mea ‘ino no nā wahī i kūkulu nui ‘ia, e like me Kukui Grove, Puakea, a me nā wahī o Puhi. Aia i loko o ua hana nei nā paipu ‘umekaumaha, ‘elua (2) mau kahua pauma wai mea ‘ino a me ko lākou mau paipu ho‘oholo wai nui, a me ke kahua ho‘oponopono wai mea ‘ino.

1.3.2 Ke Kahua Ho‘oponopono Wai Mea ‘Ino o ka Pacific Missile Range Facility

He kahua pāpū pū‘ali koa ka Pacific Missile Range Facility (PMRF) o ka ‘Oihana Moku Kaua o ‘Amelika Hui ‘ia a ‘o ia ke kahua nui loa o ka honua nei me nā mea hana a me nā ‘ano hana ho‘ā‘o like ‘ole a me ke a‘o ‘ana. Aia ka PMRF ma ke kapa kai komohana o Kaua‘i ma kahi kokoke iā Kekaha ma kahi o 1,800 mau ‘eka. ‘Elua nō kahua ho‘oponopono wai mea ‘ino ma laila e lawelawe ana i kahi o ka PMRF.

1.3.3 Ke Kahua Ho‘oponopono Wai Mea ‘Ino o ke Kaua‘i Beach Resort Association

Na ke Kaua‘i Beach Resort Association (KBRA) e ho‘omalu a ho‘oholo i ko lākou kahua ho‘oponopono wai mea ‘ino. Aia ke kahua KBRA ma ke kapa kai hikina o Kaua‘i ma ka ‘ākau

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aku o Līhu‘e. Ua kūkulu ‘ia ke kahua ho‘oponopono wai mea ‘ino ma ka 1981 a nāna e lawelawe ‘ekolu mau kaiāhome o lalo.

1.3.4 Ke Kahua Ho‘oponopono Wai Mea ‘Ino o Princeville

Aia ke kaiāhome o Princeville ma ke kapa kai ‘ākau o Kaua‘i ma kahi o 2,200 mau ‘eka. Aia i loko o ka hana wai mea ‘ino o Princeville nā paipu wai mea ‘ino ‘umekaumaha, ‘eono (6) mau kahua pauma wai mea ‘ino a me ko lākou mau paipu ho‘oholo wai nui, a me ke kahua ho‘oponopono wai mea ‘ino. Na ke kahua wai mea ‘ino e lawelawe i ka Princeville Hotel, kekahi mau hale kū‘ai, kekahi mau hale noho ‘ohana pākahi a pālua, a me ke kahua pā‘ani kolepa.

1.3.5 Ke Kahua Ho‘oponopono Wai Mea ‘Ino o Po‘ipū Wastewater Treatment

Ua kūkulu ‘ia ke kahua ho‘oponopono wai mea ‘ino o Po‘ipū ma ka 1981 a ho‘onui hou ‘ia a‘ela ma hope i ka 2004 no ka lawelawe ‘ana i kahi hōkele o Po‘ipū. Ho‘ohana ‘ia ka wai i ho‘oponopono ‘ia ma ke kahua ho‘oponopono wai mea ‘ino no ka hana wai ‘ana i ke kahua pā‘ani kolepa o Kiahuna a me ka hōkele o Kōloa Landing. Kiloi ‘ia ka wai i ho‘oponopono ‘ia i koe mai ke kahua ho‘oponopono wai mea ‘ino ma o nā luawai i kī ‘ia ai ke chlorine.

1.4 Nā Hana Wai Mea ‘Ino Kū Ho‘okahi

‘A‘ole i ho‘oku‘i ‘ia nā wahi he nui o ka mokupuni i kekahi hana ‘ohi mea ‘ino a kuhi ‘ia he ho‘oponopono ‘ia ka wai mea ‘ino ma ke ‘ano kū ho‘okahi (Individual Water System: IWS). ‘O kekahi mau wahi, ‘o Kūpolo a me Ulu Mahi ma Līhu‘e, kahi o Hanapēpē Uka ma kahi kokoke iā ‘Ele‘ele, kekahi mau wahi o Kekaha ma Waimea, a me kekahi mau wahi o Kapa‘a ma Wailua. Malia paha he luawai pelapela nō ko kahi o 85% o nā Hale noho he 1,000 o Kekaha. ‘O nā ‘āpana mahi ‘ai a kua‘āina o ‘Ele‘ele Uka pū nō ho‘i kekahi wahi i ho‘oku‘i ‘ole ‘ia ai i ka hana wai mea ‘ino o ke Kalana, akā na‘e, ma muli o ka nui o nā ‘āpana ‘āina a me ke kōā ma waena, ‘a‘ole he mea hiki wale nō ka ho‘oku‘i ‘ia ‘ana o ia mau wahi. Aia ma kahi o Līhu‘e ma waena o Hanamā‘ulu a me Nāwiliwili, loa‘a kekahi mau kaiāulu e kauka‘i ana ma luna o ka IWS a i ‘ole ka luawai pelapela. Loa‘a 4,000 a ‘oi mau IWS/luawai pelapela ma kahi o Wailua-Kapa‘a a he pau ka pono o kahi o 12% o nā luawai pelapela. ‘Elua nō mau ‘ano o ka IWS:

- He lua ma ka honua ka luawai pelapela kahi e ho‘oki‘o ‘ia ai ka mea ‘ino a ‘a‘ohe ona ho‘oponopono ‘ia ‘ana. Hā‘ule nā mea pa‘a i lalo o ka luawai pelapela a kū ka wai ma luna a kulu li‘ili‘i i loko o ka lepo e ho‘opuni mai ana. I mea e pale ai i ka hū ‘ana o ka luawai pelapela, pono e pauma ‘ia ka wai a me ka pelapela i kekahi manawa a kiloi pono ‘ia ma kekahi kahua waihona pelapela. Akā na‘e, he pilikia mai koe ka pono o ka wai i ka ho‘oku‘u ‘ia ‘ana o ka wai mea ‘ino ma ka ‘āina. He pāpā ka Papa Ola o ka Moku‘āina i ke kūkulu ‘ia ‘ana o nā luawai pelapela hou, koe ke ‘ae ‘ia e ka luna ho‘omalu o ka Papa Ola.

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- Ka IWS ma‘amau o ka Papa Ola: ‘O ka IWS ma‘amau o ka Papa Ola, he pahu ho‘oponopono wai mea ‘ino, ‘o ka mea ma‘amau, hana ‘ia ua mea nei i ke kimeki a i ‘ole ka ma‘awe aniani a pēlā e ‘ohi ‘ia ai ka wai mea ‘ino. ‘O ka mea ma‘amau, ‘elua nō ke‘ena i loko o ka pahu. ‘Ano like nō ke ke‘ena mua me kekahī luawai pelapela kahi e ku‘u ai nā mea pa‘a i lalo a lana ka walewale i luna. Ma loko nō ho‘i o ke ke‘ena mua, waiho nā mea pa‘a e numinumi mai nona iho a pēlā e emi ai ka nui o nā mea pa‘a. Pēlā e hiki ai ke kahe ka wai i loko o ka ‘alua o ke ke‘ena kahi e ho‘oki‘o hou ai ka wai. Kulu kēia wai mea ‘ino i hapa mai kona ho‘oponopono ‘ia ‘ana i loko o ka lepo e ho‘opuni mai ana ma o kekahī kālana ho‘okulu. Pono e ‘ohi ‘ia ka pelapela a me ka walewale e waiho ana ma loko o ka pahu ho‘oponopono wai mea ‘ino i kekahī manawa pa‘a mau e pale ai i ka hū ‘ana a me ka pilikia o ka hana.

‘O nā kaiāhome kahi i ho‘oku‘i ‘ole ‘ia ai i ka hana ‘ohi wai mea ‘ino, na lākou nō e ho‘oponopono i kā lākou wai mea ‘ino ma ka ho‘ohana ‘ana i kā lākou mau IWS pono‘ī. Hiki nō ke lawelawe ‘ia nā IWS he nui i kekahī wā e hiki mai ana e kekahī kahua ho‘oponopono wai mea ‘ino. Na nā kahua ho‘oponopono wai mea ‘ino e no‘ono‘o i ka nui hou aku o ka wai kahe mai nā IWS mai, a he mea nui nō kēia i ka no‘ono‘o ‘ana no ke kahe ‘ana o ka wai i ke kūkulu ‘ia ‘ana o nā hale hou aku.

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Māhele 2. Ka Loilo Nui, nā Hemahema, a me nā Makemake

Na kēia māhele e hō‘ike i ka nui e hiki ai ma nā kahua ho‘oponopono wai mea ‘ino, nā hemahema e kū nei, a me nā makemake i wānana ‘ia i wai mea ‘ino ma Kaua‘i.

2.1 Hō‘ike Laulā

‘O ka hana ma‘amau, kuhi ‘ia ka nui o ke kahe ‘ana o ka wai mea ‘ino e like me nā kuhi no ka ho‘ohana ‘ia ‘ana o ka ‘āina a me ka heluna kanaka. He pono nō paha ka ho‘oponopono ‘ana a me ka ho‘onui ‘ana e kōkua ai i ka pi‘i ‘ana o ka nui o ka wai mea ‘ino mai nā wahi hou i kūkulu ‘ia ai nā hale.

2.2 Ka Wai Mea ‘Ino a ke Kalana ‘o Kaua‘i

He ‘oko‘a ka nui o nā kahua ho‘oponopono wai mea ‘ino o ke Kalana ‘o Kaua‘i, aia i ke ‘ano o ka ho‘olālā ‘ia ‘ana o ke kahua a me ke ‘ano o ka hana e ho‘oponopono ai i ka wai mea ‘ino. Ho‘ākāka pōkole ‘ia nā kahua ho‘oponopono wai mea ‘ino o Waimea, ‘Ele‘ele, Līhu‘e, a me Wailua ma nā māhele ma lalo nei.

2.2.1 Ke Kahua Ho‘oponopono Wai Mea ‘Ino o Waimea

Ua hō‘ano hou ‘ia ke kahua ho‘oponopono wai mea ‘ino o Waimea (Waimea Wastewater Treatment Plant: WWTP) i kekahi wā pōkole nō i hala a‘ela ma ke ‘ano he R-1, he kahua Moving Bed Biofilm Reactor (MBBR) a ‘o ke ana o ka nui, he 0.7 miliona kālani o ka lā (mgd). ‘O ka mea nui i loko o kēia wahi lawelawe no ke kahua, he mau ‘āpana hale noho (ma kahi o 90% o nā hale noho), a me nā wahi hui/hui hana (ka ‘āpana hui hana) ma ke kaiāulu o Waimea. ‘O nā hana e ho‘oponopono ‘ia ai ka wai mea ‘ino, ‘o ia ke kālana a me ka wehewehe ‘ia ‘ana o nā mea pa‘a, ka Moving Bed Biofilm Reactor (MBBR), ka dissolved air flotation (DAF), nā kālana pā, ka ho‘oma‘ema‘e ultraviolet, ka ho‘oponopono ‘ana i ka pelapela, a me kekahī mīkini wili no ka wehe ‘ana i ka wai. Hō‘ike ‘ia ka ‘ike o ke kahua ho‘oponopono wai mea ‘ino ma ka Papa 2-1.

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Papa 2-1. Nā Ana o ka Ho‘olālā ‘ia ‘ana o ka WWTP

Ho‘ākāka	Nui	Ana
Design Daily Flow	700,000	gpd
Influent Screens		
Number of screens	2	pākahi
Peak Capacity each screen	2.8	mgd
Vortex Grit Tank	1	pākahi
Number of tanks	1	pākahi
Peak Capacity	5.6	mgd
Flow Equalization Tanks		
Number of tanks	2	pākahi
Capacity of tank, each	148,000	kālani
Moving Bed Biofilm Reactor Tanks		
Number of Trains	2	pākahi
Tanks per Train	2	pākahi
Design Average Flow	700,000	gpd
Design Peak Flow	1.8	mgd
Dissolved Air Flotation Tanks		
Number of Tanks	2	pākahi
Maximum Flow per tank	2.0	mgd
Disk Filters		
Number of Filters	2	pākahi
Maximum flow per filter	2.0	mgd
UV Disinfection Unit		
Number of Units	1	pākahi
Maximum flow through unit	1.6	mgd

Ma muli o ka ho‘onui ‘ana o ke Kalana ‘o Kaua‘i i ka wā kokoke i hala a‘ela e lilo ai ia kahua he kahua R-1, ‘a‘ohe hemahema hou aku o nā mīkini ma ka WWTP. ‘O ka hō‘ano hou ‘ia ‘ana o ka hana wai mea ‘ino o Kekaha me ka ho‘onui pū aku ka hana a‘e e hana ai. Aia ka pono o ka ho‘ololi/ho‘onui ‘ia ‘ana o ka hana hana wai meakanu R-1 i nā makemake ā puni i wai hana wai meakanu.

2.2.2 Ke Kahua Ho‘oponopono Wai Mea ‘Ino o ‘Ele‘ele

Aia ke kahua ho‘oponopono wai mea ‘ino o ‘Ele‘ele (‘Ele‘ele Wastewater Treatment Plant: EWTP) ma ke kapa kai komohana hema o Kaua‘i a nāna e lawelawe wahi hui hana a me nā kaiāhome o Port Allen, ‘Ele‘ele, a me Hanapēpē. Na kēia kahua e hana i ka wai ma‘ema‘e kualua o ke ‘ano a ho‘oku‘u i loko o nā luawai ho‘ohuihui chlorine. Kūkulu ‘ia kēia kahua ho‘oponopono wai mea ‘ino ma ke ‘ano he 0.80 mgd ka nui o ke kahe ‘ana a he ‘apo i ke kahe ‘ana he 0.40 – 0.60 mgd ka nui. He ho‘owāwahi pelapela (activated sludge process) ke ‘ano o ka hana ma ka EWTP, ‘o ia ho‘i, penei ka hana: comminuting, aeration, clarification, effluent chlorination, aerobic digestion, mechanical dewatering, a me ke kiloi wai ho‘oma‘ema‘e ‘ia ma o nā pahu wai ho‘ohuihui chlorine. Hō‘ike ‘ia ka ‘ike o ke kahua ho‘oponopono wai mea ‘ino e kū nei (me ka nānā ‘ole pū i nā loli o ka wā pōkole) ma ka Papa 2-2.

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He kuhi ke Kalana i ka pono no ka ho‘ololi a me ka ho‘onui ‘ana i ke kahua o ‘Ele‘ele i ka hiki ‘ana mai o ka 2025. Ma loko o ka Papa Hana o ke Kahua (2008), ua māhelehele ‘ia nā loli ma ‘ekolu mau māhele: ka wā pōkole, ka wā lō‘ihī iki mai, a me nā mea e ho‘oponopono ai i kēlā me kēia māhele. Ke hana ‘ia maila nā loli o ka wā pōkole, a ‘o ka hana, ‘o ia ka headwork hou, he pauma ho‘opō‘aiāpuni hou, he mīkini puhi ‘elua, he mīkini hana uila hou no ka wā pō‘ino, a me ke kuapo ‘ia ‘ana o kekahi mīkini dewater. No ka wā lō‘ihī iki nō, e ho‘onui ‘ia ka nui o ka mea e hiki ai ke ho‘oponopono ‘ia ka wai mea ‘ino ā piha ke kahe ‘ana o ka lā he 1.0 ā ka 1.2 mgd.

Papa 2-2. Ke Ana o ke Kūkulu ‘ia ‘ana o ka EWTP

Ho‘ākāka	Huina	Ana
Design Daily Flow	800,000	gpd
Bar Screens		
Number of screens	1	pākahī
Peak Capacity each screen	3.6	mgd
Aerated Grit Chamber	1	pākahī
Screw conveyor	1	pākahī
Motor size	2	hp
Activated Sludge System		
Anoxic zone		
Compartments	4	pākahī
Volume for tanks 1-3	1,500	ft ³ , pākahī
Volume for tank 4	4,400	ft ³
Anoxic Mixers		
Quantity	5	pākahī
Capacity, each	2,000	gpm
Aerobic zone		
Trains	3	pākahī
Volume per train	12,900	ft ³
Clarifiers (rectangular)		
Quantity	2	pākahī
Length	72	kapua‘i
Width	20	kapua‘i
Side wall depth	17.5 max	kapua‘i
Chlorine Contact Basin		
Tank volume	2,700	ft ³
Aerobic Digester		
Number of digesters	3	pākahī
Volume, total	41,000	ft ³

Ua hō‘ike ‘ia kekahi o nā hemahema ma ka EWTP ma loko o nā māhele wā lō‘ihī iki a me ka lō‘ihī o ka ho‘oponopono ‘ana. Aia i loko o kēia mau hemahema ka nele o ka ‘aila mīkini hana uila kōkua, nā hana hou aku o nā mīkini, ka nele o nā paipu pale pahū no kekahi o nā mīkini, ka nele o kahi nui kūpono e hana ai i mua o ka mīkini hana uila SPS Helu 2 o Hanapēpē, he hale

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uila, a me ke kuapo ‘ia ‘ana o ka laina uila nui. Ke kūkulu ‘ia mai nei nā mea e ho‘oponopono ai i nā hemahema o ka wā pōkole a me ka wā lō‘ihī iki nō ho‘i.

2.2.3 Ke Kahua Ho‘oponopono Wai Mea ‘Ino o Līhu‘e

Aia ke kahua ho‘oponopono wai mea ‘ino o Līhu‘e (LWTP) ma waena o ke kahua mokulele o Līhu‘e a me ke Kaua‘i Lagoons Resort. ‘O ka nui o nā mea i ho‘ohui ‘ia i loko o kahi lawelawe o kēia kahua, he mau kaiāhome a me nā hui hana ma ke Alaloa Kapule, ke Alaloa Kūhiō, Ala Ahukini, a me Ala Rice, a hui pū ‘ia nā wahi kokoke o Nāwiliwili a me Hanamā‘ulu. Ma loko o ka Papa Hana Kahua Ho‘oponopono Wai Mea ‘Ino hope loa i ho‘opuka ‘ia i ka 2008, ke ho‘ohana ‘ia nei he hapalua like wale nō o ka nui i hiki he 2.5 mgd a ‘a‘ohe wānana ‘ana no ka nui hou ‘ana o ka ho‘ohana ‘ia ‘ana ā piha ka nui i ka hiki ‘ana mai o ka 2025. Hana ke kahua he wai ma‘ema‘e o ke ‘ano kualua R-1 a kūkulu ‘ia ke kahua he 1.5 mgd ka nui a i ‘ole he ho‘oponopono ‘ana he 2.5 mgd me ke kiloi pū ‘ana i loko o nā pahu wai ho‘ohuihui chlorine. ‘O ka hana a nā mīkini, penei nō: screening, degritting, aeration, primary clarification, biotower (trickling filter/solids contact process), anaerobic sludge digestion, secondary clarification, tertiary filtration, UV disinfection, and sludge dewatering by centrifuge. No ka ho‘ohana hou ‘ana, ua kūkulu ‘ia he palapala ‘aelike ma waena o ke Kalana ‘o Kaua‘i a me ke Kaua‘i Lagoons e ‘āpono ai ka kahua pā‘ani kolepa he 1.5 mgd wai ho‘oma‘ema‘e ‘ia ka nui. I kēia wā, he ‘apo ke kahua pā‘ani kolepa he 1.0 ā hiki i ka 1.2 mgd. Hō‘ike ‘ia ka ‘ike kahua ho‘oponopono wai mea ‘ino e kū nei ma ka Papa 2-3.

Papa 2-3. Ke Ana i Kūkulu ‘ia ai ka LWTP

Ho‘ākāka	Huina	Ana
Design Daily Flow	2,500,000	gpd
Mechanical Bar Screens		
Number of screens	2	pākahī
Peak Capacity each screen	6.25	mgd
Aerated Grit Chamber	1	pākahī
Detention time at 6.25 mgd	2	min
Primary Clarifier		
Number of clarifiers	1	pākahī
Diameter	50	kapua‘i
Side water depth	8.5	kapua‘i
Biofilter		
Number of biofilters	2	pākahī
Diameter, each	60	kapua‘i
Media type	Plastic 60° crossflow	
Design hydraulic loading rate	1.08	gpm/sf
Aerated Solids Contact Tank		
Number of tanks	2	pākahī
Detention time	1.56	hola
Secondary Clarifier		
Number of clarifiers	2	pākahī
Diameter	60	kapua‘i

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Side water depth	16	kapua‘i
Tertiary Filters		
Number of filters	2	pākahī
UV Disinfection (Trojan 3000+)	1	pākahī
Dissolved Air Flotation Thickener		
Number of thickeners	1	pākahī
Diameter	25	kapua‘i
Sidewater depth	9.5	kapua‘i
Solids capture	91	pakeneka
Anaerobic Digester		
Sludge loading flow	13.89	gpm
Primary digester volume	479,703	kālani
Primary digester hydraulic detention time	23.99	lā
Secondary digester volume	373,887	kālani
Secondary digester hydraulic detention time	18.69	lā
Centrifuge Skid		
Number of centrifuge skid	1	pākahī
Capacity	100	gpm
Injection Well		
Number of wells	7	pākahī

‘O kekahi mau ‘ano o ka ho‘oponopono ‘ana o kēia mua aku, ‘o ia ke kuapo ‘ana i ka hana aeration (ho‘opa‘a i nā mika dissolved oxygen) a me ka ho‘opa‘a hou ‘ana i ka hana kualua (trickling filter/solids contact). ‘O nā hemahema o ka hana ‘ohi‘ohi, ‘o ia ke kuapo ‘ana i ke kahua ho‘oponopono wai mea ‘ino o Halekō me kekahi kahua hou (inā ‘a‘ole kūkulu ‘ia kekahi hale hou) a me ke kūkulu ‘ana i nā paipu lawe mea ‘ino hou no Ulu Mahi/Pua Loke, Nāwiliwili/Kūpono, a me Kapaia.

2.2.4 Ke Kahua Ho‘oponopono Wai Mea ‘Ino o Wailua

Aia ke kahua ho‘oponopono wai mea ‘ino o Wailua (WWTP) ma ke kapa kai hikina o Kaua‘i ma ke Alaloa Kūhiō ma luna o kahi o 2.1 ‘eka he ‘āina i ‘ona ‘ia e ke Kalana. He ‘apo ke kahua i ka wai mea ‘ino mai nā wahi mai o Kapa‘a, Papaloa, Waipouli, a me Wailua. I kinohi, he ‘ae ke kahua ma kona ‘ano i kūkulu ‘ia ai he ‘awelika kahe he 0.5 mgd a hana i ka wai ma‘ema‘e o ke ‘ano R-2. I ka hiki ‘ana mai o ka 1992, he ‘ae ke kahua i ho‘onui ‘ia i ka nui aku o ka ‘awelika kahe o ka lā he 1.5 mgd, akā, no ka nele o ka redundancy, ka nui o nā makahiki, a me ka pono o kekahi o nā ‘āpana o ke kahua, ua ua paipai ‘ia i loko o ka Papa Hana Kahua (2008) e no‘ono‘o ke Kalana i ka nui he 1.0 mgd. Pauma ‘ia ka wai ho‘oma‘ema‘e ‘ia i ke kahua pā‘ani kolepa ma ke ‘ano he wai R-2 a i ‘ole kiloi ‘ia ma ka ho‘oku‘u ‘ana i loko o ke kai me ka ‘ae pū ‘ia ma ka palapala ‘ae he NPDES. ‘O nā hana ma ka WWTP no ka ho‘oponopono ‘ana i ka wai mea ‘ino, he degritting, aeration, final settling, tertiary filtration, aerobic digestion, sludge stabilization, sludge drying beds, and chlorination. Hō‘ike ‘ia ka ‘ike o ke kahua ho‘oponopono wai mea ‘ino e kū nei ma ka Papa 2-4.

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 Wehewehe ‘Ano no nā Pono Kūlanakauhale o Kaua‘i
 Hana Wai Mea ‘Ino

Kuhi ‘ia he ho‘oponopono ka po‘e o Wailua-Kapa‘a i kā lākou wai mea ‘ino ma ke ‘ano IWS a i ‘ole ma o kekahī kahua ho‘oponopono wai mea ‘ino i ‘ona ‘ia, no ka mea, ‘a‘ole lawelawe ‘ia ia wai ma o ke Kalana. Kuhi ‘ia aia ma kahi o 4,300 po‘e kānaka me ka luawai pelapela, a he lawelawe ‘ia ke koena e ka WWTP. Mai ka WWTP, pauma ‘ia ka wai ma‘ema‘e R-2 i ka hana wai hana wai meakanu o ke kahua pā‘ani kolepa o Wailua a i ‘ole ho‘oku‘u ‘ia i loko o ke kai ma ke ‘ano i ‘ae ‘ia e ka palapala ‘ae o ka NPDES.

‘A‘ole e ho‘ohana ‘ia nei nā kapu Rapid Bloc e kū nei, akā na‘e, oia mau nō nā kapu. Aia i loko o ke ‘ano o ke kūkulu ‘ia ‘ana o ia kahua he hale mīkini hana uila, he hale uila hou, a me nā kapu hou no ka mālama ‘ana i ke keu/ka hunahuna. E ho‘omaha loa ‘ia ka mīkini DAFT a e kuapo ‘ia me kekahī rotary drum thickener.

No kēia mua aku, e nānā ‘ia ka pilikia o ka pau o ka pono o nā luawai pelapela ma kahi o Kapa‘a. ‘O ke ‘ano o ka ho‘ohana ‘ia ‘ana o ka ‘āina i kuhi ‘ia, he hale noho ‘ohana pākahī, he hale noho ‘ohana keu aku, nā hōkele, nā hui hana, nā hale hana, ka hai ‘ana, a me nā kula. Me ka loli nō o ka ho‘ohana ‘ia ‘ana o ka ‘āina, e hana ‘ia ka nui aku nō ho‘i o ka wai mea ‘ino. ‘O ka mana‘o paipai, ‘o ia ka ho‘onui hou ‘ana i ka WWTP ā piha ka nui he 2.0 mgd. I mea e kūpono ai ka ‘oi a‘e i ka 2.0 mgd, he pono e kūkulu ‘ia ka mea e ‘oi aku ai ka nui e hiki ai ke kiloi ‘ia ka wai ho‘oma‘ema‘e ‘ia a i ‘ole e kūkulu ‘ia he kahua ho‘oponopono wai mea ‘ino hou a‘e.

Papa 2-4. Ke Ana Kūkulu o ka WWTP

Ho‘akaka	Huina	Ana
Design Daily Flow	1,000,000	gpd
Influent Mechanical Bar Screens		
Number of screens	1	pākahī
Bar Spacing	1/4	‘īniha
Surge Basin		
Number of Basins	3	pākahī
Treatment Capacity	4.0	mgd
Aeration Basins		
Number of tanks	2	pākahī
Treatment Capacity	1.0	mgd
Secondary Clarifiers		
Number of tanks	2	pākahī
Treatment Capacity	0.7	mgd
Cloth Media Filter		
Number of Filters	1	pākahī
Treatment Capacity	3.0	mgd
Chlorine Contact Tank		
Treatment Capacity	1.05	mgd
Treatment Capacity with 10-inch Reuse Pipeline	3.0	mgd

Ma hope o ka pau ‘ana o nā hanana ho‘oponopono o ka wā lō‘ihī iki nō ma ka WWTP, hiki ke no‘ono‘o ‘ia kekahī hana hou he membrane bioreactor system. He pono nō ho‘i kekahī hana ‘ohi i hō‘ano hou ‘ia e kūpono ai nā wahi o Wailua e ‘ike pinepine nei i ka pau ‘ana o ka pono o

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nā luawai pelapela. ‘O kekahi o kēia mau ho‘oponopono ‘ana, ‘o ia ho‘i, he kahua pauma hou e kuapo ai i ka SPS Helu 1 a me ka ho‘onui hou ‘ana a‘e i ka hana ‘ohi e lawelawe pū ‘ia ai ko Kapa‘a.

2.3 Ka Hana Wai Mea ‘Ino i ‘Ona ‘ia

Ua ‘oi aku i ke 35 ka nui o nā kahua ho‘oponopono wai mea ‘ino i ‘ona ‘ia e lawelawe ana i nā ‘ano papa hana kūkulu o nā ana like ‘ole ma Kaua‘i. He hana nui ka helu ‘ana i ka huina pololei o nā kahua ho‘oponopono wai mea ‘ino a pau ‘oiai nui nā kahua ho‘oponopono wai mea ‘ino no nā hōkele/condominium li‘ili‘i mai he emi mai i ka 10,000 gpd ka nui o ke kahe ‘ana o ka wai mea ‘ino. He kahua ho‘oponopono wai mea ‘ino nō ko nā hanana kūkulu i nui a‘e ka papa hana nui, ‘o Princeville, Puhi, a me Po‘ipū kekahi o ia mau hanana. ‘O kekahi mau kahua ho‘oponopono wai mea ‘ino i ‘ona ‘ia e lawelawe ana i nā wahi li‘ili‘i mai, ‘o Nāwiliwili, Kōke‘e, Kalepa Village, Hulē‘ia, a me Whaler’s Cove. Hō‘ike ‘ia nā kahua ho‘oponopono wai mea ‘ino nui a‘e ma ke ‘ano ho‘opōkole ma nā māhele ma lalo nei.

2.3.1 Ka Hana o ka Puhi Sewer and Water Company

‘O ke ana o ke kūkulu ‘ia ‘ana o ke kahua ho‘oponopono wai mea ‘ino o ka Puhi Sewer & Water Company (PSWC), he 1.0 mgd kona nui. Ho‘ohana kēia kahua ho‘oponopono wai mea ‘ino ma kahi o kekahi hapalua o ka nui i kūkulu ‘ia ai ia mea. Hiki nō ho‘i ke ho‘onui hou ‘ia a‘e ka hana e kūpono ai he 3.0 mgd inā pi‘i ka makemake i wai mea ‘ino. Ho‘oponopono ‘ia ka wai mea ‘ino ma ka hana he activated sludge, chemical coagulant addition, up-flow sand filtration, and chlorine disinfection.

2.3.2 Ke Kahua Ho‘oponopono Wai Mea ‘ino o ka Pacific Missile Range Facility

‘Ona ‘ia ke kahua ho‘oponopono wai mea ‘ino e ka Pacific Missile Range Facility (PMRF) ma lalo o ka ‘Oihana Moku Kaua o ‘Amelika Hui ‘ia a nāna e ho‘oponopono i ka wai mea ‘ino i hana ‘ia ma nā wahi e ho‘opuni mai ana. ‘Elua nō kahua ho‘oponopono wai mea ‘ino ma ka PMRF. He ho‘oponopono ke kahua ma ka hema o kēia wahi ma kahi o 10,000 gpd. ‘O ka nui o ka hana ho‘oponopono, he primary settler, he anaerobic treatment lagoon, a me kekahi secondary infiltration pond. Aia ke kahua ma ka ‘ākau ma kahi kokoke i ka puka komo ‘ākau a ho‘oponopono kēlā he 7,500 gpd. ‘O ka hana ho‘oponopono i ka wai mea ‘ino, he grit screening, he aeration chamber, sludge tank, primary and secondary clarifier, a me ke chlorine treatment. Pauma ‘ia ka wai ho‘oma‘ema‘e ‘ia mai ke kahua ho‘oponopono wai mea ‘ino i luna o kekahi pā ho‘okulu wai.

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2.3.3 Ke Kahua Ho‘oponopono Wai Mea ‘Ino o ke Kaua‘i Beach Resort Association

He ho‘oponopono ke kahua ho‘oponopono wai mea ‘ino o ke Kaua‘i Beach Resort Association (KBRA), he 140,000 gpd ka nui e hiki ai, ma kahi o 90,000 ā ka 100,000 gpd wai mea ‘ino a ho‘oku‘u ‘ia ka wai ho‘oma‘ema‘e ‘ia i loko o nā luawai ho‘ohuihui chlorine. Lawelawe ‘ia ke Kaua‘i Beach Resort a me ke Kaua‘i Villas, e ke kahua ho‘oponopono wai mea ‘ino Smith & Loveless extended aeration package, ka i kūkulu ‘ia i ka 1981. ‘Ekolu nō luawai ho‘ohuihui chlorine, akā, ‘elua wale nō e hana nei. Ma muli o ka ikaika loa o ke kaomi wai, ua ho‘opau ‘ia ho‘okahi luawai ho‘ohuihui chlorine i ka 2007.

2.3.4 Ke Kahua Ho‘oponopono Wai Mea ‘Ino o Princeville

Ua kūkulu ‘ia ke kahua ho‘oponopono wai mea ‘ino o Princeville i ka 1970 a ho‘onui hou ‘ia i ka 1987, 1990, a me ka 1994. I kēia manawa, aia kēia kahua ma luna o ‘ekolu ‘eka ‘āina he 1.5 mgd ka ‘awelika ke ana o kona kūkulu ‘ia ‘ana. Lawelawe kēia kahua i ke kaiāulu hōkele o Princeville a me ka Hanalei Bay Resort. ‘O ke ‘ano o ka ho‘oponopono ‘ana, he headworks with a mechanical bar screen, he aerated grit chamber, four activated sludge aeration basins, four rectangular final clarifiers, a chlorine contact tank, and an effluent pump station. ‘O ka hana ho‘oponopono i nā mea pa‘a, he ‘ekolu aerobic sludge digestion tanks, five sludge drying beds, and dewatering equipment. Aia a pau ka ho‘oponopono ‘ia, pauma ‘ia ka wai ho‘oma‘ema‘e ‘ia he R-2 i kekahi luawai ho‘oki‘o ma kahi ‘ē no ka hana wai ‘ana i ke kahua pā‘ani kolepa o Princeville.

2.3.5 Ke Kahua Ho‘oponopono Wai Mea ‘Ino o Po‘ipū

I kinohi, he 500,000 gpd ke ana i kūkulu ‘ia ai ke kahua ho‘oponopono wai mea ‘ino o Po‘ipū a ho‘ohana ‘ia ka hana conventional activated sludge process e hana ai i ka wai ho‘oma‘ema‘e ‘ia o ke ‘ano R-2. I ka 2004, ua ho‘onui ‘ia a‘e ka nui o ke kahua ho‘oponopono wai mea ‘ino he 1.0 mgd ma muli o ka ho‘onui hou ‘ia ‘ana o nā hana kūkulu ma ka ‘āina. Ua pani nō ho‘i ke kahua ho‘oponopono wai mea ‘ino i ka hana activated sludge me ka hana Moving Bed Bio-Reactor (MBBR) fixed film. Ua ho‘opa‘a ‘ia kekahi hana integrated fixed film activated sludge e ho‘onui hou ai i ka pono o ka hana o ka MBBR. Ua ho‘ohui ‘ia ka hana coagulation, cloth disk filtration, a me ka ultraviolet disinfection i loko o ka hana e hō‘ano hou ai i ke ‘ano o ka wai ho‘oma‘ema‘e ‘ia he R-1. Ina ‘a‘ohe kū aku ka wai ho‘oma‘ema‘e ‘ia i ke kūlana R-1, kiloi ‘ia ka wai ho‘oma‘ema‘e ‘ia i loko o ka luawai ho‘ohuihui chlorine. Inā ‘a‘ole, ho‘ohana ‘ia ka wai ho‘oma‘ema‘e ‘ia no ka hana wai ‘ana i ke kahua pā‘ani kolepa o Kiahuna a me ka hōkele o Kōloa Landing.

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Māhele 3. Ka Makemake i Kēia Mua aku

Ma loko o kēia māhele kekahi ho‘ākāka ‘ana a hō‘ulu‘ulu ‘ia nā makemake no kēia mua aku no nā kaiāulu nui ‘ehā (4) o Kaua‘i.

3.1 Ho‘ākāka

Ua hō‘ulu‘ulu ‘ia nā makemake o kēia mua aku o nā kaiāulu nui loa ‘ehā (4) o ke Kalana ‘o Kaua‘i, ‘o Waimea, Hanapēpē-‘Ele‘ele, Līhu‘e-Hanamā‘ulu, a me Wailua-Kapa‘a ma ko lākou mau hō‘ike kahua pono‘ī.

Hō‘ike ‘ia nā makemake o kēia mua aku no nā hana wai mea ‘ino o ke Kalana ‘o Kaua‘i, ‘o ia ke kahua ho‘oponopono wai mea ‘ino o Waimea, ‘Ele‘ele, Līhu‘e, a me Wailua, ma nā māhele ma lalo nei.

3.2 Ka Hana Wai Mea ‘Ino o Waimea

He ana ka papa hana kahua no ka hana wai mea ‘ino o Waimea no kona ho‘onui hou ‘ia ‘ana ā hiki i ka makahiki 2020. Ho‘okumu ‘ia nā ana kahe no kēia mua aku ma luna o ka nui hou aku o nā hale i wānana ‘ia (250 mau hale noho ‘ohana pākahī), nā hale ho‘omaha/hōkele (300), nā kahua hōkele, nā hui hana, nā hale ke‘ena a hale hana, a me nā kahua lawelawe. Aia i loko o ka papa hana hanana kūkulu a Kīkīaola no ka wā pōkole e hiki mai ana, nānā ‘ia ka hapa nui o ka nui hou aku o nā kaiāhome a me nā hōkele a nānā ‘ia i loko o Waimea a me Kekaha a me kekahi kahua pā‘ani kolepa 18 ona mau puka.

Ua kūkulu ‘ia ‘ekolu mau mana‘o no ka ho‘oponopono wai mea ‘ino. ‘O ka mana‘o mua, ‘o ia ka ho‘oponopono ‘ana i ka wai mea ‘ino e kahe ana mai Waimea me Kekaha mai me ka ‘ole o ka nui hou aku o ke kahe ‘ana mai nā hanana kūkulu o ka wā pōkole a Kīkīaola. ‘O ka ‘elua o ka mana‘o, ‘o ia ka ho‘oponopono ‘ana i ka wai mea ‘ino e kahe mai ana mai Waimea a me Kekaha hui pū ‘ia me ke kahe ‘ana mai nā hanana kūkulu a Kīkīaola o ka wā pōkole e hiki mai ana. ‘O ka ‘akolu o ka mana‘o, ‘o ia ka ho‘oponopono ‘ana i ke kahe ‘ana o ka wai mea ‘ino mai Waimea me Kekaha mai me ke kahe pū ‘ana nō ho‘i mai nā hanana a Kīkīaola o ka wā pōkole a me ka wā lō‘ihī e hiki mai ana.

‘O ka lilo i wānana ‘ia no nā ana kahe o ka wai mea ‘ino a me ke kūkulu ‘ana ā hiki i ka makahiki 2020 no Waimea, he 360,000 gpd (\$36.8 miliona), 510,000 gpd no Kekaha, 300,000 gpd no nā hanana kūkulu a Kīkīaola no ka wā pōkole e hiki mai ana, a he 1.0 mgd no nā hanana o ka wā pōkole a me ka wā lō‘ihī a Kīkīaola.

Me nā hō‘ano hou ‘ana o ka wā kokoke i hala a‘ela a me ka ho‘onui hou ‘ia ‘ana o ke kahua ho‘oponopono wai mea ‘ino ā kū i ka nui o ke ana i kūkulu ‘ia ai i kēia wā he 0.7 mgd, ho‘olawa

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‘ia nā mea e pono ai ka ho‘oponopono hou ‘ana (nā mea ho‘i i oia mau ke kūpono no kēia wā) o ka papa hana kahua. He ho‘olawa ‘ia nō nā hanana kūkulu o Kekaha o kēia mua aku i kahi o ka makahiki 2025, akā na‘e, maika‘i ke nānā hou ‘ia ka papa hana kahua e loiiloai inā he pono ka ho‘onui hou ‘ana no ke kahua o Waimea (WWTP) a i ‘ole e kūkulu ‘ia kekahi kahua ho‘oponopono wai mea ‘ino hou i Kekaha.

Ua ho‘oholo ‘ia e kekahi wehewehe ‘ano a ka SMS Research he hiki nō ke mahu‘i ‘ia ka nui aku o ka heluna kanaka i wānana ‘ia he 18% ma Waimea ā hiki i ka makahiki 2035. He ‘ae nā hō‘ano hou ‘ana o ka wā kokoke i hala a‘ela ma ke kahua a me ka ho‘onui ‘ia ‘ana o ke ana i kūkulu ‘ia ai he 0.70 mgd i ka ulu hou ‘ana o ka heluna kanaka o kēia mua aku. Me ke ana kahe o ka lā he 0.25 mgd (33 pakeneka o ke ana i kūkulu ‘ia ai), he pono kekahi papa hana kahua ke hiki aku ke kahe maoli ‘ana o ka wai mea ‘ino i ke 75 pakeneka o ke ana i kūkulu ‘ia ai (Hawai‘i Administrative Rules Title 11 Chapter 62). Ma kēia papa hana, loiiloai nā hō‘ano hou ‘ana ma nā wahi halihali (nā kahua pauma, ‘umekaumaha) a me ka pono no ka ho‘onui ‘ia ‘ana o ke kahua ma muli o ka nui aku o nā ana kahe i kuhi ‘ia.

3.3 Ka Hana Wai Mea ‘Ino o ‘Ele‘ele

He alaka‘i ka papa hana kahua no ka hana wai mea ‘ino o ‘Ele‘ele no kona ho‘onui ‘ia ‘ana ā hiki i ka 2025. ‘O nā māhele i koho ‘ia (e like me ia i ‘ōlelo ‘ia ma mua a‘e nei) e pono ai ka ho‘olālā ‘ana a nānā ‘ia ka wā pōkole, ka wā lō‘ihī iki nō, a me ka wā lō‘ihī e hiki mai ana. ‘O nā hanana kūkulu o ka wā lō‘ihī iki nō, he kaiāhome me nā hui hana nō a me ka ho‘ohui ‘ia ‘ana o kekahi hana ‘ohi kaiāhome (ke kaiāhome o Hanapēpē Uka). Ua kuhi ‘ia ka nui hou aku o ke kahe ‘ana o ka wai mea ‘ino he 115,810 gpd. Ua nui hou aku ke kahe ‘ana o ka wai mea ‘ino i ke kahua ā ka 0.87 mgd, a he ‘oi aku kēlā i ke ana i kūkulu ‘ia ai ke kahua. Ma ka māhele o ka wā lō‘ihī iki nō, pi‘i hou ka nui o ka ho‘oponopono wai mea ‘ino ‘ana he 1.2 mgd ma ke kahua o ‘Ele‘ele.

Kuhi ‘ia ka ho‘onui ‘ia ‘ana o ke kahua ho‘oponopono wai mea ‘ino o ‘Ele‘ele ā hiki i ka 2025. ‘O nā hanana kūkulu i hāpai ‘ia no kēia wahi, ‘o ia nā kahua kaiāhome a me nā hui hana, a ‘ona ‘ia kekahi o ia mau mea e ka ‘Oihana ‘Āina Ho‘opulapula Hawai‘i (DHHL). Inā ‘a‘ole e ho‘oku‘i ka ‘āina o ka DHHL i ka hana wai mea ‘ino a ke Kalana, ‘a‘ole pono ka ho‘onui ‘ana i ka wā lō‘ihī e hiki mai ana, akā, pono e pani ‘ia nā mīkini kahiko. Kuhi ‘ia ka lilo no ka ho‘oponopono ‘ana ma kahi o ka \$15.2 miliona.

Inā ho‘oku‘i ‘ia nō ka ‘āina o ka DHHL, a laila, pono ka ho‘onui hou ‘ia ‘ana o ke kahua i ka wā lō‘ihī e hiki mai ana e kūpono ai ke kahe ‘ana he 1.39 mgd. Me kēia ho‘onui ‘ana, hui ‘ia nā paipu nui hou a‘e ma ke Alaloa Kaumuali‘i, kekahi paipu ‘umekaumaha ‘ohi mea ‘ino no ke kahua ho‘oponopono wai mea ‘ino a me kēia mau mea nei: new anoxic aerobic tanks/mixers, a new clarifier, new effluent filter, and new ultraviolet disinfection system. Kuhi ‘ia ke kumu kū‘ai o kēia mau mea nei ma kahi o \$26.0 miliona.

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Me nā hō‘ano hou ‘ana o ka wā kokoke i hala a‘ela a me ka ho‘onui hou ‘ia ‘ana o ke kahua ho‘oponopono wai mea ‘ino ā kūpono i ke ana i kūkulu ‘ia ai o kēia wā he 0.8 mgd, he ho‘olawa ‘ia kekahi hapa o ka ho‘oponopono ‘ana o ka wā lō‘ihī e hiki mai ana (nā mea ho‘i i oia mau ke kūpono). Kuhi ‘ia he ho‘omaka ke kahua ho‘oponopono wai mea ‘ino e hō‘ea aku i kona nui piha i ka wā nō e ho‘oponopono ‘ia ana ke kahua no ka wā lō‘ihī. Aia i ka wā o ka ho‘oponopono ‘ana, he pono nō paha e nānā hou ‘ia ka papa hana kahua.

Ua ho‘oholo ‘ia ma kekahi wehewehe ‘ano ‘oko‘a a ka SMS Research he hiki ke mahu‘i ‘ia ka nui hou ‘ana aku o ka heluna kanaka he 15% i ka hiki ‘ana mai o ka 2035 ma kahi o ‘Ele‘ele. ‘O ke ana i kūkulu ‘ia ai ke kahua he 0.80 mgd a hiki ke ho‘olawa ‘ia ka makemake o ka pi‘i ‘ana o ka heluna kanaka o kēia mua aku. Me ka ‘awelika ana kahe he 0.40 mgd (50 pakeneka o ka nui i kūkulu ‘ia ai), he pono kekahi papa hana kahua hou ke piha aku ke kahe ‘ana o ka wai mea ‘ino he 75 pakeneka o ka nui i kūkulu ‘ia ai (Hawai‘i Administrative Rules Title 11 Chapter 62). Na kēia papa hana kahua e loiilo i nā hō‘ano hou ‘ana ma nā wahi ‘ohi‘ohi (nā kahua pauma, ‘umekaumaha) a me ka ho‘onui hou ‘ia ‘ana o ke kahua ma muli o ka nui hou aku i kuhi ‘ia ma nā ana kahe.

3.4 Ka Hana Wai Mea ‘Ino o Līhu‘e

Ma muli o nā makemake o kēia mua aku, he pono nō e ho‘oponopono hou ‘ia ke kahua ho‘oponopono wai mea ‘ino o Līhu‘e a i ‘ole pono e kuapo ‘ia nā hana/kahua ‘ohi e kū nei. Akā na‘e, ua lawa nō ka nui o ke kahua ho‘oponopono wai mea ‘ino o Līhu‘e ā hiki i ka 2025, ‘oiai ke ho‘ohana ‘ia nei he hapalua like wale nō o ka nui he 2.5 mgd. Inā he mea pono ka ho‘onui hou ‘ia ‘ana o ke kahua ho‘oponopono wai mea ‘ino, a laila, lawa nō ka lumi ma nā ‘āina e ho‘opuni mai ana.

Ua loiilo ‘ia nā mana‘o ma lalo nei no ke kahua ho‘oponopono wai mea ‘ino o Līhu‘e ma ka papa hana kahua wai mea ‘ino o Līhu‘e:

1. Kaupalena ‘ia ka Ho‘onui ‘ana – Ka ho‘oholo ‘ana, ka ho‘oponopono kūmau, a me ke kuapo ‘ia ‘ana o nā mea hana ho‘oponopono wai mea ‘ino e kū nei.
2. Līhu‘e Wale Nō – Ho‘ohuli i nā hanana kūkulu hou (Hanamā‘ulu Triangle, Kaua‘i Lagoons, Līhu‘e Mill, Molokoa Homes 2, Ahukini Mauka, and Ahukini Makai) ma kahi o Līhu‘e, me nā wahi pū ‘a‘ohe one luawai pelapela, i ke kahua ho‘oponopono wai mea ‘ino o Līhu‘e.
3. Kahi o Līhu‘e a me ka ‘Āina ma ka ‘Ākau aku o Ahukini Makai – Ho‘ohuli i nā hanana kūkulu hou (Hanamā‘ulu Triangle, Kaua‘i Lagoons, Līhu‘e Mill, Molokoa Homes 2, Ahukini Mauka, and Ahukini Makai) ma kahi o Līhu‘e, me nā wahi pū nō ‘a‘ohe ona luawai pelapela a me ka ‘āpana ‘āina ma ka ‘ākau aku o Ahukini Makai i ke kahua ho‘oponopono wai mea ‘ino o Līhu‘e.

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4. Ke Kahua Ho‘oponopono Wai Mea ‘Ino Hou i ‘Ona ‘ia ma Ahukini – Ho‘ohuli i kekahi hapa o nā hanana kūkulu hou (Hanamā‘ulu Triangle, Kaua‘i Lagoons, Līhu‘e Mill, Molokoa Homes 2), me nā wahi pū nō ‘a‘ohe ona luawai pelapela i ke kahua ho‘oponopono wai mea ‘ino o Līhu‘e. He lawelawe ke kahua ho‘oponopono wai mea ‘ino hou i ‘ona ‘ia ma Ahukini iā Ahukini Mauka a me Ahukini Makai.

Ua loiilo iā nā mana‘o a pau ‘ehā a waewae ‘ia ma ke ‘ano he hanana kūkulu no ka wā pōkole, he wā lō‘ihī iki nō, a he wā lō‘ihī. No kēia mau mana‘o a pau, ‘o ka ‘awelika kahe wai mea ‘ino o ka lā (average daily wastewater flow: ADWF) no ka wā pōkole, he 1.6 mgd, a ‘o ke ana o ke kahe wai mea ‘ino i ka wā piha o ka ua (peak wet weather wastewater flow: PWWF), he 5.9 mgd. ‘O ka ADWF no ka wā lō‘ihī iki nō, he 2.0 mgd, a ‘o ka PWWF, he 7.3 mgd. ‘O ka ADWF o ka wā lō‘ihī, he 2.9 mgd, a ‘o ka PWWF, he 10.9 mgd. Ua loiilo iā nā mana‘o ‘ehā ma muli o nā ana like ‘ole a ‘o ka mana‘o i paipai ‘ia, ‘o ia ka Mana‘o 2 – ke kahe ‘ana ma Līhu‘e wale nō.

Me nā hō‘ano hou ‘ana a me ka ho‘onui hou ‘ia ‘ana o ke kahua ho‘oponopono wai mea ‘ino e kūpono ai ke ana i kūkulu ‘ia ai o kēia wā he 2.5 mgd, hiki ke ho‘okō ‘ia nā mana‘o o ka papa hana kahua no ka wā pōkole a me ka wā lō‘ihī iki (‘o nā mea ho‘i i oia mau ke kūpono). Aia i kahi o ke kūkulu ‘ana, he pono nō paha ka ho‘oponopono ‘ia ‘ana o nā paipu lawe mea ‘ino ‘umekaumaha nui a me nā kahua pauma e kū nei. Ho‘olawa ‘ia nō paha ka mea e pono ai ke ana kahe wai mea ‘ino i wānana ‘ia he 2.9 mgd i ka wā lō‘ihī, akā na‘e, he pono nō paha ke Kalana e no‘ono‘o i ka nānā hou ‘ana a hō‘ano hou ‘ana paha i ka papa hana kahua.

Ua ho‘oholo kekahi wehewehe ‘ano ‘oko‘a a ka SMS Research he hiki ke mahu‘i ‘ia ka pi‘i ‘ana o ka heluna kanaka he 60% ā hiki i ka 2035 ma kahi o Līhu‘e. He ‘ae nā hō‘ano hou ‘ana ma ke kahua i ka wā kokoke i hala a‘ela a me ka ho‘onui hou ‘ia ‘ana he 2.5 mgd ke ana i kūkulu ‘ia ai i kekahi hapa o kēia pi‘i ‘ana o ka heluna kanaka o kēia mua aku. Aia i ka māhelehele ‘ia ‘ana o kēia pi‘i ‘ana o ka heluna kanaka, he pono nō paha kekahi papa hana kahua hou. Me ka ‘awelika ana kahe o ka lā he 1.10 mgd (44 pakeneka o ka ana i kūkulu ‘ia ai), he pono nō kekahi papa hana kahua hou ke piha aku ke ana o ke kahe ‘ana o ka wai mea ‘ino i ke 75 pakeneka o ke ana i kūkulu ‘ia ai (Hawai‘i Administrative Rules Title 11 Chapter 62). Nā kēia papa hana kahua e loiilo i nā hō‘ano hou ‘ana ma nā wahi ‘ohi (nā kahua pauma, ‘umekaumaha) a me ka ho‘onui hou ‘ia ‘ana o ke kahua ma muli o ka pi‘i ‘ana i kuhi ‘ia no ke ana o ke kahe ‘ana.

3.5 Ka Hana Wai Mea ‘Ino o Wailua

Ua ho‘opau ‘ia ka papa hana kahua o Wailua i ka 2008 a he alaka‘i ia no ka ho‘onui hou ‘ana ā ka 2025. He pi‘i nā makemake no ka wai mea ‘ino no kahi o Wailua me ka pi‘i pū nō o ka nui o nā hanana kūkulu e hiki mai ana. Ua wae ‘ia nā māhele ‘ekolu (e like me ia i ‘ōlelo ‘ia ma mua a‘ela) no ka ho‘olālā ‘ana a nānā ‘ia ka ho‘oponopono ‘ana o ka wā pōkole, ka wā lō‘ihī iki, a me ka wā lō‘ihī e hiki mai ana. ‘A‘ole e ho‘onui ‘ia ke kahua ho‘oponopono wai mea ‘ino o Wailua i

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loko o ka māhele ho‘oponopono o ka wā pōkole (ke hana ‘ia maila i kēia manawa), akā, pēlā e pi‘i ai ka pono o ka ho‘oholo ‘ana a me ka ho‘oponopono kūmau ‘ana ma ke kuapo ‘ia ‘ana o nā ‘āpana kahiko. ‘O ke ana kahe o ka wai mea ‘ino me ke ana i wānana ‘ia no ka wā pōkole e kū nei he 0.5 mgd, aia ma loko o ka 1.0 mgd o ka palena o ka nui o ka ho‘oponopono wai mea ‘ino ‘ana o kēia manawa.

He ho‘onui aku nā wānana o ka wā lō‘ihī iki i ka hana ‘ohi e ho‘ohui ‘ia ai ‘o Kapaa Highlands/kaiāhome, Coconut Beach Resort, Coconut Plantation Village, a me nā wahi like ‘ole ma Wailua me nā luawai pelapela e pau nei ka pono. ‘A‘ole ho‘ohui ‘ia i loko o kēia mau ana kahe i kuhi ‘ia ka hanana kūkulu o ka DHHL, a he ho‘onui hou aku nō kēia banana i ke kahe ‘ana i ka wā lō‘ihī iki a‘e. ‘Ike ‘ia nō ho‘i ka loli o ke ana kahe ma muli o ka hanana kūkulu, ‘o ka Hanamā‘ulu Triangle a me Hanamā‘ulu Housing, ma ke emi ‘ana o ka nui ma ke kahua ho‘oponopono wai mea ‘ino o Wailua. No ka ho‘onui hou ‘ana i ka hana ‘ohi me Kapa‘a Uka pū kekahi, kuhi ‘ia ke kumu kū‘ai he \$60 miliona a ‘oi.

No nā wānana no ka wā lō‘ihī, he pono e ho‘onui hou ‘ia ke kahua ho‘oponopono wai mea ‘ino o Wailua ā ka nui he 2.0 mgd, a ‘o ia ka palena nui o ka nui o ke kahe ‘ana, ‘oiai ua kaupalena ‘ia ka hana ma muli o ke keu o kēia manawa. ‘O nā hanana kūkulu i hāpai ‘ia, he luawai pelapela i pau ka pono ka hapa nui aia ma Kapa‘a. Ke hala aku ka nui o ke kahe ‘ana o ka wai mea ‘ino no nā hanana kūkulu o kēia mua aku a i ‘ole no nā luawai pelapela e pau nei ka pono o na ‘āina ā puni i ka 2.0 mgd, he pono nō paha kekahi kahua ho‘oponopono wai mea ‘ino ma Kapa‘a. ‘A‘ole i ho‘ohui ‘ia i loko o nā ana kahe wai mea ‘ino i kuhi ‘ia ka hanana kūkulu o ka DHHL i hāpai ‘ia ma Wailua. Hiki nō ke ho‘omaka ‘ia kekahi kahua ho‘oponopono wai mea ‘ino i hāpai ‘ia ma Kapa‘a ma ke ‘ano he kahua membrane bioreactor (MBR) li‘ili‘i me ka nui ho‘oponopono wai mea ‘ino aia ma kahi o 0.5 mgd.

Me nā hō‘ano hou ‘ana a me ka ho‘onui hou ‘ia ‘ana o ke kahua ho‘oponopono wai mea ‘ino ā kū i ke ana i kūkulu ‘ia ai o kēia wā he 1.5 mgd, hiki ke ho‘okō ‘ia nā ho‘oponopono o ka wā pōkole a me ka wā lō‘ihī iki (‘o nā mea ho‘i i oia mau ke kūpono) no loko mai o ka papahana kahua. Aia i kahi o nā hanana kūkulu (Hanamā‘ulu, DHHL, a me Kapa‘a), he pono nō paha e ho‘oponopono ‘ia a kuapo ‘ia nā paipu lawe mea ‘ino ‘umekaumaha a me nā kahua pauma e kū nei. I mea e kūpono ai ke ana kahe wai mea ‘ino o ka wā lō‘ihī he 2.0 mgd, he pono e no‘ono‘o ke Kalana i ka nānā hou a hō‘ano hou ‘ana paha i ka papa hana kahua.

Ua ho‘oholo kekahi wehewehe ‘ano ‘oko‘a o ka SMS Research he hiki ke mahu‘i ‘ia ka pi‘i ‘ana o ka heluna kanaka ma kahi o Wailua he 20% ka ‘oi a‘e ā hiki i ka 2035. He 1.5 mgd ke ana i kūkulu ‘ia ai ke kahua a hiki ke ho‘olawa ‘ia nā makemake o kēia pi‘i ‘ana o ka heluna kanaka. Me ka ‘awelika kahe o ka lā he 0.6 mgd (40 pakeneka o ke ana i kūkulu ‘ia ai), he pono kekahi papa hana kahua hou ke hiki aku ke ana kahe o ka wai mea ‘ino i ke 75 pakeneka o ke ana i kūkulu ‘ia ai (Hawai‘i Administrative Rules Title 11 Chapter 62). Na kēia papa hana kahua e

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loilo i nā hō‘ano hou ‘ana ma nā wahi ‘ohi (nā kahua pauma, ‘umekaumaha) a me ka ho‘onui hou ‘ia ‘ana o ke kahua ma muli o ka pi‘i ‘ana i kuhi ‘ia no nā ana kahe.

Māhele 4. Nā Ho‘oponopono ‘ana i Hāpai ‘ia

Na kēia māhele e ho‘ākāka a hō‘ulu‘ulu i nā ho‘oponopono ‘ana i hāpai ‘ia no nā kaiāulu nui ‘ehā (4) o Kaua‘i.

4.1 Ho‘ākāka

Ua hō‘ulu‘ulu ‘ia nā ho‘oponopono ‘ana i hāpai ‘ia no nā kaiāulu nui ‘ehā (4), ‘o ia ho‘i, ‘o Waimea, Hanapēpē-‘Ele‘ele, Līhu‘e-Hanamā‘ulu, a me Wailua-Kapa‘a ma loko o kēlā me kēia papa hana kahua.

Ma nā māhele ma lalo nei, hō‘ike ‘ia nā ho‘oponopono ‘ana i hāpai ‘ia me nā lilo pū i pili (ke loa‘a) no ka hana wai mea ‘ino o ke Kalana ‘o Kaua‘i, ‘o ia ho‘i ke kahua ho‘oponopono wai mea ‘ino o Waimea, ke kahua ho‘oponopono wai mea ‘ino o ‘Ele‘ele, ke kahua ho‘oponopono wai mea ‘ino o Līhu‘e, a me ke kahua ho‘oponopono wai mea ‘ino o Wailua.

4.2 Ka Hana Wai Mea ‘Ino o Waimea

Ua hō‘ano hou ‘ia ke kahua ho‘oponopono wai mea ‘ino o Waimea i kekahi wā kokoke i hala a‘ela ma ke ‘ano he māhele ia o ka Māhele I o ka hanana ho‘onui ā kū i ke kūlana kahua R-1 me ke ana kūkulu he 700,000 gpd. Aia i loko o kēia hō‘ano hou ‘ia ‘ana o ke kahua kēia mau mea: new headworks facility, new Moving Bed Biofilm Reactor (MBBR), dissolved air flotation (DAF) unit, tertiary filtration, an ultraviolet disinfection process, a dewatering facility (centrifuge), and a new photovoltaic system (125 kW). Aia i loko o ka māhele a‘e o ka hana wai mea ‘ino o Waimea ka māhelehele ‘ana ma ke ‘ano R-1 a me ka ho‘onui hou ‘ia ‘ana o ka hana lawe mea ‘ino o Kekaha. No ka hana māhelehele R-1 no kahi o Waimea, he pono e hana ‘ia kekahi hō‘ike hou, he Basis of Design and Engineering Design Report a pono e ‘āpono ‘ia e ka Papa Ola o ka Moku‘āina ‘o Hawai‘i. Pauma ‘ia ka wai i ho‘oma‘ema‘e ‘ia o ke ‘ano R-1 i loko o ka luawai ho‘oki‘o o Kīkīaola. Na ‘elua mau pahu ho‘ohuihui chlorine e kōkua i ka wai ho‘oma‘ema‘e ‘ia he R-1.

Ua pau kekahi wehewehe ‘ano no ka hana lawe mea ‘ino o Kekaha i ka 2009 (ka Papa Hana Kahua o ka WWTP) a ua ho‘oholo ‘ia ‘a‘ole pono kekahi hana ‘ohi/ho‘oponopono wai mea ‘ino ma muli o ka pipi‘i ‘ino loa no ke kūkulu ‘ana. ‘A‘ole i ho‘ohui ‘ia i loko o ke kumu kū‘ai ke kū‘ai ‘ia ‘ana o ka ‘āina, pēlā ho‘i e pi‘i hou aku ai ka huina nui o ke kumu kū‘ai no kēia hanana.

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4.3 Ka Hana Wai Mea ‘Ino o ‘Ele‘ele

Ua māhele ‘ia ka papa hana kahua no ka hana wai mea ‘ino o ‘Ele‘ele ma loko o ‘ekolu mau māhele ho‘olālā (e like me ia i ‘ōlelo ‘ia ma mua a‘ela), ‘o ia ho‘i ka wā pōkole, ka wā lō‘ihī iki, a me ka wā lō‘ihī. Ke kūkulu ‘ia mai nei nā ho‘oponopono ‘ana o ka wā pōkole. Aia i loko o nā ho‘oponopono ‘ana o ka wā lō‘ihī iki e ho‘onui hou ‘ia ai ke kahua ā piha 1.2 mgd, ‘o ia kēia mau ho‘ololi ‘ana ma ke kahua ho‘oponopono wai mea ‘ino o ‘Ele‘ele:

- Kūkulu i kekahī anoxic tank hou a me ‘elua aerobic train
- Ho‘opa‘a i ka ‘akolu o ka centrifugal blower
- Kūkulu ‘elua hou circular clarifier hou
- Ho‘opa‘a ‘elua cloth disk filter
- Kūkulu i kekahī hana ultraviolet disinfection hou
- Kūkulu i kekahī hana gravity belt thickening hou
- Kūkulu i kekahī hale uila hou
- Kū‘ai i ‘āina hou aku no nā kahua hou aku

‘O ke kumu kū‘ai i kuhi ‘ia no ka ho‘onui ‘ana o ka wā lō‘ihī iki ā kū i ka 1.2 mgd, aia ma kahi o \$16.1 miliona, a ‘a‘ole i hui ‘ia i loko o ia kumu kū‘ai ke kū‘ai ‘ia ‘ana o ka ‘āina.

Aia ke ‘ano o nā ho‘oponopono ‘ana o ka wā lō‘ihī i ka ho‘oku‘i ‘ia ‘ana o ke kaiāhome DHHL ma Hanapēpē me ka hana ‘ohi o ke Kalana a ‘a‘ole paha. Helu papa ‘ia nā ho‘oponopono ‘ana o ka wā lō‘ihī no kēia mau mana‘o ‘elua ma ka papa ma lalo nei:

Papa 4-1. Nā Ho‘oponopono ‘ana o ka Wā Lō‘ihī

Ho‘oponopono i ka Wā Lō‘ihī (Ho‘oku‘i ‘ia nō)	Ho‘oponopono i ka Wā Lō‘ihī (‘A‘ole ho‘oku‘i ‘ia)
Replace the 8” trunk sewer in Kaumuali‘i Highway with a new 15” line	Replace the existing collection system pump stations with new pump stations
Replace the existing 15” and 18” sewer pipes in Kaumuali‘i Highway with new 21” pipes	Construct a new aerobic digester
Construct anoxic and aerobic tanks that mirror the existing tanks	Construct possibly a new reclaimed water pump station for plant effluent reuse

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Construct a new circular clarifier	Increase plant staffing
Install a new effluent filter unit	Expand electrical distribution for new facilities
Construct a new ultraviolet disinfection train	

‘O ke kumu kū‘ai i kuhi ‘ia no nā ho‘oponopono ‘ana no ka wā lō‘ihī, he \$15.2 miliona, ‘a‘ole i ho‘ohui ‘ia ke kū‘ai ‘ia ‘ana o ka ‘āina i loko.

‘O ke kumu kū‘ai no nā ho‘oponopono ‘ana no ka wā lō‘ihī (me ke kahe ‘ana o ka wai mea ‘ino o ka DHHL), ua kuhi ‘ia he \$26.0 miliona. ‘O ka ho‘onui ‘ana e pono ai, he 1.39 mgd ka ‘awelika inā ho‘oku‘i nō ka DHHL me ka hana wai mea ‘ino o ke Kalana.

‘A‘ohe ho‘olālā ‘ana no ke kūkulu ‘ia ‘ana o kekahi hana photovoltaic e kōkua ai i ka ho‘omakauli‘i ‘ana i ke kālā. ‘A‘ole na‘e pēlā ka mana‘o no ke kahua ho‘oponopono wai mea ‘ino o Waimea.

4.4 Ka Hana Wai Mea ‘Ino o Līhu‘e

Ua lawa ka nui o ke kahua ho‘oponopono wai mea ‘ino o Līhu‘e ā hiki i ka 2025, akā, he pono nō e ho‘oponopono/kuapo ‘ia kekahi o nā mea hana. Ua loiilo i waewae ‘ia nā hanana ho‘oponopono/kuapo like ‘ole ma ia kahua ma nā māhele he wā pōkole, ka wā lō‘ihī iki, a me ka wā lō‘ihī. Ua pau ka hapa nui o nā hanana ho‘oponopono o ka wā pōkole i ke kūkulu ‘ia. He pono nō ho‘i e hō‘ano hou/hō‘oponopono ‘ia ka hana ‘ohi wai mea ‘ino.

Ua loiilo ‘ia kekahi mau ‘ano o ka hana ‘ohi ma ka Papa Hana Kahua Ho‘oponopono Wai Mea ‘Ino a waewae ‘ia ma nā māhele wā lō‘ihī iki me ka wā lō‘ihī. Ma ia hope mai, ua ho‘ohāiki hou ‘ia nā mana‘o i hāpai ‘ia ma ‘elua mau koho me nā kuhi ‘ana no ke kumu kū‘ai:

1. Ho‘ohuli hou i ke kahe ‘ana mai ke kahua ho‘oponopono wai mea ‘ino o Hanamā‘ulu ā ke kahua o Līhu‘e ma o ke Alaloa Kapule wā pōkole \$4.41M, wā lō‘ihī iki \$3.77M, a me ka wā lō‘ihī \$15.26M
2. Kūkulu i kekahi paipu kōkua hou ma Ala Ahukini wā pōkole \$5.71M, wā lō‘ihī iki \$3.77M, a me ka wā lō‘ihī \$15.26M

Penei ka hō‘ulu‘ulu ‘ana no nā mana‘o nui no ka wā lō‘ihī iki no ke kahua ho‘oponopono wai mea ‘ino o Līhu‘e:

Nā hana noi‘i a me nā ho‘oponopono/kuapo ‘ana i hāpai ‘ia

- a. Repair or replace aeration system with more efficient diffusers/blowers

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- b. Install/replace flow meters and telemetry in all WWPS and at the WWTP
 - c. Repair or replace septage-receiving station
2. Huina nui o ke kumu kū‘ai waiwai no ka wā lō‘ihī iki - \$12.0M
- Penei ka hō‘ulu‘ulu no nā mana‘o nui i hāpai ‘ia no ka wā lō‘ihī no ke kahua ho‘oponopono wai mea ‘ino:
- 1. Hana ‘ohi
 - a. Install sewer lines for Ulu Mahi/Pua Loke
 - b. Install sewer lines for Nāwiliwili/Kupolo
 - c. Install sewer lines for Kapaia
 - 2. Hana nui no ke kahua ho‘oponopono wai mea ‘ino
 - a. Provide new support facilities
 - b. Add another primary clarifier
 - c. Add another sludge thickener (DAFT) tank
 - d. Convert the existing secondary digester to a primary digester
 - 3. Hana kiloi wai ho‘oma‘ema‘e ‘ia
 - a. New aboveground cover R-1 storage tank
 - b. New R-1 pump station
 - c. New R-1 distribution piping
 - d. New spray irrigation system for Līhu‘e Airport
 - 4. Huina nui o ke kumu kū‘ai waiwai o ka wā lō‘ihī - \$35.6M

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‘A‘ohe ho‘olālā ‘ana e kūkulu ‘ia kekahi hana photovoltaic (“green infrastructure”) e kōkua ai i ka ho‘omakauli‘i ‘ana i ke kālā. ‘A‘ole pēlā ka mana‘o no ke kahua ho‘oponopono wai mea ‘ino o Waimea.

4.5 Ka Hana Wai Mea ‘Ino o Wailua

Loiloi a waewae ‘ia nā ho‘oponopono ‘ana no ka hana wai mea ‘ino o Wailua ma ke ‘ano he wā pōkole, wā lō‘ihī iki, a me ka wā lō‘ihī. Ke hana ‘ia mai nei nā ho‘oponopono ‘ana o ka wā pōkole e like me ia i ‘ōlelo ‘ia ma mua a‘e nei. Na nā ho‘oponopono ‘ana o ka wā lō‘ihī iki e kaha ki‘i ‘ia mai nei i kēia manawa e ho‘ihō‘i hou i ka nui e hiki ai ma ke kahua ho‘oponopono wai mea ‘ino o Wailua i ka 1.5 mgd.

‘O kēia kekahi o nā ho‘oponopono ‘ana o ka wā lō‘ihī iki:

- Construct a new generator and electrical building
- Construct additional surge basins
- Replace the DAF sludge thickener
- Construct a new grit system at the headworks
- Expand the existing collection system to include areas in Kapa‘a with failing cesspools

Kuhi ‘ia ke kumu kū‘ai no nā ho‘oponopono ‘ana no ka wā lō‘ihī iki ma ke kahua ho‘oponopono wai mea ‘ino o Wailua aia ma kahi o \$7.6 miliona. Inā ho‘okomo ‘ia ka hana ‘ohi o Kapa‘a ma kai ma muli o ka pau ‘ana o ka pono o nā luawai pelapela, kuhi ‘ia ke kumu kū‘ai no ke kūkulu ‘ana no kēia māhele ma kahi o \$36.4 miliona.

He pono kēia mau hana e ho‘onui ai i ka nui e hiki ai ma ke kahua ho‘oponopono wai mea ‘ino o Wailua no ka wā lō‘ihī:

- Construct new headworks
- Construct a new locker room/storage building
- Construct a new ultraviolet disinfection system to replace the chlorination system
- Construct an influent gravity line

Kuhi ‘ia ke kumu kū‘ai no nā ho‘oponopono ‘ana ma ke kahua ho‘oponopono wai mea ‘ino o Wailua no ka wā lō‘ihī ma kahi o \$7.7 miliona. Inā pono kekahi kahua ho‘oponopono wai mea ‘ino hou ma Kapa‘a ma muli o ka piha ‘ana o ke kahua ma Wailua a ‘oi a‘e i ka nui e hiki ai ma laila he 2.0 mgd, kuhi ‘ia ke kumu kū‘ai no ke kūkulu ‘ia ‘ana o kēia kahua hou ma kahi o \$20.9

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miliona. He kahua MBR ke kahua ho‘oponopono wai mea ‘ino o Kapa‘a e ‘ōlelo ‘ia nei me ka headworks, surge basins, biological treatment units (aerobic, anoxic, and anaerobic tanks), blower building, membrane tanks, UV disinfection tank, aerobic digester, sludge thickening/dewatering facilities, and effluent disposal facilities.

‘A‘ohe ho‘olālā ‘ana no ke kūkulu ‘ana i kekahi hana photovoltaic (“green infrastructure”) e kōkua ai i ka ho‘omakauli‘i ‘ana i ke kālā. ‘A‘ole pēlā ka mana‘o no ke kahua ho‘oponopono wai mea ‘ino o Waimea.

**KA PAPA HANA LAULĀ I HŌ‘ANO HOU ‘IA
WEHEWEHE ‘ANO NO NĀ PONO KŪLANAKAUHALE O KAUAI**

KA HANA ‘ŌPALA PA‘A

Ho‘omākaukau ‘ia no

Ke Kalana ‘o Kaua‘i

Ho‘omākaukau ‘ia e

R.M. Towill Corporation

Mei 2015

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Nā Hana ‘Ōpala Pa‘a

Ka ‘Ōpala Pa‘a

‘O ke kumu o ka wehewehe ‘ano no ka pono kūlanakauhale ‘ōpala pa‘a ma kona ‘ano e pili ana i ka Papa Hana Laulā i Hō‘ano Hou ‘ia, ‘o ia ka ho‘opa‘a ‘ana i nā lula alaka‘i e alaka‘i ai i ka mālama ‘ia ‘ana o ka hana ‘ōpala pa‘a o ke Kalana. Ua ho‘opa‘a ‘ia nā pahu hopu o ka hana ‘ōpala pa‘a o ke Kalana ma loko o ka Papa Hana Ho‘oponopono ‘Ōpala Pa‘a i Ho‘ohuihui ‘ia, a i loko nō ho‘i o nā palapala ho‘olālā ‘ē a‘e no ke kaha ki‘i ‘ana i kekahi hana i ho‘ohuihui ‘ia ai ho‘oponopono ai i ke kūlana pono o ka hana ‘ohi ‘ōpala pa‘a, me ka ho‘ēmi pū i ka ‘ōpala e pono ai ke kiloi ‘ana ma ka pu‘u ‘ōpala. I kēia manawa, he kuhi ke Kalana ‘o ka nui o ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala i kahi ‘ē, he 31%. I loko o ka ‘ōlelo ho‘oholo ‘A‘ohe ‘Ōpala (Māhele 3.1) he wānana ke Kalana e hiki aku ka nui o ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala he 70% i ka hiki ‘ana mai o ka 2023 ma o ka ho‘ēmi ‘ana i ka nui o ka hana ‘ōpala ‘ana a me ka ho‘onui ‘ana i ho‘ohana hou a me ka ho‘opō‘aiāpili ‘ana.

Māhele 1. Hō‘ike Laulā no ka Hana Ho‘oponopono ‘Ōpala Pa‘a e Kū nei

Hō‘ike ‘ia ma kēia māhele kekahi hō‘ike laulā no nā polokalamu ho‘oponopono ‘ōpala pa‘a o ke Kalana ‘o Kaua‘i i pili i ka ho‘ohana hou ‘ia ‘ana o ka ‘ōpala, ka ho‘opō‘aiāpuni ‘ana, a me ke ki‘i ‘ana.

1.1 Ho‘ākāka

No ke aupuni Kalana ke kuleana nui ma ka ho‘oponopono ‘ana i ka ‘ōpala pa‘a a alaka‘i ‘ia e nā kānāwai pekelala me ka moku‘āina. Na ke Kalana e lawelawe i ka lehulehu ma ka ‘ohi ‘ana i ka ‘ōpala pa‘a, ka ho‘oholo ‘ana i nā kahua a me nā polokalamu no ka ho‘ohana hou ‘ana a me ke kiloi ‘ana, a me ka ho‘oponopono ‘ana nō ho‘i i ka ‘ōpala pa‘a.

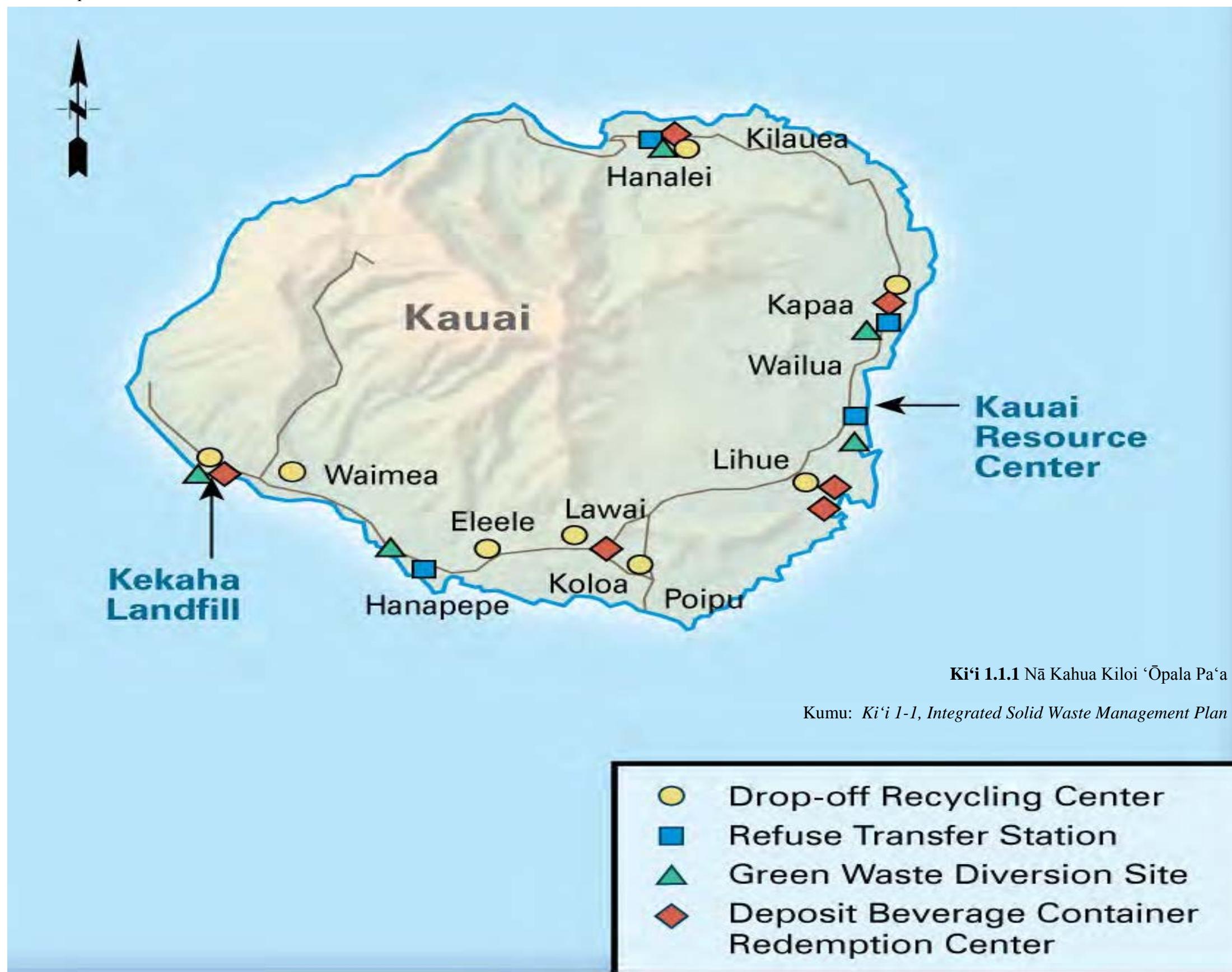
Na ke Kalana ‘o Kaua‘i e mālama i kekahi hana ā puni ka mokupuni no ka ‘ohi a me ke kiloi ‘ana i ka ‘ōpala no nā kānaka noho a me nā malihini kipa kekahi. He nui nā koho o ka lehulehu na ke Kalana no ka ho‘oponopono ‘ana i nā ‘ano ‘ōpala like ‘ole. No nā kānaka noho ka nui o nā pono o nā koho pili i ka ho‘opō‘aiāpili ‘ana a me ke kiloi ‘ōpala ‘ana a ‘a‘ole nō like loa no nā mea hana ‘ōpala o nā hui hana a me nā kānaka ‘a‘ole he po‘e noho, ‘oiai he kuhi ke Kalana he 45% ka nui loa o ka ‘ōpala kaona i hana ‘ia e nā kānaka noho. Na ke Kalana e ho‘omalu i nā polokalamu ho‘opō‘aiāpuni ma o kekahi mau hui ukupau i hai ‘ia ai ma ka palapala ‘aelike. Ma ke ‘ano laulā, ho‘ohana pū nā mea hana ‘ōpala ‘a‘ohe no nā hale ‘ohana i nā hui ukupau e kūpono ai kā lākou mau mea e ho‘opō‘aiāpuni a kiloi ai ho‘i.

‘O ke Kalana ka ‘ona o ke Kikowaena Kumu Waiwai o Kaua‘i (he kikowaena ho‘ēmi a ho‘opō‘aiāpuni ‘ōpala) aia ma Līhu‘e ma kahi kokoke i ke kahua mokulele a me ‘ehā mau kahua kiloi ‘ōpala ma Hanalei, Kapa‘a, Līhu‘e, a me Hanapēpē. Ho‘oholo ‘ia a mālama ‘ia ke Kikowaena Kumu Waiwai o Kaua‘i a me nā kahua waiho mea ho‘opō‘aiāpuni ‘ewalu ā puni ka mokupuni e kekahi hui ukupau i hai ‘ia ai ma ka palapala ‘aelike. Ke hui pū ‘ia, he ‘ae nā polokalamu ho‘opō‘aiāpuni ma nā wahī like ‘ole i nā ‘ano mea like ‘ole, ‘o nā pono hale ‘oe, nā ‘āpana hao ‘oe, ka ‘ōpala lau nahele, ka ‘aila mīkini, nā kālana ‘aila mīkini, nā taea, nā pahu

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propane, a me ka ‘aila kuke i pau ka ho‘ohana ‘ia, a no laila, pēlā e lako ai nā kānaka noho i nā kohola ho‘ohuli ma kahi o kekahi huina hui ho‘opō‘aiāpuni i kaupalena ‘ia ai. No ke Kalana nō kekahi ka pu‘u ‘ōpala nui o Kekaha (Kekaha Municipal Solid Waste Landfill: MSWLF), ka i ho‘oholo ‘ia e ka Waste Management Inc., ma lalo o kekahi palapala ‘aelike me ke Kalana (e nānā i ke Ki‘i 1.1.1).

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Nā Hana ‘Ōpala Pa‘a



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Nā Hana ‘Ōpala Pa‘a

Ho‘omalu ‘ia nā kahua ‘ōpala pa‘a a me nā lawelawe o ke Kalana e ka ‘Oihana Pono Kūlanakauhale, Māhele Kūkulu a Mālama Alanui. Ho‘okahi nō o ke Kalana luna ho‘omalu ‘ōpala pa‘a a me ho‘okahi kākau ‘olelo no lāua ke kuleana ‘o ka ho‘omalu ‘ana ma luna o ka pu‘u ‘ōpala a me ka ho‘oholo ‘ana a me ka ho‘oponopono ‘ana nō ho‘i i ka mo‘ohelu no nā polokalamu ‘ōpala pa‘a. He mau lilo nō ko ka polokalamu ‘ōpala pa‘a o ke Kalana e ho‘oholo ai i kāna mau hana a kāko‘o ‘ia e ka pu‘u kālā kiloi ‘ōpala pa‘a a ho‘olako pū ‘ia e ka Pu‘u Kālā Laulā. Hō‘ike ‘ia nā māhele o ka hana ‘ōpala pa‘a o Kaua‘i ma lalo nei.

1.2 Ka ‘Ohi ‘Ōpala Pa‘a

1.2.1 Ka Hō‘ili‘ili ‘Ōpala Hale

Ki‘i ‘ia ka ‘ōpala pa‘a kaona (municipal solid waste: MSW) ma ka‘e alanui na ke Kalana i kēlā me kēia pule no 31,297 mau waihona, me nā hale noho ‘ohana pākahi pū kekahi ma ke Kalana. Kiloi nā ka‘a ‘ohi ‘ōpala o ke Kalana i ka ‘ōpala ma nā kahua kiloi ‘ōpala kahi e ‘ōpā ‘ia ai ka ‘ōpala i luna o nā ka‘a halihali ‘a‘ohe ona pālulu a lawe ‘ia i ka pu‘u ‘ōpala nui ma Kekaha (Kekaha Municipal Solid Waste Landfill: MSWLF) ma ka ‘ao‘ao komohana o ka mokupuni.

Ma Iulai 2010, ua ho‘omaka ke Kalana i ka ho‘ololi ‘ana i kā lākou hana he ‘ohi ‘ōpala kaona i hana wale ‘ia. Ma lalo o kēia hana wale ‘ana, hā‘awi ‘ia ka po‘e noho he ka‘a halihali 96 kālani ka nui e waiho ai i ka ‘ōpala hale, a na ke Kalana e ‘ohi me kekahī ka‘a mīkini ho‘ouka ma ka ‘ao‘ao. Na ke Kalana e ho‘oholo ‘ekolu mau ala ‘ehā mau lā o ka pule (12 mau ala) a ‘ehā mau ala ‘ohi lima ‘elima lā o ka pule (20 mau ala). Ma ka ‘ohi lima ‘ana, loa‘a nā ka‘a me ka mea kalaiwa a me ‘elua po‘e ‘ohi a pono lākou e lele mai luna mai o ke ka‘a a hāpai lima i nā kini a me nā ‘eke e kiloi ai i nā ‘ōpala ma luna o ke ka‘a. Ma kēia hana, pono kēlā me kēia kanaka e hāpai 10 kana ‘ōpala i kēlā me kēia lā. Ma kekahī ‘ao‘ao, ma ka hana wale ‘ana, na ho‘okahi kanaka e kalaiwa i ke ka‘a a ho‘ohana ‘o ia i kekahī mīkini lima nāna e hāpai i nā kini waiho ‘ōpala a kiloi i ka ‘ōpala ma luna o ke ka‘a. E like nō me nā kaona he nui o ‘Amelika Hui ‘ia, ke kuapo nei ke Kalana i ka hana a ho‘ohana ‘ia kēia hana wale ‘ana e ‘ohi ai i ka ‘ōpala e ho‘ēmi ai i ka lilo a me ka ‘eha o kānaka a me ka hana, a pēlā nō ho‘i e ‘oi aku ai ka nani o nā kaiāhome.

Ma waho a‘e o ka ‘ohi ‘ōpala ‘ana ma ka‘e alanui, na ka Māhele ‘Ōpala Pa‘a e ho‘oholo ‘ehā mau kahua kiloi ‘ōpala ma nā wahi like ‘ole o Kaua‘i kahi e halihali ai nā kānaka noho i ka ‘ōpala pa‘a kaona a me ka ‘ōpala mea kanu. Hiki nō ho‘i i nā kānaka noho ke halihali pololei aku i ka ‘ōpala i ka pu‘u ‘ōpala nui o Kekaha e kiloi ai.

1.2.2 Ka Hō‘ili‘ili ‘Ōpala Hui

‘O ke ‘ano o ka ‘ōpala hui, ‘o ia ka ‘ōpala i loa‘a mai nā hōkele a me ka nui o nā hale ke‘ena hale a me ke condominium. Koe no kekahī huina hui i kaupalena ‘ia i lawelawe ‘ia e ka Māhele ‘Ōpala Pa‘a, he ‘ohi nā hui ‘ohi ‘ōpala like ‘ole i ka ‘ōpala a i ‘ole na ka hui nō e halihali aku i kā lākou ‘ōpala pono‘ī i kekahī kahua kiloi ‘ōpala a i ‘ole i ka pu‘u ‘ōpala nui.

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1.3 Nā Kahua Kiloī ‘Ōpala

Na ke Kalana e ho‘oholo ‘ehā mau kahua kiloi ‘ōpala ma Hanapēpē, Līhu‘e, Kapa‘a, a me Hanalei kahi e ho‘ohuihui ‘ia ai ka ‘ōpala mai nā ka‘a ‘ohi ‘ōpala mai a ho‘ouka ma luna o nā ka‘a halihali nui e halihali pono ai i ka pu‘u ‘ōpala nui me ka ho‘omakaui‘i pū i ke kālā. He manuahi ke kiloi ‘ia ‘ana o ka ‘ōpala kaona a me ka ‘ōpala mea kanu e nā kānaka noho o ke Kalana ma nā kahua kiloi ‘ōpala ‘ehā. ‘Ae ‘ia ke kiloi ‘ia ‘ana o ka ‘aina i pau i ka ho‘ohana ‘ia mai nā kānaka noho ma o kekahi polokalamu i kapa ‘ia Do-it Yourselfer (DIY) (Māhele 1.7). He ‘ae ke kahua ma Līhu‘e i nā ‘āpana hao a me nā ‘ōpala ke‘oke‘o. ‘O ke kahua ma Hanalei wale nō ke kahua kiloi ‘ōpala me nā pahu ‘ōpala ho‘opō‘aiāpuni ma waho a‘e o ka pu‘u ‘ōpala nui o Kekaha.

1.4 Ka Pu‘u ‘Ōpala Nui o Kekaha

‘Ona ‘ia ka pu‘u ‘ōpala nui o Kekaha e ke Kalana a ho‘oholo ‘ia e kekahi o kona mau limahana. Hai ‘ia ka Waste Management, Inc. (WMI) ma ka palapala ‘aelike nāna e ho‘oholo a nānā pono i ka hana. ‘Ōpā ‘ia ka ‘ōpala kaona i ‘ohi ‘ia e ke Kalana mai nā kānaka noho a me nā hui kū‘ai ma luna o nā ka‘a ‘a‘ohe ona pālulu ma ho‘okahi o ‘ehā mau kahua kiloi ‘ōpala i ho‘oholo ‘ia e ke Kalana no ka halihali ‘ia ‘ana aku i ka pu‘u ‘ōpala nui o Kekaha. ‘Ae ka pu‘u ‘ōpala nui o Kekaha i ka ‘ōpala pa‘a mai nā ka‘a halihali o nā hui like ‘ole kekahi a me ka lehulehu nō a aia i laila kahi e kiloi ‘ia ai nā ‘ōpala e ho‘opō‘aiāpuni ai.

Aia i loko o ka pu‘u ‘ōpala nui o Kekaha ‘elua mau wahi kiloi ‘ōpala, ‘o ia ka Māhele I a me ka Māhele II, a ‘o ia kahi nui e kiloi ‘ia ai ka ‘ōpala pa‘a ma Kaua‘i nei. Ua ho‘omaka ka hana ma ka Māhele I i kāna mau hana i ka 1953 a ua ho‘omau ‘ia ā hiki i ka pau ‘ana o kāna mau hana ma ‘Okakopa 8, 1993. Ua ho‘omaka ka Māhele II i kāna mau hana ma ‘Okakopa 9, 1993 a i kinohi, ua pa‘a kona palapala ‘ae e hiki aku i ka palena ki‘eki‘e he 37 kapua‘i ma luna a‘e o ka ‘ili kai, ‘o ia ka palena i mana‘o ‘ia ai he kūpono no ka ka ‘ōpala kaona ā hiki aku i ka 2003. Akā na‘e, i ka 1998, ua pono ka ho‘onui ‘ia ‘ana a‘e o ka Māhele II i luna hou aku he 60 kapua‘i ke ki‘eki‘e ma luna a‘e o ka ‘ili kai e kūpono ai ka pu‘u ‘ōpala pa‘a hou aku ma muli o ka makani pāhili ‘o ‘Iniki. I ka 2005, ua ‘āpono ‘ia ka Māhele II me ka ho‘onui hou ‘ana i luna ā piha 85 kapua‘i ma luna a‘e o ka ‘ili kai, a ‘o ia ka palena ki‘eki‘e i ‘ae ‘ia ai i kēia manawa. I ka 2010, i mea e ho‘onui hou ‘ia ai ka lō‘ihī o ka ho‘ohana ‘ia ‘ana o ke pu‘u ‘ōpala, ua kūkulu ‘ia ka hapa i ho‘olaulā ‘ia ai ke kahua (“Cell 1”). I kēia makahiki a‘e, he kuhi ke Kalana e ‘ae ‘ia ka ho‘olaulā hou ‘ana (“Cell 2”), a aia nō ke nānā ‘ia mai nei kona ‘āpono ‘ana. Mana‘o ‘ia e piha ka palena nui o nā wahi kiloi ‘ōpala i pa‘a ai ka palapala ‘ae o kēia manawa (e like me ka Māhele II, me ka Cell 1 pū kekahi) i ka hiki ‘ana mai o ka pau ‘ana o Malaki 2014.

Hō‘ike ka Māhele ‘Ōpala Pa‘a (SWD), ua loa‘a mai i ka pu‘u ‘ōpala nui o Kekaha ma kahi o 75,000 kana ‘ōpala pa‘a o ka makahiki i kēia mau makahiki i hala hope nei, oia mau nō me ka pi‘i pū nō o ka huina nui loa he 95,000 kana o ka makahiki i kekahi wā ma mua.

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1.5 Ke Kumu ‘Ōpala

Hō‘ike ‘ia e ke Kānāwai Kalana o Kaua‘i (Kaua‘i County Code), Mokuna 21, Ka Ho‘omalu ‘Ōpala Pa‘a i Ho‘ohuihui ‘ia,

‘O ka ho‘ēmi ‘ana i ke kumu ‘ōpala, ‘o ia ke kaha ki‘i ‘ia ‘ana, ka hana ‘ia ‘ana, a me ka ho‘ohana ‘ia ‘ana o nā mea e:

1. ho‘ēmi ai i ka nui a i ‘ole ka haumiā, a i ‘ole ‘o ia mau mea ‘elua, o ka ‘ōpala i hana ‘ia ai; a
2. ho‘ēmi ai i ka hana ‘ia ‘ana o ka ‘ōpala ma ka hana ‘ana i nā mea kū‘ai a i ‘ole ma ka ho‘ololi ‘ana paha i nā ‘ano hana a kānaka i nā mea i kū‘ai ‘ia, ka ho‘ohana ‘ana, a me ka hana ‘ana i ka ‘ōpala.

He hana nui pinepine ka helu ‘ana i nā hana e ho‘ēmi ai i ka nui o ka hana, no ka mea, i kekahi manawa, ‘a‘ole ‘ike ‘ia. ‘A‘ole like ka nui o ka ‘ike ‘ia o ka ho‘ēmi ‘ana i ka nui o ka ‘ōpala ke ho‘ohālike ‘ia me ka ho‘opō‘aiāpuni ‘ana. He hana ho‘ēmi ‘ōpala ka ho‘ohana hou ‘ana, no ka mea, pēlā e pau ai ka ‘ōpala ma kahi o ke kumu o ia mea, a pēlā ho‘i e ho‘okali a hō‘alo ‘ia ai paha ke komo ‘ana o ia ‘ōpala i loko o ka hana ‘ohi ‘ōpala. Ke ho‘oikaika nei nā ‘ano hui like ‘ole, nā kānaka noho, a me ke Kalana ma Kaua‘i e ho‘ēmi i ka nui o ka ‘ōpala ma ke kumu. ‘Oi aku ka ‘ike o nā ‘oihana o ke Kalana no nā pilikia ma ka hō‘alo ‘ana i ka ‘ōpala ma ke komo ‘ana i loko o ka polokalamu ho‘opō‘aiāpuni pepa ke‘ena o ke Kalana.

Ua komo nā hui he nui o ke Kalana i ka ho‘ēmi ‘ana i ka ‘ōpala ma ke kūkulu ‘ana i nā papa hana e ho‘ohana hou ai nā kānaka noho i nā mea i kū‘ai ‘ia ma kahi o ke kū‘ai ‘ana i nā mea kū‘ai hou. ‘O kekahī o kēia mau hui, ‘o ia ho‘i:

- Aloha Shares Network. Na ka Maui Recycling Group i kūkulu i kēia polokalamu ā puni ka moku‘āina. Ma ‘Aukake 2005, ua ‘āpono mai ke Komikina Kalana e ‘ae i ka ‘ona ‘ana i ke Kaua‘i Aloha Shares Network. He papa hana ho‘ohana hou ‘ana i nā mea uila nānā e hō‘ike i nā mea like ‘ole no ka ho‘ohana hou ‘ana i nā mea like ‘ole e hō‘alo ai i ka ‘ōpala mai ka pu‘u ‘ōpala aku. I kēia manawa, ‘a‘ole nui ka hana o kēia papa hana, akā, mana‘olana ke Kalana e pi‘i ka nui o ka hā‘awi ‘ana i kēia mua aku.
- Nā Pā Mālama Pua‘a. ‘Ohī nā hui mālama pua‘a i ka ‘ōpala mea‘ai mai nā hōkele a me nā hale ‘aina mai, a me ka hale pa‘ahao pū o ke Kalana no ka hānai ‘ana i nā pua‘a. I ka makahiki waihona kālā 2013, ua ho‘opō‘aiāpuni nā pā hānai pua‘a he 256 kana ‘ōpala ke kuhi ‘ana no ka hānai ‘ana i ka pua‘a.

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- Habitat for Humanity. ‘Ohia ho‘ohana hou kēia hui kālā ho‘opukapuka ‘ole i nā pono hale no nā hanana kūkulu hale. Ho‘oholo nō ho‘i lākou i kekahī hale kū‘ai emi i Hanapēpē no ke kū‘ai hou ‘ana i nā mea kūkulu hale a me nā pono hale like ‘ole kekahī.
- Nā Hale Kū‘ai Emi. ‘O ka hana o ka hale kū‘ai emi, ‘a‘ole he ala e hā‘awi manawale‘a ai nā kānaka noho i nā mea like ‘ole, e like me ka lole a me nā pono hale, akā, pēlā e hiki ai ke kū‘ai ‘ia ai ua mau mea lā no ke kumu kū‘ai emi loa. He nui nō nā Hale kū‘ai emi ma nā wahi like ‘ole o ke Kalana, e like me kēia:
 - Kaua‘i Humane Society Thrift Store ma Līhu‘e;
 - Salvation Army Thrift Stores ma Līhu‘e me Hanapēpē;
 - Wilcox Hospital Auxiliary ma Līhu‘e; a me ka
 - Habitat for Humanity Thrift Store ma Hanapēpē.
- Lekio Kuapo. He papa hana lekio kū lā kēia ma ke KONG AM 570 e hiki ai i ka po‘e kāhea ke kū‘ai, kū‘ai lilo, a i ‘ole kuapo i nā mea i pau ka ho‘ohana ‘ia.
- Ho‘ohana Hou i ka Pinaki Hu‘a. Loa‘a ma ke Ke‘ena Ho‘opō‘aiāpuni o ke Kalana kekahī papa hana waiho a kuapo paha no ka pinaki hu‘a mea ho‘opihapiha a me ka wahī hu‘ahu‘a ma ka lumi ho‘olulu o ke Kikowaena Kumu Waiwai o Kaua‘i. He wahi kēia no nā kānaka noho a me nā hui li‘ili‘i e waiho a ki‘i ai paha i nā mea i halihali ‘ia a he kāki ‘ole ke ‘ano. ‘A‘ole helu ke Kalana i ka nui o ka po‘e ho‘ohana a i ‘ole ka huina, akā, nui ke kuapo ‘ia ‘ana o nā mea like ‘ole i kēlā me kēia lā.
- Kaua‘i Food Bank. Hui pū kēia hui waiwai ho‘opukapuka ‘ole kūloko me nā hui, nā hale kū‘ai mea‘ai, nā kula, a me nā mahi ‘ai e ho‘ēmi ai i ka ‘ōpala mea‘ai kūpono. I kēlā me kēia mahina, na ke Kaua‘i Food Bank e hānai kokoke piha 6,000 po‘e kānaka i pono ai ma ka māhelehele ‘ana he 100,000 paona mea‘ai a ‘oi.

1.5.1 Ka Ho‘ona‘auao

Paipai ke Kalana i ka ho‘ēmi ‘ana i ka ‘ōpala a me ka ho‘ohana hou ‘ana ho‘i ma nā ‘ano like ‘ole, ‘o ia ho‘i, ma ka ho‘olaha ‘ana i ka ‘ike ma loko o ke Kaua‘i Recycling Guide, nāna pane i nā kelepona ‘ana ma ke Ke‘ena Ho‘opō‘aiāpuni, a mālama ke Kalana i kekahī ke‘ena a wala‘au kūkā pū me nā kānaka noho ma nā ho‘olaule‘a like ‘ole, a wala‘u nā limahana me nā kamali‘i kula, a ho‘olaha ‘ia ka ‘ike ma kona ‘ao‘ao o ka internet.

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Paipai ke Kalana i nā kānaka noho e ho‘ēmi i ka ‘ōpala ma ka ho‘ohana ‘ana i nā ‘eke huluhulu i hana ‘ia ai i ka ma‘awe ‘ea ke hele lākou i ke kū‘ai hele ma kahi o ke ‘eke pepa a ‘ea paha e kiloi ai. Ma ka ho‘ohana ‘ana i nā ‘eke ho‘ohana hou ‘ia, mana‘olana ke Kalana e ho‘ēmi ‘ia ka nui o ka ‘ōpala i kekahī wā aku paha ho‘opau ‘ia paha nā ‘eke kiloi ‘ia ma muli o ka pilikia ma ka ‘āina no ia ‘ano mea. Na ke Kalana e māhelehele aku i nā ‘eke huluhulu i nā kānaka noho o Kaua‘i e pūlima ana i kekahī ‘ōlelo ‘aelike e ho‘ēmi, ho‘ohana hou, a ho‘opō‘aiāpili a ho‘opiha ho‘i i kekahī hō‘ike ‘āina e pili ana i ka hō‘alo ‘ana i ka ‘ōpala. I mea e ho‘onui ai i ka polokalamu e kuapo ai i nā ‘eke kū‘ai kiloi ‘ia no ke ‘eke huluhulu i loko o nā makahiki e hiki mai ana, ke ho‘olālā aku nei ke Kalana e ho‘onui i ka nui o nā ‘eke e māhelehele ai a me ka nui pū o nā hui e komo ai i kēia papa hana ma ka mālama ‘ana i nā papa hana e pōmaika‘i ai a me nā papa hana a‘oa‘o.

Ma ‘Okakopa o ka 2009, ua ‘ae ke Komikina Kalana o Kaua‘i i kekahī kānāwai e koi ana i nā hui kū‘ai e hā‘awi i ke ‘eke pepa wale nō a i ‘ole ke ‘eke ho‘ohana hou ‘ia i ka po‘e kū‘ai. Ua mana kēia kānāwai i Ianuali 11, 2011 a ua pili i kekahī hui hana e kū‘ai ana i nā mea kū‘ai i ka po‘e kū‘ai, me nā hale kū‘ai pū kekahī, nā hale kū‘ai lā‘au, nā hale kū‘ai lama, nā hale kū‘ai li‘ili‘i, a me nā hale kū‘ai a me nā hui kū‘ai lole, mea‘ai a me nā mea kū‘ai pilikino. Ua pili nō ho‘i kēia kānāwai i nā hale ‘aina kekahī. Ma ke kānāwai, ‘ōlelo ‘ia ‘a‘ole e kau mai kēia kānāwai no nā hanana ho‘oulu kālā na nā hui waiwai ho‘opukupuka ‘ole a i ‘ōle nā hui kōkua kaiāulu i ho‘okumu ‘ole ‘ia na ke aupuni. ‘O ke kumu o kēia kānāwai, ‘o ia ka ho‘ēmi ‘ana i ka hopena pilikia nui o nā ‘eke ‘ea ma ka ‘āina ma ke ‘ano lū ‘ōpala, ho‘opiha i ka pu‘u ‘ōpala, a ho‘opilikia i nā i‘a. Hiki ke ho‘ouku ‘ia nā hui e ‘a‘e ana i nā koi o ke kānāwai.

1.5.2 Ka Ho‘opulupulu Hale

Na ke Kalana e hā‘awi i nā kini ho‘opulupulu i nā kānaka noho i mea e hō‘alo ai i ka ‘ōpala mea‘ai a me ka ‘ōpala pā hale mai ka pu‘u ‘ōpala aku. No ka loa‘a ai ke kini, pono e ‘aelike nā kānaka noho e komo i kekahī papa hana helu ho‘opulupulu, a pono e nānā i kekahī video he 20 minuke ka lō‘ihī no ka ho‘opulupulu ‘ana. No ka makahiki waihona kālā 2013, kuhi ke Kalana ua ho‘opō‘aiāpuni ‘ia ma kahi o 2,480 kana mea‘ai a me ka ‘ōpala pā hale ma ka ho‘opulupulu ‘ana.

1.5.3 Ka Loiloī ‘Ōpala

Na ka Luna Ho‘omalu Ho‘opō‘aiāpuni o ke Kalana e kōkua i nā hui ma ka ho‘opō‘aiāpuni ‘ana, ka ho‘ēmi ‘ana i ka ‘ōpala, a me ka hō‘alo ‘ana ho‘i i ka ‘ōpala, a nāna e mālama i nā loiloī ‘ōpala ke noi ‘ia. ‘O ka loiloī ‘ōpala, ‘o ia ke kipa ‘ana o ka Luna Ho‘omalu Ho‘opō‘aiāpuni o ke Kalana i kēlā me kēia kahua e ho‘omaopopo ai i ka hana ho‘omalu a me ka ho‘opō‘aiāpuni. Ma ia hana ‘ana, na ka Luna Ho‘omalu Ho‘opō‘aiāpuni e hō‘ike i kona mau mana‘o paipai e hō‘oi a‘e ai i ka hana ho‘opō‘aiāpuni a ho‘ēmi ‘ōpala.

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1.6 Ka Ho‘opō‘aiāpuni me ka Ho‘ololi Mea ola

1.6.1 Ka Ho‘opō‘aiāpuni

Nā Mea Ho‘opō‘aiāpuni Hale Like ‘Ole

‘O nā mea ho‘opō‘aiāpuni hale like ‘ole (e like me ka pepa pahu, ka nūpepa, ka pepa ‘ō‘ā ‘ia, ke aniani, ke kini ‘aluminuma, a me ke kini hao kila [i kēia wā hope nei]), he ‘ae ‘ia no ka ho‘opō‘aiāpuni ‘ana ma ke Kikowaena Kumu Waiwai o Kaua‘i a ma o ka polokalamu pahu waihona mea ho‘opō‘aiāpuni ma ‘ewalu mau kahua waihona (Hanalei, Kapa‘a, Līhu‘e, Po‘ipū, Lāwa‘i, ‘Ele‘ele, Waimea, a me Kekaha) ā puni ka mokupuni. ‘O nā ‘ano ‘ea i ‘ae ‘ia ai, ‘o ia ka polyethylene terephthalate (PET) #1 a me ka high-density polyethylene (HDPE) #2. ‘O nā ‘ano ‘ea ‘ē a‘e, e like me ka #3–#7, ‘a‘ole i ‘ae ‘ia ma muli o ka emi o kona waiwai ma ka mākeke ma mua o ka halihali ‘ana. ‘O ka pepa, ke aniani, nā kini ‘aluminuma, a me ka ‘ea ho‘opō‘aiāpuni ‘ia, hana ‘ia e ho‘okahi wale nō hui ukupau i hai ‘ia ai ma ka palapala ‘aelike ma Kaua‘i. Hai ‘ia ka Garden Isle Disposal (GID), ‘o ia ka hui halihali ‘ōpala nui ma ka mokupuni, ‘o ia ho‘i ka hui ho‘okahi wale nō i ‘ona ‘ia no ka ho‘oponopono ‘ana i ka ‘ōpala ma Kaua‘i, a ua hai ‘ia ma ka palapala ‘aelike e ke Kalana a me nā hui like ‘ole i ‘ona ‘ia nāna e ‘ohi‘ohi a halihali i ka ‘ōpala pepa mai nā hale noho a me nā hui hana mai, me ke aniani, ka ‘aluminuma, a me nā ‘ōpala ‘ea kekahi no ka ho‘opō‘aiāpuni ‘ana. Ma waho a‘e o nā manawa he kaka‘ikahi e ‘ike ‘ia ai ka ho‘ohuihui a me ka ho‘ohaumia ‘ana, na ka GID e ‘ohi i nā mea e ho‘opō‘aiāpuni ai i waewae mua ‘ia ai ma kahi o kumu i loa‘a ai ka ‘ōpala, a no laila, ‘a‘ole nō pono nā mīkini nāna e waewae i ka ‘ōpala.

Ma kahi o 1,691 kana ka nui o ka ‘ōpala i ‘ohi ‘ia ai i ka makahiki waihona kālā 2013 ma o ka polokalamu pahu waihona ho‘opō‘aiāpuni. He 242 kana mea ho‘opō‘aiāpuni (ma waho a‘e o ka HI-5) hou a‘e ka nui i ‘ohi ‘ia ai ma ke Kikowaena Kumu Waiwai o Kaua‘i i ka makahiki waihona kālā 2013. Ua ‘ike ‘ia aia ma ke kikowaena ‘ohi o ke Kikowaena Kumu Waiwai o Kaua‘i kekahi kikowaena ‘ohi HI-5, a pēlā e pi‘i ai ka nui o nā mea i ‘ohi ‘ia ai ma kēia wahi ma muli o kekahi pōmaika‘i kālā.

Ma waho a‘e o nā ‘ōpala o nā hale noho, ‘ohi ka GID i nā mea ho‘opō‘aiāpuni mai nā hui hana mai kekahi. Mālama kekahi o nā hale kū‘ai nui no ‘Amelika mai i kā lākou mau mea ho‘opō‘aiāpuni, e like me ke Kmart; akā, mālama ‘ia ka hapa nui o nā mea ho‘opō‘aiāpuni ma Kaua‘i nei e ka GID.

Ka Polokalamu Ho‘ā‘o ‘Ohi Mea Ho‘opō‘aiāpuni Hale o Ka‘e Alanui

Ma waena o Kepakemapa 2011 a me ‘Aukake 2011, ua mālama ke Kalana i kekahi polokalamu ho‘ā‘o ‘ohi mea ho‘opō‘aiāpuni o ka‘e alanui ma kahi o Līhu‘e-Puhi. I ka wā nō o ka polokalamu ho‘ā‘o, ua hā‘awi ‘ia nā pahu ho‘opō‘aiāpuni i 1,300 po‘e kānaka (670 ma Puhi a 630 ma ke kikowaena o Līhu‘e), a ua ‘ohi ‘ia nā mea ho‘opō‘aiāpuni i waewae ‘ole ‘ia (“single-stream”) i kēia ‘elua pule.

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Ua hō‘ike ‘ia i loko o kekahi hō‘ike nāna i loiloi i ka polokalamu ho‘ā‘o (SAIC 2011) kēia mau ‘ike a me nā mana‘o paipai:

- ‘Ohi ‘ia 28.5 paona mea ho‘opō‘aiāpuni o ka mahina mai kēlā me kēia hale noho ka ‘awelika.
- Ua kū nō ka huina o nā mea i ‘ohi ‘ia i nā mea i ‘ohi ‘ia e nā polokalamu ho‘opō‘aiāpuni waewae kahi (“single stream”) o ka‘e alanui ma nā wahi like ‘ole o ‘Amelika a nānā ‘ia e ka SAIC.
- Ua emi ka pakeneka o nā mea i ‘ohi ‘ia ma o ka polokalamu ‘ohi kini mea inu o ka Moku‘āina (hō‘ike ‘ia ma lalo nei).
- He 70 pakeneka a ‘oi ka nui o nā mea pepa i ‘ohi ‘ia.
- He pono kekahi kahua ‘ohi ukana (materials recovery facility: MRF) ma kekahi polokalamu ‘ohi mea ho‘opō‘aiāpuni piha pono no ka‘e alanui i hiki ke ho‘oponopono i nā mea ho‘opō‘aiāpuni waewae kahi.
- I kinohi, he ‘ohi kekahi polokalamu ho‘opō‘aiāpuni no ka‘e alanui ā puni ka mokupuni 3,100 kana mea ho‘opō‘aiāpuni o ka makahiki i wānana ‘ia.

Ua kuhi ka hō‘ike ma kahi o 3,700-4,800 kana o ka makahiki ka nui o nā mea i hiki ke ‘ohi ‘ia ma o kekahi polokalamu ka‘e alanui, a ho‘ohālike ‘ia kēia me 1,600 kana o ka makahiki e ‘ohi ‘ia nei i kēia manawa ma o ka ‘ohi mea ho‘opō‘aiāpuni ‘ana ma ke Kikowaena Kumu Waiwai o Kaua‘i a me nā pahu waihona. I ka wā o ka polokalamu ho‘ā‘o, ua ‘ike ‘ia ka emi he 20 pakeneka a he 6 pakeneka ma ke Kikowaena Kumu Waiwai o Kaua‘i a me nā pahu waihona mea ho‘opō‘aiāpuni o Kaua‘i ma ka halihali ‘ana ke ho‘ohālike ‘ia me ka makahiki ma mua iho. He makemake ke Kalana e kūkulu i kekahi polokalamu ‘ohi mea ho‘opō‘aiāpuni waewae kahi ā puni ka mokupuni aia ā loa‘a kekahi MRF kūpono. No kekahi ‘ike hou aku no ka papa hana ho‘okō o ke Kalana no ka ‘ohi ‘ia ‘ana o nā mea ho‘opō‘aiāpuni hale ma ka‘e alanui ā puni ka mokupuni, e nānā i ka Māhele 3.3.1. Ka Ho‘opō‘aiāpuni ‘ana.

Ka Polokalamu Waihona Kini Mea Inu o ka Moku‘āina

‘A‘ole nō ia he polokalamu o ke Kalana, akā, he kāko‘o ka polokalamu waihona kini mea inu o ka Moku‘āina, i kama‘āina ma ka inoa ‘o “HI-5”, i ka ho‘opō‘aiāpuni a me ka hō‘alo pu‘u ‘ōpala ‘ana ma ka mokupuni ‘o Kaua‘i. Paipai kēia polokalamu, i ho‘okumu ‘ia ma Ianuali 2005, i ka ho‘opō‘aiāpuni a me ka ho‘ēmi ‘ōpala, a paipai ‘ia ho‘i ka hō‘alo ‘ia ‘ana o nā mea ho‘opō‘aiāpuni mai ka pu‘u ‘ōpala aku. Ma lalo o ke kānāawai (Hawai‘i Administrative Rules [HAR] Title 11, Chapter 282 Deposit Beverage Container Recycling), a ma lalo o ka ho‘omalu ‘ana o ka Papa Ola o ka Moku‘āina ‘o Hawai‘i, Māhele ‘Ōpala Pa‘a a Haumia, kau ‘ia he kāki he waihona he \$0.05 a me kekahi kāki kini he \$0.01 ma luna o kēlā me kēia kini mea inu aniani,

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polyethylene, terephthalate, high-density polyethylene, a me ka hao i emi kona nui i ke 68 ‘auneki wai a ho‘ohana ‘ia no ka inu ‘ana ma Hawai‘i nei. Na nā kikowaena ‘ohi i pa‘a ka palapala ‘ae e ‘ohi i nā kini he \$0.05 o kēlā me kēia kini. Ma ia hope mai, na ka Moku‘āina e uku hou i nā kikowaena i ke kāki he \$0.03 o ke kini no ka ‘aluminuma, ka hao i ‘ō‘ā ‘ia, a me ka ‘ea, a \$0.04 o ka ‘ōmole aniani. No nā kini i pono e halihali ‘ia i waho o ka moku‘āina, ‘ohi nā kikowaena i kekahi kāki he \$0.02-\$0.04 no ka hana e pono ai ke kini na ka Moku‘āina mai no nā lilo ho‘oholo a halihali. Hele nā kāki kini i ‘ohi ‘ole ‘ia no nā lilo ‘ē a‘e e kāko‘o ai i ka polokalamu waihona kini mea inu i ho‘omalu ‘ia e ka Moku‘āina (Papa Ola 2007).

Na ka Māhele ‘Ōpala Pa‘a o ka Papa Ola o ka Moku‘āina ‘o Hawai‘i e ho‘omalu i nā kikowaena ‘ohi a me nā hui nāna e kū‘ai lilo i nā mea HI-5. He ‘ewalu nō kikowaena i ho‘oholo ‘ia e nā hui i ‘ona ‘ia:

- Na ke Kaua‘i Community Recycling Services e ho‘oholo ‘ehā mau kahua ma Kekaha, a me Kīlauea, Kapa‘a, a me Kōloa. Na ke Kalana e hai i nā kahua o Kekaha a me Kōloa ma ka palapala ‘aelike me ke kālā i ho‘olako ‘ia e ka polokalamu waihona kini mea inu o ka Moku‘āina. Ua hemo nā kahua ‘elua no ka lehulehu ‘elua lā o ka pule.
- Na ka Reynolds Recycling e ho‘oholo ‘ekolu mau kahua ma ke Awa o Nāwiliwili, Kapahi, a me Lāwa‘i.
- Na ka GID e ho‘oholo ho‘okahi kahua (ke Kikowaena Kumu Waiwai o Kaua‘i) ma Līhu‘e.

I kēia manawa, ‘o ka GID ka hui ho‘okahi wale nō ma Kaua‘i i hiki ke ho‘oponopono, kaupaona, a halihali i nā kini mea inu i pau ka ho‘ohana ‘ia i ka mākeke, a no laila, ma ka hopena, hele aku nō nā mea a pau ma o ka GID ma mua o ke kū‘ai lilo ‘ia ‘ana aku ma nā mākeke ma waho o ka moku‘āina. I kēia manawa, ‘ae ka GID i ka ‘aluminuma a me ka ‘ea mai nā kikowaena ‘ohi a he kāki ‘ole, a kāki ‘ia he ‘elima keneka o ka paona ma ka ‘ae ‘ana a me ka ho‘oponopono ‘ana i ke aniani. Mālama nā kikowaena ‘ohi i nā kāki e pono ai ka hana ‘ana no ke kini, a na ka GID e mālama i ka waiwai puka i hana ‘ia ai ma ke kū‘ai lilo ‘ana i nā mea HI-5. Maka makahiki waihona kālā 2013, ua ‘ohi ‘ia 2,735 kana mea ho‘opō‘aiāpuni ‘ia ma ka polokalamu waihona kini mea inu HI-5.

Ke Kikowaena Ho‘opō‘aiāpuni Mea Hao o Puhi

I ka wā ma mua, ua ‘ona ke Kalana i ke Kikowaena Ho‘opō‘aiāpuni Mea Hao o Puhi (Puhi Metals Recycling Center: PMRC), ‘o ia ke kahua ho‘opō‘aiāpuni mea hao nui loa o ka mokupuni nei. I kēia manawa, ‘ona a ho‘oholo ‘ia ka PMRC e ka Grove Farms Inc. a me ka Resource Recovery Solutions LLC. ‘Ae ka PMRC i nā mea hao ho‘opō‘aiāpuni mai nā kumu hale noho a me ka hui hana.

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1.6.2 Ka Ho‘ololi Mea ola ‘ana

Ka ‘Ōpala Mea Kanu

‘Ae nā kahua kiloi ‘ōpala ‘ehā o ke Kalana, a me ka pu‘u ‘ōpala nui pū o Kekaha, i ka ‘ōpala mea kanu i mana‘o ‘ia ai ka ho‘opō‘aiāpuni ‘ana, penei:

- Ka ‘ōpala mahiki ‘oki ‘ia;
- Ka ‘ōpala pā hale;
- Ka ‘ōpala kumu lā‘au ‘oki ‘ia (paukū, lālā, lau);
- Ka la‘alā‘au; a me
- Ka lā‘au Kalikimaka

Na ke Kalana e hai ‘ekolu mau hui i ‘ona ‘ia ma ka palapala ‘aelike no ka ho‘omalu ‘ana i ka ‘ōpala mea kanu i ‘ohi ‘ia e ke Kalana:

- Heart and Soul Organics LLC, ma Kīlauea
- Kaua‘i Nursery and Landscaping, ma Līhu‘e
- Shredco LLC, hana ma ke kahua kiloi ‘ōpala o Hanapēpē a me ka pu‘u ‘ōpala nui o Kekaha

I ka makahiki waihona kālā 2013, ua ‘ohi ke Kalana 18,751 kana ‘ōpala mea kanu.

1.7 Ka ‘Ōpala Kūikawā

Ma loko o ka Mokuna 21 o ke Kānāwai Kalana o Kaua‘i, ‘o ka ‘ōpala kūikawā, he taea, nā mea i loa‘a ka asbestos, ka ‘ōpala ke‘oke‘o, a me nā holoholona make (koe nā mea i kiloi ‘ia e ke Kaua‘i Humane Society), a me nā ‘ano ‘ōpala i huihui ‘ia ai ka taea i pau ka ho‘ohana ‘ia, nā mea i loa‘a ka asbestos, ka ‘ōpala ke‘oke‘o, a i ‘ole nā holoholona make. Na ke Kalana e ho‘oholo i nā polokalamu no ka ho‘omalu ‘ana i nā mea e pono ai ka ho‘opā ‘ana ma kekahi ‘ano kūikawā a i ‘ole nā mea i kaupalena ‘ia ai kona ‘ano o ke kiloi ‘ana.

‘O ka ‘ōpala kūikawā, ‘o ia nā ‘ano ‘ōpala e pono ana kekahi hana kūikawā ma muli o ka nui a i ‘ole kekahi mea, kekahi ‘ano lā‘au make paha, a i ‘ole kekahi ‘ano mea kino holoholona a kanaka paha e pono ai kekahi ‘ano hana kūikawā no ka ho‘oponopono ‘ana. ‘O ka hana ma‘amau, ‘ohi ‘ia ka ‘ōpala kūikawā me ia nō a ‘a‘ole ho‘ohuihui ‘ia me nā ‘ōpala ‘ē a‘e. ‘O nā ‘ano ‘ōpala kūikawā i hō‘ike ‘ia ma loko o ka H.B. 324, ‘o ia ho‘i ka/ke:

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- Asbestos;
- ‘Ōpala mahi ‘ai;
- ‘Ōpala haukapila;
- Ka‘a i ha‘alele ‘ia;
- Pelapela luawai pelapela;
- Lehu mea i puhi ‘ia i ke ahi;
- ‘Ōpala ke‘oke‘o;
- Taea;
- ‘Aila uliuli i pau ka ho‘ohana ‘ia; a me ka
- Iho ‘akika kēpau

‘O kekahi mea i mana‘o ‘ia ai he ‘ōpala kūikawā, me kona hō‘ike ‘ole ‘ia nō na‘e i loko o ka H.B. 324, ‘o ia ho‘i ka/ke:

- Iho no ka hale;
- Kini Propane;
- ‘Aila kuke i pau ka ho‘ohana ‘ia; a me ka
- Mea kūkulu hale a me ka wāwahi hale.

Na ke Kalana e ho‘omalu i ka ‘ōpala kūikawā penei:

- **Ka ‘Ōpala Taea.** ‘Ae nā kahua kiloi ‘ōpala ‘ehā a me ka pu‘u ‘ōpala nui i ka ‘ōpala taea o ka hale, a ‘a‘ohe kāki ‘ana. ‘A‘ole ‘ae nā kahua kiloi ‘ōpala ‘ehā a me ka pu‘u ‘ōpala nui i nā taea mai nā hui hana mai. ‘Ae ka PS&D Tires i nā taea mai nā hui hana mai a he kāki nō. I ka makahiki waihona kālā 2013, ua ‘ohi ke Kalana ma kahi o 125 kana taea. Ua ‘ohi ‘ia ma kahi 271 kana taea o nā hui hana i ka makahiki waihona kālā 2013. Ma loko o ka HRS 3421-23, pono nā hui kū‘ai taea e ‘ae i ka nui like o nā taea i pau ka ho‘ohana ‘ia me ke kāki ‘ole ke kū‘ai ka po‘e kū‘ai i nā taea hou.

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- **Ka ‘Ōpala Ke‘oke‘o.** ‘Ae nā kahua kiloi ‘ōpala ‘ehā a me ka pu‘u ‘ōpala nui o Kekaha i ka ‘ōpala ke‘oke‘o mai nā hale noho mai i nā wā a pau o ka makahiki a ‘a‘ohe kāki ‘ana. E like nō me ka ‘ōlelo o ka HAR Title 11 Chapter 58.1, ‘a‘ole hiki ke ‘ae ‘ia ka ‘ōpala ke‘oke‘o ma kekahi pu‘u ‘ōpala Subtitle D ma Hawai‘i nei. Na ke Kalana e hai i ka Resource Recovery Solutions LLC ma ka palapala ‘aelike no ka ‘ohi a me ka ho‘oponopono ‘ana i ka ‘ōpala ke‘oke‘o ma ka PMRC. Na ka PMRC e ‘ae i ka ‘ōpala ke‘oke‘o mai nā kānaka noho a ‘a‘ohe kāki ‘ana. Ma mua o ka ho‘oponopono ‘ia ‘ana o nā pahu hau o nā hui hana a me nā mīkini hō‘olu‘olu ea, he pono e ho‘okahe pau loa a ‘ohi ‘ia ka freon (‘o ia ho‘i, ke chlorofluorocarbon) a me ka ‘aila halogen. Kāki ke kahua he \$20 o kēlā me kēia mea o nā hui hana.
- **Nā Mea i Loa‘a ka Asbestos.** ‘Ae ka pu‘u ‘ōpala i ka ‘ōpala nonfriable o ke ‘ano Category I me ke Category II i loa‘a ka asbestos, e like me ia i ho‘ākāka ‘ia ma loko o ka CFR 40, Māhele 61 o ka U.S. Environmental Protection Agency’s (EPA), Code of Federal Regulations.
- **Hō‘alo ‘Aila Uliuli i Pau ka Ho‘ohana ‘ia.** ‘Ae nā kahua kiloi ‘ōpala a me ka pu‘u ‘ōpala i ka ‘aila uliuli i pau ka ho‘ohana ‘ia no ka ho‘opō‘aiāpuni ‘ana ma o ka polokalamu Do-it Yourselfer (DIY). I mea e paipai ai i ka ho‘opō‘aiāpuni ‘ia ‘ana o ka ‘aila uliuli, ua kūkulu ke Kalana i nā kahua ho‘okahe ‘aila uliuli no ka po‘e noho me ke kāki ‘ole. No ka makahiki waihona kālā 2013, ua wānana ke Kalana he mo‘ohelu he \$55,000 ka nui no ka ho‘opō‘aiāpuni ‘ana i ka ‘aila uliuli. Ua ‘ae nā kahua kiloi ‘ōpala ‘ehā i nā kālana ‘aila uliuli.
- **Hō‘alo ‘Aila Kuke i Pau ka Ho‘ohana ‘ia.** Ua hana ke Kalana i kekahī polokalamu ‘aila kuke i pau ka ho‘ohana ‘ia. ‘Ae ‘ia ka ‘aila kuke o nā hale noho ma nā kahua kiloi ‘ōpala o Līhu‘e a me Hanapēpē. Halihali ‘ia ka ‘aila kuke i ke Kaua‘i Grease Trap ma ke Kaua‘i Farm Fuels ma Hanapēpē, kahi e ho‘oponopono ‘ia ai a ho‘ololi ‘ia he biodiesel.
- **Ho‘opō‘aiāpuni Kini Propane.** Ua hai ke Kalana i ka Resource Recovery Solutions LLC ma ka palapala ‘aelike e ‘ohi‘ohi ai i nā kini propane ma ka PMRC. He mea ‘ano weliweli iki nō ke kini propane ma ke ‘ano he ‘ōpala e ho‘omalu ‘ia ai e ke Kalana. ‘Ae ka PMRC i nā kini propane mai nā mea halihali o nā hale noho a me nā hui hana me ke kāki ‘ole. I ka makahiki waihona kālā 2013, ua ho‘opō‘aiāpuni ke Kalana 5 kana kini propane.
- **Ho‘opō‘aiāpuni Iho.** Na ke Kalana e ho‘oholo i kekahī polokalamu ho‘opō‘aiāpuni iho ma ke Kikowaena Kumu Waiwai o Kaua‘i. ‘Ae ke kikowaena i ka iho alkine (dry cell), ka iho nickel-cadmium (NiCad), a me ka iho lithium. ‘A‘ole ‘ae ka polokalamu i ka iho ka‘a a me ka iho i oia mau ka uila (uninterrupted power supply: UPS); akā na‘e, ‘ae nā

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hui hana like ‘ole i kēia ‘ano iho i nā lā a pau o ka makahiki. Ma ke kānāwai o ka Moku‘āina, pono e ‘ae nā hui hana i nā iho ka‘a kahiko ke kū‘ai ka po‘e kū‘ai i ka mea hou. ‘Ae ka Napa Auto Parts ma Līhu‘e i nā iho ka‘a a me ka UPS mai ka po‘e noho mai me ke kāki ‘ole.

- **Ho‘opō‘aiāpuni ‘Ōpala Hao a me nā Ka‘a.** Hai ke Kalana i ka Resource Recovery Solution LLC ma ka palapala ‘aelike e ‘ohi‘ohi a ho‘oponopono ai i ka ‘ōpala hao ame nā kaa ma ka PMRC. ‘Ae ka PMRC i nā ‘ōpala mai nā hale noho a me nā hui halihali mai me ke kāki ‘ole. I ka makahiki 2013, ua ho‘opō‘aiāpuni ke Kalana 2,447 kana ‘ōpala hao.
- **‘Ōpala Kūkulu a Wāwahi Hale.** ‘Ae ka pu‘u ‘ōpala o Kekaha i ka ‘ōpala kūkulu a wāwahi hale (construction and demolition: C&D) ma ke kāki ‘ana he \$90 o ke kana no nā hui halihali a ‘a‘ohe kāki no ka po‘e noho. ‘A‘ole helu ke Kalana i ka nui o ka ‘ōpala C&D i kiloi ‘ia ma ka pu‘u ‘ōpala o Kekaha. ‘O ka Pacific Concrete Cutting and Coring ma Līhu‘e ka hui ho‘okahi wale nō ma ka mokupuni e ho‘opō‘aiāpuni ana i ka ‘ōpala C&D.

1.8 Ka ‘Ōpala Ho‘opilikia ma ka Hale a me ka ‘Ōpala Mīkini Uila

1.8.1 Ka ‘Ōpala Ho‘opilikia ma ka Hale

Ho‘omalu ‘ia ka ‘ōpala ho‘opilikia ma lalo o ke kānāwai pekelala, ‘o ka Resource Conservation and Recovery Act (RCRA), Subtitle C. Ma loko o kēia kānāwai pekelala, ‘ike ‘ia ho‘okahi o ‘ehā mau ‘ano – he ‘ā i ke ahi, he popopo, he pahū, he haumia.

Ho‘ākāka ‘ia ke ‘ano o ka ‘ōpala ho‘opilikia ma loko o ka Hawai‘i Administrative Rules (HAR), Title 11, DOH Mokuna 261-3 a i loko o ka HRS, Mokuna 342J-2 (Hazardous Waste) ma ke ‘ano he ‘ōpala pa‘a a i ‘ole mau ‘ano ‘ōpala pa‘a i ho‘ohuihui ‘ia, a ma muli o ka nui, ka pa‘apū, a i ‘ole ke ‘ano pa‘a, lā‘au a i ‘ole ka ma‘i, he hiki ke (1) pi‘i ke kūlana weliweli e make ai ke kanaka a i ‘ole pi‘i ke kūlana weliweli e ma‘i loa ai ke kanaka e hiki ‘ole ai ke ola hou; a i ‘ole (2) pilikia ke ola o ke kanaka ai ‘ole pilikia ka ‘āina inā ‘a‘ole maika‘i ka hana ‘ana, ka waiho ‘ana, ka halihali ‘ana, ke kiloi ‘ia ‘ana, a i ‘ole ka ho‘opā ‘ana.

I loko o ka HRS Mokuna 342G-1, ho‘ākāka ‘ia ke ‘ano o ka ‘ōpala ho‘opilikia (“household hazardous waste”) ma ke ‘ano he ‘ōpala mai nā mea i kū‘ai ‘ia mai e ka lehulehu no ka ho‘ohana ma ka hale, a ma muli o ka nui, ka pa‘apū, ke ‘ano pa‘a, ka lā‘au, a i ‘ole ke kūlana ma‘i, hiki ke pilikia loa ke ola o ke kanaka a i ‘ole pilikia ka ‘āina inā ‘a‘ole maika‘i ka hana ‘ana, ke kiloi ‘ia ‘ana, a i ‘ole ka ho‘opā ‘ana.

Ho‘okoe ‘ia ka ‘ōpala ho‘opilikia mai ka hale mai (e like me nā ‘āpana ka‘a, ka lā‘au ho‘oma‘ema‘e, ka lā‘au make mū, lā‘au make mea kanu, ka pena a me ka lā‘au wāwahi) ma lalo o ka Resource Conservation and Recovery Act (RCRA), nā lula o ke Code of Federal

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Regulations (40 CFR Māhele 261.4), a me ka HAR, Title 11, DOH, Mokuna 2614. HAR 11-261-4(b)(1), ‘ōlelo ‘ia ‘a‘ole kēia mau ‘ōpala pa‘a he ‘ōpala pa‘a ho‘opilikia a ho‘okoe ‘ia mai ke kānāwai aku: ‘o ka ‘ōpala pa‘a i loa‘a mai nā hale mai (nā hale noho ‘ohana pākahi a mau ‘ohana paha, nā hōkele like ‘ole, ka hale ho‘omaha malihini, ka hale noho manakia, ka hale noho limahana, ka pā ho‘omoana, ka pā pā‘ina, a me kā pāka ho‘ohana lā). ‘O kekahī mea hou i ho‘okoe ‘ia ma lalo o nā lula pekelala me ka Moku‘āina (HAR 11-261-5), ‘o ia ka mīkini hana uila li‘ili‘i (CESQG). He hui li‘ili‘i ka CESQG e hana ana 100 kilogram a emi paha ‘ōpala ho‘opilikia (ma kahi o 220 paona a i ‘ole 25 kālani) o ka mahina.

He ‘ohi ke Kalana i ka ‘Ōpala Ho‘opilikia o ka Hale (Household Hazardous Waste: HHW) o nā ‘ano like ‘ole he nui ‘a‘ohe ona kau ma lalo o nā lula no ka HHW i hana ‘ia ma ka hale, e like me ka pena i hana ‘ia i ka ‘aila a me ka lā‘au wāwahi, ka ‘ōpala wai ‘a‘ohe kau ma lalo o nā lula, ka iho mai ka hale mai, ka iho ‘akika-kēpau, ka mercury, a me ka ‘ōpu‘u kukui fluorescent. He pono ka ho‘omalu ‘ia ‘ana o ka ‘ōpala o nā hui hana a me nā hale kikowaena na kekahī hui ho‘oponopono ‘ōpala ho‘opilikia i ‘ona ‘ia. I ka 2012, ua hai ke Kalana i ka Enviroservices & Training Center LLC ma lalo o ka palapala ‘aelike nāna e ‘ohi‘ohi i ka HHW me ke kāki ‘ole i ka po‘e noho. Na ka Enviroservices e ‘ohi‘ohi i ka HHW ma ka mokupuni ‘o Hawai‘i ame O‘ahu. Ma hope o ka ‘ohi‘ohi ‘ia ‘ana o ka HHW, halihali ‘ia ka iho i ka Napa Auto Parts ma Kaua‘i nei no ka ho‘opō‘aiāpuni ‘ana; wehe ‘ia ka mercury mai nā ipukukui mai no ke kiloi ‘ana ma ka pu‘u ‘ōpala o Kekaha; halihali ‘ia ka ‘ōpala i ho‘ohuihui ‘ia (e like me ka mercury, ka mea ‘ā ‘ia i ke ahi, a me nā mea wai ho‘opilikia like ‘ole) i O‘ahu, ho‘ohuihui ‘ia ma kekahī pu‘u, a laila, halihali ‘ia i ka ‘āina nui o ‘Amelika no ke kiloi hope ‘ana ma kekahī pu‘u ‘ōpala ho‘opilikia. I ka makahiki waihona 2013, ua ‘ohi ke Kalana 11 kana HHW.

1.8.2 Ka ‘Ōpala Mea Uila

Ma loko o ke kānāwai, ‘o ka Hawai‘i Electronic Waste and Television Recycling and Recovery Law (HAR Title 19, Mokuna 339D), he pono nā hui hana pahu ho‘olele ki‘i, mīkini lolouila, mīkini pa‘i, a me ka mīkini ho‘olele lolouila e mālama i nā polokalamu ho‘opō‘aiāpuni no nā mea a lākou e hana ai. I kēia manawa, ‘a‘ole mālama nā hui hana mea kū‘ai i ka papa hana ho‘opō‘aiāpuni kūpono no nā mea uila ma Kaua‘i. Mālama nō ka hapa nui o nā hui hana mea kū‘ai i ka polokalamu “ho‘ouna ma ka leka” e pono ai ka po‘e ho‘ohana e ho‘okomo i ka mea uila i loko o kekahī pū‘olo a ho‘ouna ma ka leka no ka ho‘opō‘aiāpuni ‘ana, a emi mai ka hoihoi o ka po‘e noho e hana pēlā. Mai ka wā mai i mana ai kēia kānāwai, ua pono ke Kalana e ho‘ohui aku i ke kālā e kōkua ai i nā polokalamu ho‘opō‘aiāpuni e ho‘onui ai i ka ho‘opō‘aiāpuni ‘ia ‘ana o nā mea uila. I kēia manawa, ‘a‘ole hiki i ke Kalana ke ho‘ohui aku i ke kālā i ka polokalamu ho‘opō‘aiāpuni mea uila ma muli o ka pipi‘i loa.

‘Ae ke Kalana i ka ‘ōpala o ka hale a me ka ‘ōpala mea uila me ke kāki ‘ole ma ka Pō‘alima/Pō‘aono ‘elua o kēlā me kēia mahina. I ka makahiki waihona kālā 2013, ua ‘ohi ke Kalana 55 kana ‘ōpala mea uila. ‘A‘ohe hui e ‘ae ana i ka mea uila no ka ho‘opō‘aiāpuni ‘ana. Akā na‘e, ‘ae nā ‘oihana waiwai puka ‘ole i nā mea uila e hana pono nei no ka ho‘ohana hou ‘ana. He ho‘opō‘aiāpuni nō kekahī mau hui hana mea kū‘ai me ke kāki pū nō.

Papa Hana Laulā i Hō‘ano Hou ‘ia
Wehewehe ‘Ano no nā Pono Kūlanakauhale o Kaua‘i
Nā Hana ‘Ōpala Pa‘a

Ua komo nō ke Kalana i ka ‘ahahui ‘o ka Hawai‘i Electric Device Recycling Task Force a ke hana nei e ho‘ololi i ke kānāwai e hō‘oi ai i nā polokalamu ma Kaua‘i a koi ‘ia nā hui hana mea kū‘ai e mālama i nā hanana ho‘opō‘aiāpuni i ‘oi aku ka ma‘alahi no nā kānaka noho ma ka mokupuni i kekahi manawa pa‘a mau.

1.9 Ka Māhele Ho‘ona‘auao o ka Lehulehu a me ka Ho‘olaha ‘Ike

Ma loko o ka Mokuna 342G-26(g) o ka Hawai‘i Revised Statutes, he ho‘ākāka ka māhele ho‘ona‘auao o ka lehulehu a me ka ho‘olaha ‘ike o ka Papa Hana i nā polokalamu a ke Kalana e ho‘ohana ai, me ka hana pū me ka Papa Ola no kēia mau kumu:

- Ho‘olaha mau i mua o ka lehulehu me ka moākāka i nā koho i loa‘a no ka ho‘ēmi ‘ana i ka ‘ōpala, ka ho‘opō‘aiāpuni ‘ana, a me ka ho‘ololi ‘ana i ka mea ola, a no ka hana pono ‘ana i nā ‘ano ‘ōpala ho‘opilikia a kūikawā like ‘ole o ka hale; a
- Ho‘olaha aku i ka ‘ike a me nā mea e pono ai e ho‘ona‘auao ai e pili ana i nā pilikia no ka ‘ōpala pa‘a ma ke ‘ano laulā ma o nā ‘ao‘ao ho‘olaha like ‘ole (ka nūpepa, ka lekio, ke kīwī paha), nā kula, a me nā ‘ahahui o nā kaiāulu.
- Hai ke Kalana ho‘okahi luna ho‘omalu ho‘opō‘aiāpuni nāna e ho‘omalu i ka polokalamu ho‘opō‘aiāpuni o ke Kalana, me ka ho‘olaha pū no ka lehulehu a me nā hanana ho‘ona‘auao.

Papa Hana Laulā i Hō‘ano Hou ‘ia
 Wehewehe ‘Ano no nā Pono Kūlanakauhale o Kaua‘i
 Hana ‘Ōpala Pa‘a

Māhele 2. Ka Wānana no ka ‘Ōpala a me ka Mea i Hana ‘ia ai

Hō‘ike ‘ia i loko o kēia māhele ka wānana ‘ana no ka mea i hana ‘ia ai ka ‘ōpala a me ka nui i ka hala ‘ana o kekahi kōā manawa he 15 makahiki. No kēia wehewehe ‘ano, ho‘omaka ka wā ho‘olālā ma ka 2020 a ho‘omau aku ā hiki i ka 2035.

Ua hana ‘ia nā ana ulu e ka SMS Research and Marketing Service, Inc. (SMS 2014) no ke Kalana ‘o Kaua‘i no ka Papa Hana Laulā i Hō‘ano Hou ‘ia. ‘O nā ana ulu no ke Kalana i wānana ‘ia, he 1.09% no ka po‘e noho a 1.02% no ka heluna po‘e malihini kipa o ka makahiki. Ua emi mai kēia mau ana i nā ana i wānana ‘ia a ho‘ohana ‘ia i loko o ka Integrated Solid Waste Management Plan (ISWMP) (1.72% o ka makahiki no ka po‘e noho a 1.62% o ka makahiki no ka po‘e malihini kipa). Ua hō‘ulu‘ulu ka SMS i ka wānana heluna kanaka no nā makahiki e hiki mai ana ma ka ho‘onui ‘ana i ke ana ulu me ka heluna kanaka o ka makahiki ma mua iho. Ua ho‘ohuihui ke Kalana i nā heluna po‘e noho a me ka heluna po‘e malihini kipa (‘o ia ho‘i ka heluna kanaka i ‘ike ‘ia) e loa‘a ai ka heluna kanaka nui e hō‘ike ana i nā mea nāna e hana ana i ka ‘ōpala o ka hale a me nā hui hana. Ua kū nō kēia me ka hana i hana ‘ia i loko o ka ISWMP o ke Kalana. Hō‘ike ka Papa 2-1 i nā wānana no ka heluna kanaka i ‘ike ‘ia no ka 2010–2035 no ke Kalana a me nā ‘āpana ho‘olālā pākahi ‘eono. He kauka‘i nui nā wehewehe ‘ano ma lalo nei, inā nui a li‘ili‘i paha, ma luna o kēia mau hanana.

Papa 2-1. Ka Heluna Kanaka i ‘Ike ‘ia, 2010, a Wānana ‘ia no ka 2020-2035

	Makahiki			
	2010	2020	2030	2035
Kalana ‘o Kaua‘i	82,101	92,485	102,500	107,915
Līhu‘e	17,266	20,582	24,424	26,433
Kōloa – Po‘ipū – Kalāheo	17,248	20,133	22,800	24,213
Hanapēpē – ‘Ele‘ele	6,157	6,463	6,860	7,094
Waimea	5,719	6,144	6,542	6,770
Hanalei (Kapa ‘Ākau)	11,514	12,723	13,357	13,722
Kawaihau – Kapa‘a (Kaua‘i Hikina)	24,196	26,439	28,517	29,684

2.1 Ka Nui o ka Hana ‘Ōpala ‘ana e Kū nei

‘O ka hana mua ke kūkulu ‘ana i kekahi papa hana ho‘omalu no ka wā lō‘ihī, ‘o ia ka hō‘ulu‘ulu a wānana ‘ana i ka nui o ka ‘ōpala e hana ‘ia ana. ‘O ka hana ‘ōpala ‘ana, ‘o ia ka huina ‘ōpala i kiloi ‘ia, ho‘ololi ‘ia i ‘aila, ho‘olilo ‘ia i mea ho‘opulupulu, ho‘opō‘aiāpuni a ho‘ohana hou ‘ia. Ua ho‘opuka ke Kalana i ka ‘ike no ka nui o ka ‘ōpala no nā makahiki 2008-2010. Ua hō‘ulu‘ulu ‘ia ka nui o ka hana ‘ōpala ‘ana o kēlā me kēia kanaka (paona/ke kanaka/ka lā) no kēlā me kēia makahiki ma ka ho‘ohana ‘ana i kēia hana.

$$\text{Huina hana ‘ōpala} = \frac{\text{Huina ‘ōpala (kana/makahiki)}}{\text{Heluna kanaka nui}} \times \frac{2,000 \text{ (paona/kana)}}{365 \text{ (lā/makahiki)}}$$

Papa Hana Laulā i Hō‘ano Hou ‘ia
 Wehewehe ‘Ano no nā Pono Kūlanakauhale o Kaua‘i
 Hana ‘Ōpala Pa‘a

Ua hō‘ike ka ISWMP ua hana ‘ia 116,389 kana ‘ōpala i ka 2005. Hō‘ike ka ‘ike Kalana ua pi‘i ka nui o kēia ā kahi o ka 120,000 kana i ka 2008, a laila, ua emi ma kahi o 105,000 kana i ka makahiki 2009 a me ka 2010. Ma loko o kekahi noi‘i o ka wā i hala hope ihola na ke Kalana, he 6.7 paona/kanaka/lā ke ana hana ‘ōpala i wānana ‘ia no ka 2012 a me ka 2013.

2.2 Ka Mea i Hana ‘ia ai ka ‘Ōpala

Ma ke ‘ano he māhele o ka ISWMP o ke Kalana ‘o Kaua‘i o ka 2009, ua mālama ke Kalana i kekahi noi‘i ho‘ākāka i ke ‘ano o ka ‘ōpala i kiloi ‘ia ai. Me ke kōkua o nā luna aupuni o ke Kalana, ua ho‘oholo ‘ia ua ho‘omau ke kūlana nui o ka ‘ōpala ma ke kūlana ho‘okahi nō.

Hō‘ike ka ISWMP i ka wāwahi ‘ia ‘ana o nā mea i hana ‘ia ai ka ‘ōpala ma kēlā me kēia hunahuna ma ke ‘ano he pakeneka o ka huina ‘ōpala i hana ‘ia. Ma loko o ka hō‘ike, ua waewae ‘ia nā hunahuna ‘ōpala ma muli o nā māhele like ‘ole. ‘O nā ‘ano māhele like ‘ole, ‘o ia ho‘i nā mea ho‘opō‘aiāpuni ‘ia, nā mea ola, nā mea kūkulu a wāwahi hale, nā mea pa‘a, ka ‘ōpala ho‘opilikia o ka hale, ka laholio, a me nā koena like ‘ole. Hō‘ike ka Papa 2-2 i nā mea i hana ‘ia ai ka ‘ōpala i wānana ‘ia i loko o ka wā ho‘olālā. ‘A‘ole i helu ‘ia i loko o kēia papa ka ‘ōpala kūkulu a wāwahi hale i waewae mua ‘ia ai a i ‘ole ka ‘ōpala kūikawā (pelapela, asbestos, a pēlā aku).

‘O kekahi mea nui, ‘o ka wehewehe ‘ano o nā mea i hana ‘ia ai ka ‘ōpala i mālama ‘ia ai i ka 2005 a hō‘ike ‘ia ma loko o ka ISWMP, ‘o ia nā mea i hana ‘ia ai ma kahi o ka pu‘u ‘ōpala, ‘o ka māhele ma hope o nā hanana i mālama ‘ia ai e ke Kalana a i ‘ole nā hui ‘ōpala i ‘ona ‘ia. No laila, ua emi mai ka nui o nā mea i hiki ke ho‘ohuli ‘ia i kahi ‘ē i hō‘ike ‘ia he hiki paha ke hō‘alo ‘ia ma mua o ka mea e hō‘ike ‘ia inā ho‘oholo ‘ia nā mea i hana ‘ia ai ka ‘ōpala ma kekahi māhele o ka hana ma mua o ke kiloi ‘ia ‘ana i ka pu‘u ‘ōpala, ma mua ho‘i o ka ho‘ohuli ‘ia ‘ana i kahi ‘ē. Ma muli o ka noi a ke Kalana, e lilo kēia wehewehe ‘ano i kumu no kēia hō‘ike.

Papa 2-2. Nā Mea i Hana ‘ia ai ka ‘Ōpala Pa‘a

Ka Waewae ‘ana	Mea	Pakeneka ‘Ōpala Hale	Pakeneka ‘Ōpala Hui Hana
Pepa	Nūpepa	5.9%	5.3%
	Makakina	3.0%	2.8%
	Ke‘ena Kūlana Ki‘eki‘e	0.8%	2.3%
	‘Eke OCC a me ke Kraft	5.0%	11.3%
	Pepa Ho‘opō‘aiāpili ‘O‘ā ‘ia	7.9%	5.3%
	Pepa Ho‘opō‘aiāpili ‘Ole ‘ia	3.5%	3.3%
	Pepa Ho‘opulupulu ‘ia	7.8%	8.2%
Huina Pepa		33.8%	38.5%
‘Ea	Kini Mea Inu PET #1	0.6%	0.3%
	Kini Mea Inu PET #1 (Waiho ‘ia)	0.4%	0.5%
	Kini HDPE #2 HDPE	1.5%	1.3%

Papa Hana Laulā i Hō‘ano Hou ‘ia
 Wehewehe ‘Ane no nā Pono Kūlanakauhale o Kaua‘i
 Hana ‘Ōpala Pa‘a

Kini HDPE #2 HDPE (Waiho ‘ia)	0.0%	0.0%	
Polystyrene #6	1.2%	2.3%	
Nā Kini ‘Ea Like ‘Ole	0.4%	0.4%	
Nā Mea Kū‘ai ‘Ea Like ‘Ole	3.2%	3.9%	
Film/Wahī/‘Eke	6.0%	6.3%	
Huina ‘Ea	13.4%	15.0%	
Mea Hao			
‘Aluminuma Waiho ‘Ole ‘ia	0.0%	0.0%	
Kini Mea Inu ‘Aluminuma Waiho ‘ia	0.4%	0.4%	
Mea‘ai me ka Mea Inu Ferrous	1.7%	1.4%	
Nā Mea Hao Ferrous Like ‘Ole	2.0%	1.6%	
‘Ōpala Ferrous ‘Ole Like ‘Ole	1.4%	1.1%	
Huina Mea hao	5.4%	4.5%	
Aniani			
Kini Aniani Waiho ‘Ole ‘ia	2.6%	2.0%	
Kini Aniani Waiho ‘ia	1.5%	1.6%	
‘Āpana Aniani ‘Ō‘ā ‘ia	0.6%	0.3%	
Huina Aniani	4.7%	3.9%	
‘Ōpala Pā Hale			
‘Ōpala Pā Hale Li‘ili‘i	8.0%	5.5%	
‘Ōpala Pā Hale Nui	0.0%	0.0%	
Huina ‘Ōpala Pā Hale	8.0%	5.5%	
‘Ōpala Mea‘ai	‘Ōpala Mea‘ai	15.7%	13.5%
Huina ‘Ōpala Mea‘ai	15.7%	13.5%	
Lā‘au			
Kīkī ‘Ole ‘ia i ka lā‘au	0.3%	3.4%	
Kīkī ‘ia i ka lā‘au	1.7%	1.3%	
Huina Lā‘au	2.0%	4.7%	
‘Ōpala Wāwahi/Ho‘oponopono/ Kūkulu	‘Ōpala Kūkulu/Ho‘oponopono/Wāwahi	1.5%	1.1%
Huina ‘Ōpala Total Wāwahi/Ho‘oponopono/ Kūkulu		1.1%	
Nā Mea Pa‘a			
Mea Uila me ka Mea Hale	1.8%	0.7%	
Nā Mīkini Hale			
Central Processing	0.0%	0.1%	
Units/Peripherals			
Computer Monitors/kīwī	0.0%	0.0%	
Kelepona Hele a me ka	0.0%	0.0%	
Ho‘opihā Uila			
Nā Mea Pa‘a Like ‘Ole	0.3%	0.4%	
Huina Mea Pa‘a	2.0%	1.1%	
‘Āpā Lole a me ka ‘Ili Pipi	‘Āpā Lole a me ka ‘Ili Pipi	3.2%	4.6%
Huina ‘Āpā Lole a me ka			
‘Ili Pipi			
Kaiapa	Kaiapa	2.9%	1.7%
Huina Kaiapa		2.9%	1.7%
Laholio	Laholio	0.2%	0.3%

Papa Hana Laulā i Hō‘ano Hou ‘ia
 Wehewehe ‘Ano no nā Pono Kūlanakauhale o Kaua‘i
 Hana ‘Ōpala Pa‘a

Huina Laholio		0.2%	0.3%
HHW	Mea Kū‘ai Ka‘a	0.0%	0.0%
	Pena a me ka Lā‘au	0.0%	0.0%
	Ho‘oma‘ema‘e		
	Lā‘au Make Mū, Lā‘au Make	0.0%	0.0%
	Mea Kanu, Lā‘au Make Pepeiao		
	Lā‘au Ho‘oma‘ema‘e Hale	0.0%	0.0%
	Iho ‘Akika Kēpau	0.0%	0.0%
	Nā Iho Like ‘Ole	0.5%	0.4%
	Nā HHW Like ‘Ole	0.2%	0.0%
	Mea Kū‘ai i Loa‘a ka Mercury	0.0%	0.0%
Huina HHW		0.7%	0.5%
Mea ‘Oi	Mea ‘Oi	0.1%	0.1%
Huina Mea ‘Oi		0.1%	0.1%
Nā Mea Ola Like ‘Ole	Nā Mea Ola Like ‘Ole	0.8%	0.7%
Huina Mea Ola Like ‘Ole		0.8%	0.7%
Nā Mea Ola Like ‘Ole	Nā Mea Ola Like ‘Ole	1.8%	1.5%
Huina Mea Ola ‘Ole Like ‘Ole		1.8%	1.5%
Hunahuna/‘Ō‘ā Nui ‘ia	Hunahuna/‘Ō‘ā Nui ‘ia	3.6%	2.5%
Huina Hunahuna/‘Ō‘ā Nui ‘ia		3.6%	2.5%
Nā Mea Like ‘Ole		0.3%	0.3%
Huina Mea Like ‘Ole		0.3%	0.3%
HUINA NUI		100.0%	100.0%

2.3 Ka Wānana no ke Kumu o ka ‘Ōpala

Ma ka ho‘okele waiwai ‘ana o nā aupuni holomua loa o kēia wā, he ‘ano pa‘a mau nō ke kūlana nui o ka hana ‘ōpala ‘ana i ka holo ‘ana o ka manawa. Hiki ke kōkua nā loli ma ka wahī ‘ia ‘ana o nā mea kū‘ai hui pū ‘ia me ka ‘ike no ka ho‘okele waiwai a me ke kūlana o ka ‘āina ā puni, ka mālama ‘āina ‘ana, a me ka ho‘ona‘auao ‘ana i ka pi‘i ‘ana o ka nui o ka ho‘ohana ‘ia ‘ana o nā mea kū‘ai, a he kōkua nō ho‘i kēlā i ka nui o ka ‘ōpala i hana ‘ia e kēlā me kēia kanaka. I loko o kēia wehewehe ‘ano, kuhi ‘ia he ho‘omau nō ke kūlana nui o ka hana ‘ōpala ‘ana o ke kanaka i nā makahiki e hiki mai ana. Ma ka ho‘ohui ‘ana i ke ana hana ‘ōpala me nā kuhi no ka heluna kanaka, pēlā i wānana ‘ia ai ka huina ‘ōpala nui o ka makahiki i ka hala ‘ana o ka wā ho‘olālā he 15 makahiki.

He hō‘ike ka huina ‘ōpala nui i hō‘ike ‘ia i ka 2010 i ka heluna kanaka i ‘ike ‘ia (‘o ia ho‘i, no ka hale a me nā hui hana). Ua hō‘ike ka ISWMP he 56% ka nui o ka ‘ōpala hui hana a he 44% ka nui o ka ‘ōpala hale i hana ‘ia i kēlā me kēia makahiki. Ke kuhi ‘ia he pa‘a mau ke kūlana hana ‘ōpala i ka holo ‘ana o ka manawa, wānana ‘ia ke ana hana ‘ōpala ma ka hō‘ulu‘ulu ‘ana i nā huina ‘ōpala hale me nā hui hana i pi‘i i loko o ka wā holo‘oko‘a o ka wā ho‘olālā no ka 2020-2035.

Papa Hana Laulā i Hō‘ano Hou ‘ia
 Wehewehe ‘Ano no nā Pono Kūlanakauhale o Kaua‘i
 Hana ‘Ōpala Pa‘a

Papa 2-3. He Hō‘ulu‘ulu ‘ana no ka Huina ‘Ōpala Kaona o ke Kalana i Hana ‘ia, 2010 a Wānana ‘ia no ka 2020-2035

Makahiki	Hana ‘Ōpala o ka Makahiki		
	Hale	Hui Hana	Huina
2010	44,171	56,218	100,389
2020	49,758	63,328	113,086
2030	55,146	70,186	125,332
2035	58,059	73,894	131,953

Wānana ‘ia ka nui o ka hana ‘ōpala ‘ana no nā ‘āpana ho‘olālā ‘eono ma ka ho‘onui ‘ana i nā pakeneka heluna kanaka i wānana ‘ia e noho nei ma loko o kēlā me kēia o nā wahi ho‘olālā ma ka huina nui o ka ‘ōpala kaona o ke Kalana. Hō‘ike ka Papa 2-4 i nā huina hana ‘ōpala ‘ana no ke Kalana i waewae ‘ia ma ka ‘āpana ho‘olālā no ka wā ho‘olālā 2020-2035.

Papa 2-4. He Hō‘ulu‘ulu ‘ana no nā Huina ‘Ōpala Kaona o ke Kalana ma ka ‘Āpana Ho‘olālā, 2010 a Wānana ‘ia no ka 2020-2035

	Hana ‘Ōpala o ka Makahiki			
	2010	2020	2030	2035
Kalana ‘o Kaua‘i	100,389	113,086	125,332	131,953
Līhu‘e	21,112	25,167	29,864	32,321
Kōloa – Po‘ipū – Kalāheo	21,090	24,618	27,879	29,606
Hanapēpē – ‘Ele‘ele	7,528	7,903	8,388	8,674
Waimea	6,993	7,513	7,999	8,278
Hanalei (Kapa ‘Ākau)	14,079	15,557	16,332	16,779
Kawaihau – Kapa‘a (Kaua‘i Hikina)	29,586	32,328	34,869	36,296

Kuhi ‘ia he pi‘i mai koe ka nui o ka ‘ōpala e hana ‘ia e nā kānaka noho a me nā malihini kipa ma Kaua‘i ma kahi o ka 17 pakeneka mai kahi o ka 113,068 kana i ka makahiki waihona kālā 2020 a hiki i ka 131,953 kana i wānana ‘ia i ka makahiki waihona kālā 2035, a he pono nā kahua hou a i ‘ole pono e ho‘oponopono ‘ia e kūpono ai kēia pi‘i ‘ana. I mea e kōkua ai i kēia pi‘i ‘ana, ke ho‘olālā nei ke Kalana e ho‘okumu i kekahī hanana ho‘ēmi ‘ōpala, ho‘ohana hou, a me ka ho‘ololi mea ola i wānana ‘ia ai he ho‘onui i ka nui o ka ‘ōpala i ho‘ohuli ‘ia mai kahi o ka pu‘u ‘ōpala. Hō‘ike ‘ia kēia mau ho‘oponopono ‘ana no ka ‘ōpala pa‘a o nā pono kūlanakauhale ma lalo ma ka Māhele 3.

Papa Hana Laulā i Hō‘ano Hou ‘ia
Wehewehe ‘Ano no nā Pono Kūlanakauhale o Kaua‘i
Hana ‘Ōpala Pa‘a

Māhele 3. Ke Kūlana o ka Papa Hana no ka Wā Lō‘ihī

3.1 Hō‘ike Laulā

I ka 1991, ua ho‘opa‘a ka Moku‘āina ‘o Hawai‘i i kekahi pahu hopu e ho‘ohuli 50 pakeneka o ka ‘ōpala mai ke kiloi ‘ana ma ka pu‘u ‘ōpala i ka hiki ‘ana mai o ka 2000. I ka 2005, ua hō‘ike ke Kalana ‘o Kaua‘i he 25 pakeneka ka nui o ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala i kahi ‘ē. I ka 2009, ua ho‘olaha ke Kalana i kona papa hana, ‘o ia ho‘i ka *Integrated Solid Waste Management Plan* (ISWMP), a i loko o ia mea, hō‘ike ‘ia a paipai ‘ia nā ‘ano polokalamu like ‘ole, nā banana, a me nā kahua e ho‘okumu ‘ia ai e ho‘onui ai i ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala. He palapala lula alaka‘i kumu ka ISWMP no ke Kalana, a ho‘ohana ‘ia nā mana‘o i paipai ‘ia a me nā hana i loko o ia mea ma lalo nei. Ua wānana ka ISWMP he 35 pakeneka ka nui o ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala i ka hiki ‘ana mai o ka 2013, ‘o ia ka pahu hopu i ho‘opa‘a ‘ia e ke Kalana i ka 2009-2010. I kēia manawa, he kuhi ke Kalana he 31 pakeneka ka nui o ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala i kahi ‘ē.

I mea e ho‘onui ‘ia ai ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala i kahi ‘ē, ua ho‘opa‘a ke Kalana i nā kumumana‘o nāna e paipai i nā hana i ‘oi loa ka pono ma ka ho‘ohana ‘ana i nā mea like ‘ole e ho‘opau ai i ka ho‘ohaumia ‘ia ‘ana o ka ‘āina ma ka paipai ‘ana i ka hana ‘ia a me ka ho‘ohana ‘ia ‘ana o nā mea kū‘ai ma kahi kūloko. Ua kū like nō nā kumumana‘o ho‘opau ‘ōpala me ka mana‘o pa‘a o ke Kalana no ka ho‘omau ‘ana i ka hānai ‘ana o ko Kaua‘i po‘e iā lākou iho. Ua ho‘opa‘a ‘ia nā kumumana‘o no nā lula alaka‘i ho‘opau ‘ōpala a me ka pahu hopu no ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala i kahi ‘ē e ke Komikina o ke Kalana ‘o Kaua‘i ma ‘Okakopa 2011. Ma ka ho‘okō ‘ana i ka ‘ōlelo o kēia lula alaka‘i, ua ho‘opa‘a ke Kalana i nā kānāwai, nā lula alaka‘i, ka ho‘opa‘a lula ‘ana, a me nā hana e ho‘opa‘a ai i nā kumumana‘o ho‘omalu ho‘opau ‘ōpala e like me ka mea i hiki me ka mana‘o pū nō e ho‘okō i ka ISWMP o ke Kalana a me ka ho‘okō pū aku i nā pahu hopu no ka ho‘ohuli ‘ana i ka ‘ōpala i kahi ‘ē ma ke ‘ano e ho‘omakauli‘i ai i ke kālā. ‘O kekahi māhele o kēia hana, ua ho‘opa‘a ke Kalana i kekahi pahu hopu ho‘ohuli ‘ōpala i kahi ‘ē he 70% i ka hiki ‘ana mai o ka 2023.

Ma loko o ka Hawai‘i Revised Statutes, Mokuna 342G, Integrated Solid Waste Management (HRS 342G-2), na kēlā me kēia kalana e no‘ono‘o i nā hana ho‘omalu a ho‘oponopono ‘ōpala pa‘a ma lalo nei ma kēia ka‘ina:

1. Ho‘ēmi kumu ‘ōpala;
2. Ho‘opō‘aiāpuni a ho‘ololi mea ola, me ka ho‘opulupulu pū; a
3. Hana pu‘u ‘ōpala a puhi ahi.

Ua hana ke Kalana ‘o Kaua‘i ma mua i nā noi‘i a me nā wehewehe ‘ano i ho‘ohana ‘ia ai i loko o kēia hō‘ike. ‘O nā noi‘i i nui loa ai ko lākou kōkua ‘ana i kēia Papa Hana Laulā i Hō‘ano Hou ‘ia, ‘o ia kēia:

- Papa Hana Ho‘omalu ‘Ōpala Pa‘a i Ho‘ohuihui ‘ia, Kalana ‘o Kaua‘i (Beck 2009)

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- Papa Hana Nui o ke Kahua Kikowaena Ho‘opulupulu, Kalana ‘o Kaua‘i (Beck 2008)
- Hō‘ike Ho‘ā‘o Ho‘opō‘aiāpuni ma Ka‘e Alanui, Kalana ‘o Kaua‘i (SAIC 2011)
- Noi‘i no ke Kūpono o ka ‘Ohi Kumu Waiwai o Kaua‘i, Kalana ‘o Kaua‘i (AECOM 2013)

Aia i loko o ka ISWMP kekahī papa hana no nā hana i paipai ‘ia no ke Kalana e ho‘onui ai i ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala i kahi ‘ē ma ka ho‘okumu ‘ana i nā māhele hana i ho‘ohuihui ‘ia a makauli‘i no ka ho‘omalū ‘ana i ka ‘ōpala pa‘a. Ua kōkua ka Hō‘ike Ho‘ā‘o Ho‘opō‘aiāpuni ma Ka‘e Alanui ma ka ho‘ākāka ‘ana i ka hana a ke Kalana ma ka ‘ohi ‘ana i nā mea e ho‘opō‘aiāpuni ai a ma ka hana ‘ana i kekahī kuhi no ka pono o ka hana. Ho‘ākāka ka Papa Hana Ho‘opulupulu i kekahī hana no ke kūkulu ‘ana i kekahī kahua kikowaena ho‘opulupulu no nā mea e pono ai ke Kalana. Hāpai ka Noi‘i Kahua no ka Pono o ka ‘Ohi Kumu Waiwai (Resource Recovery Park: RRP) i kekahī papa hana e hana ai ke Kalana e hō‘ike ana i nā māhele hana like ‘ole a me nā ‘ike mīkini i loa‘a no ke Kalana a me ka mea e hiki ai no ka ho‘oholo ‘ana i kahi e kūkulu ‘ia ai nā kahua e ho‘onui ai i ka mea e ho‘ohuli ‘ia ai ka ‘ōpala i kahi ‘ē.

I mea e ho‘okō ‘ia ai nā pahu hopu o ke Kalana no ka wā lō‘ihī e hiki mai ana a me ka makemake i wānana ‘ia ā hiki i ka 2037, ‘o ka pahu hopu nui o ke Kalana, ‘o ia ho‘onui ‘ana i ka ‘ohi ‘ana i ka ‘ōpala pa‘a ma o ka ho‘ohana hou ‘ana, ka ho‘opō‘aiāpili ‘ana, ka ho‘opulupulu ‘ana, a me ka ho‘ololi ‘ana i ‘aila, i mea e ho‘ēpi ai i ka nui o ka ‘ōpala e pono ai ke kiloi ‘ana ma ka pu‘u ‘ōpala. Ma ka ho‘okō ‘ana i kēia mau mana‘o o ke Kalana, e pi‘i ka ho‘omalū ‘ia ‘ana o nā polokalamu ‘ōpala pa‘a ma ka ‘ohi ‘ana i ka ‘ōpala mea kanu a me nā mea i ‘ō‘ā ‘ia a ho‘opō‘aiāpuni ‘ia a me ka ho‘ohui ‘ana i kekahī papa hana hapa mīkini no ka ‘ohi ‘ana ma nā kaiāulu i lawelawē ‘ia i kēia manawa ma ka hana lima ‘ana; ho‘onui i ka pono o ka hana ma nā kahua kiloi ‘ōpala a me nā kahua i nui nā hana lawelawē; ho‘onui i ka ho‘opō‘aiāpuni ‘ia ‘ana o nā mea like ‘ole me ke kūkulu a me ka ho‘oholo pū ‘ana i kekahī kahua ‘ohi a ho‘opulupulu; a kūkulu i kekahī pu‘u ‘ōpala hou no nā mea i ho‘okoe ‘ia i hiki ‘ole ke ho‘opō‘aiāpuni ‘ia i ‘aila a i ‘ole i mea hou aku.

Hō‘ulu‘ulu ka mo‘olelo ma lalo nei i nā hana a ke Kalana e hana ai i ka hala ‘ana o nā makahiki he iwakālua e hiki mai ana e ho‘okō ‘ia ai ka pahu hopu ‘o ia ka ho‘ēmi ‘ana i ka pono e kiloi ‘ia ai ka ‘ōpala ma ka pu‘u ‘ōpala. Ma muli o ka loa‘a mua o nā polokalamu a me nā kahua holo pono ma ke Kalana, mana‘o ‘ia e ho‘omau a ho‘onui hou i nā hana he nui o kēia mau hanana i ka wā e hiki mai ana.

3.2 Ka Ho‘ēmi Kumu ‘Ōpala

He pa‘akikī ka ho‘ākāka ‘ana i ka ho‘ēmi ‘ōpala ‘ana, no ka mea, hō‘alo ‘ia ka hana ‘ōpala ‘ana. Ma loko o kēia māhele o ka Papa Hana, hō‘ike loiilo ‘ia nā hana e ho‘ēmi ‘ia ai ka ‘ōpala, e like me ia i ho‘ākāka ‘ia ma ka HRS 342G-26, penei:

- Ho‘onui i ke kūpono o ka hana no nā ‘ano mea like ‘ole a pau;

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- Kuapo i nā mea i hiki ke kiloi ‘ia a me nā mea kū‘ai me nā ‘āpana i hiki ke ho‘ohana hou ‘ia a me nā mea kū‘ai; a
- Ho‘ēmi i ka wahī.

I mea e ho‘ēmi nui ‘ia ai ka nui o ka ‘ōpala i hana ‘ia, pono e ho‘ololi ‘ia nā hana he nui ma ka wahī ‘ana o kēia manawa no nā mea kū‘ai like ‘ole, a pono nō ho‘i e ‘oi aku ka pa‘a o nā mea kū‘ai, a pono nō ho‘i e ho‘ololi ‘ia nā hana a ka po‘e kū‘ai ma o ka ho‘ona‘auao ‘ana a me nā pōmaika‘i kālā. ‘Oiai ‘a‘ole hiki i ke Kalana ke koi i ke ‘ano o ka hana ‘ia ‘ana o nā mea kū‘ai a me ka wahī, nānā nui ke Kalana i ka loiloi ‘ana i nā koho ho‘ona‘auao a me ka ho‘okele waiwai i loa‘a ma ke Kalana e ho‘ēmi ai i ka nui o ka ‘ōpala i hana ‘ia e nā kānaka noho a me nā hui hana.

E ho‘omau ke Kalana i ka ho‘omalu ‘ana a i ‘ole ka mālama ‘ana i nā hanana ho‘ēmi kumu ‘ōpala no nā kānaka noho a me nā hui hana ma Kaua‘i. ‘O kekahī mau mana‘o, ‘o ia ke kūkulu ‘ana i nā lula alaka‘i a me nā koi no ka ho‘ēmi ‘ana i ka ‘ōpala, a he hiki nō i ke Kalana ke hana ma ke ‘ano he kumu ho‘ohālike no ka ho‘ēmi ‘ana i ka ‘ōpala ma ke kumu. E like nō me nā papa hana loiloi ‘ōpala no nā hui hana, he maika‘i ke kipa ka Luna Ho‘omalu Ho‘opō‘aiāpuni o ke Kalana i kēlā me kēia kahua ma nā ke‘ena a me nā hale a pau o ke Kalana, ‘a‘ole no ka hō‘oi wale nō i nā hana ho‘opō‘aiāpuni, akā, no ka nānā nō ho‘i i nā mea like ‘ole kekahī e ho‘onui ai i ka ho‘ēmi ‘ana i ka ‘ōpala.

3.2.1 Nā Hana ma ka Home a me ka Hui

3.2.1.1 Nā Hana ma ka Home

Ka ‘Ohi ‘Ōpala e Loli ai ke Kumu Kāki

He hana nui ka paipai ‘ana i nā kānaka e no‘ono‘o i ka ho‘ēmi ‘ana i ka ‘ōpala ma ke kumu ma mua o ka paipai ‘ana iā lākou e ho‘opō‘aiāpuni i kā lākou ‘ōpala. ‘O ka hana e ho‘ololi ai i ka ho‘ēmi ‘ōpala ‘ana, he ho‘ololi ‘ana ia ma ka hana a kānaka ia lā aku a ia lā aku. ‘O kekahī pōmaika‘i, ‘o ia ka loli ‘ana o ke kumu kāki no ke kiloi ‘ana i ka ‘ōpala, ‘o ia ho‘i he polokalamu i kapa ‘ia Pay-As-You-Throw (PAYT). E ho‘okumu ke Kalana i kekahī papa hana i ho‘ohuihui ‘ia ai kēia ‘ano polokalamu PAYT e kāki ‘ia ai nā kānaka noho a pau kekahī kāki pa‘a mau no ke kiloi ‘ana i ka ‘ōpala hale; he lawelawe i ‘ae ‘ia ai ke kiloi ‘ia ‘ana o ka ‘ōpala no luna mai o ho‘okahi ka‘a ho‘okahi manawa o ka pule a me kekahī huina lepe e kau ai ma luna o ka ‘ōpala pa‘a i nui loa no ke ka‘a. Inā pono i nā kānaka noho kekahī ka‘a hou aku a i ‘ole nā lepe hou aku, e kāki ‘ia lākou he keu aku e ke Kalana. Ke mana‘o nei ke Kalana i ho‘omaka i ka polokalamu PAYT i ka wā e ho‘omaka ‘ia ai ka hana ‘ohi mīkini i ka ‘ōpala ma nā wahi a pau o ka mokupuni ma ka‘e alanui. E ho‘omau ke Kalana i ka mālama ‘ana i nā papa hana e koho ai no ke kiloi ‘ana i ka ‘ōpala ma nā kahu akiloi ‘ōpala a me ka pu‘u ‘ōpala me ke kāki ‘ole e ho‘ēmi ai i ke kiloi ‘ōpala ‘ana. I mea e kōkua ‘ia ai ka holo pono o kēia hana, e ho‘opuka ke Kalana i kekahī kānāwai e koi ana i kau ‘ia o nā ‘ōpala pa‘a ma luna o kekahī ka‘a a i ‘ole ka ho‘opa‘a ‘ia o ka lepe e ‘ohi ‘ia ai, a me ka hana ‘ana ā ‘oi aku ka ‘o‘ole‘a o nā kānāwai kiloi a lū ‘ōpala.

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Ka Papa Hana ‘Eke Huluhulu

Ke paipai aku nei ke Kalana i ka ho‘ohana aku i nā papa hana kuapo, e like me ke Aloha Shares Network. I kēia manawa, ho‘olaha kēia hana lawelawe ma luna o ka internet i nā mea i hā‘awi manawale‘a ‘ia mai nā kānaka, nā hui hana, nā ‘ahahui, a me nā ‘oihana like ‘ole ma lalo o ke aupuni. ‘O nā hui waiwai ho‘opukapuka ‘ole, nā ‘ekalesia, a me nā kula wale nō nā hui i ‘ae ‘ia ai. ‘O kekahī ‘ano polokalamu, he ho‘ohui pū aku i nā kānaka e ‘imi nei i kekahī mea e ho‘ohana hou ai me nā kānaka e mana‘o nei e kiloi aku i kā lākou ukana. He holo pono nō kēia polokalamu a me nā polokalamu ‘ē a‘e ma ka internet ma ka ho‘ohuli ‘ana i nā ‘ōpala mai ka pu‘u ‘ōpala aku ma ka hā‘awi ‘ana i kekahī koho hou aku ma waho o ka ho‘olaha ma‘amau ‘ana a me ka ‘ae ‘ana i nā kānaka e ho‘olaha aku i kā lākou ukana e kū‘ai lilo a hā‘awi lilo ana paha.

Ka ‘Ōpala Ho‘opilikia o ka Hale

Ma waho a‘e o ka ho‘ēmi ‘ana i ka nui o nā ‘ōpala i hana ‘ia, ho‘ākāka ke Kānāwai o ke Kalana i ka ho‘ēmi ‘ana i ke kumu ‘ōpala ma ke ‘ano he ho‘ēmi ‘ana i ka haumia o ka ‘ōpala i hana ‘ia. I loko o ka hapa nui o nā ‘ōpala ho‘opilikia o ka hale, loa‘a nā mea ‘awa‘awa, nā mea e popopo ai, nā mea e ‘ā ai i ke ahi a i ‘ole pahū. Ho‘ohui ‘ia i loko o kēia ho‘ākāka ‘ana nā mea e waiho ‘ia ai i loko o ka hale ka‘a, ka hale waihona o lalo o ka hale, ka hale ‘au‘au a i ‘ole ka hale kuke, e like me ka lā‘au ho‘oma‘ema‘e pena a i ‘ole nā iho.

Nā ‘Eke ‘Ea a me nā Wahī Mea‘ai Styrofoam

No ka styrofoam a me nā ‘ano wahī mea‘ai like ‘ole i hiki ‘ole ke ho‘opō‘aiāpuni ‘ia, paipai ke Kalana e ho‘ohana ‘ia kekahī ‘ano wahī mea‘ai ‘oko‘a e popopo wale ai ma ke ‘ano ma‘amau o nā mea ola. Loa‘a kēia mau ‘ano koho ma ka mokupuni. Mana‘o ‘ia ka wahī popopo wale he mea i hiki ke ho‘ohana ‘ia i mea ho‘opulupulu i nā manawa he nui, no ka mea, ‘o ka mea nui i hana ‘ia ai, he pia kulina. Ua ho‘okumu nō ho‘i ke Kalana i kekahī kānāwai ā puni ka mokupuni e kuapo ai i nā ‘eke kū‘ai i hiki ke kiloi ‘ia me nā ‘eke huluhulu.

Ke Kahua Ho‘ohana Hou

Hiki ke mana‘o ‘ia ka ho‘ohana ‘ia ‘ana o nā mea kūloko ‘o ia ka hana hō‘alo waiwai loa, ‘oiai ‘o ia ke koho i emi loa ai ka lilo o nā kumu waiwai a me ka ‘aila, he paipai kēia hana i ka ho‘ohana hou ‘ana, a he pani ia no ke kū‘ai ‘ana i mea hou. He mālama ke kahua ho‘ohana hou i nā hanana e kuapo ai i nā mea i pau ka ho‘ohana ‘ia a i ‘ole i hapa ka ho‘ohana ‘ia. Ho‘oholo pinepine ‘ia kēia ‘ano kahua e kekahī hui waiwai ho‘opukapuka ‘ole, e like me ke Goodwill a me ka Habitat for Humanity. Ua kuhi ‘ia he 1% a emi ka nui o kēia mau ‘ano mea ma loko o ka pu‘u ‘ōpala.

Ke ho‘olālā nei ke Kalana e ho‘oka‘awale i wahi ma ka RRP i ho‘olālā ‘ia no ke kūkulu ‘ia ‘ana o kekahī kikowaena ho‘ohana hou i hiki ke ho‘oholo ‘ia ma kekahī ‘ano i kū like me nā kahua waiwai ho‘opukapuka ‘ole e kū nei ma ke Kalana. Ua mana‘o ‘ia e hō‘oi ke kahua i nā papa hana ho‘ohana hou ma ke Kalana ma ke kāko‘o ‘ana i nā hanana e like me ka ho‘oponopono hou ‘ana

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i nā mea i pau ka pono, e like me nā paikikala, ka pono hale, a me nā mīkini uila pū kekahī. Aia a ho‘okumu ‘ia, mana‘o ‘ia e kūkulu ‘ia kekahī kikowaena no nā mea i pa‘akikī ka ho‘opō‘aiāpuni ‘ana ma ke kikowaena ho‘ohana hou.

3.2.1.2 Nā Hana ma ka Hui

Ke Kōkua Hana Mīkini a me ka Loiloī ‘Ōpala

I kēia manawa, kōkua ke Kalana i nā hui hana ma ka mālama ‘ana i ka loiloī ‘ōpala no lākou. Paipai ke Kalana i kēia hana lawelawe ma o ka ho‘ona‘auao ‘ana i ka lehulehu a me ka ho‘olaha ‘ana a ho‘omau ke Kalana i ke kōkua ‘ana i nā hui hana ma ka ho‘ēmi ‘ana i kā lākou ‘ōpala a me ka ‘imi ‘ana i nā koho e hō‘alo ai i ka hana ‘ana i ka ‘ōpala. Ma muli o ke kāki ‘ia ‘ana o nā hui hana no ka ‘ohi ‘ana i ka ‘ōpala pa‘a ma muli o ka huina nui, loa‘a nō ka mana‘o i kēia manawa e ho‘ēmi i ka nui o ka ‘ōpala i hana ‘ia.

Nā Wahī i Hiki ke Ho‘ohana Hou ‘ia

Ma muli o ka mamao o ke Kalana ‘o Kaua‘i, halihali ‘ia nā mea kū‘ai ma loko o nā pahu pepa. He kōkua nā wahī ho‘ohana hou ‘ia (e like me nā pā halihali ukana ‘ea) i nā hui hana ma ka ho‘ēmi ‘ana i ko lākou lilo me ka hō‘alo pū aku i ka ‘ōpala kūpono ‘ole ma ka ho‘ēmi ‘ana i ke kumu kū‘ai no ka wahī mea kū‘ai, ka ho‘ēmi ‘ana i ka pohō ma ka hana ‘ana ā ikaika kūpono ka wahī e hiki ai ke ho‘ohana hou ‘ia ka mea kū‘ai he mau manawa, ka ho‘ēmi ‘ana i ka lilo hana, a me ka hō‘alo ‘ana i nā lilo no ke kiloi ‘ōpala.

Na ka Luna Ho‘omalu Ho‘opō‘aiāpuni o ke Kalana e hō‘ike i kekahī ‘ike no nā wahī halihali ho‘ohana hou a me nā koho like ‘ole no nā hui e ho‘ēmi ‘ia ai ka ‘ōpala ma o nā loiloī ‘ōpala a me nā ha‘i‘ōlelo no ka lehulehu i ka Chamber of Commerce a me nā hui hana ‘ē a‘e.

Ka Ho‘ēmi Kumu ‘Ōpala o nā Hale Noho Ho‘omaha

Ma muli o ke kūlana o ke Kalana he wahi e kipa nui ‘ia e nā malihini huaka‘i, he mea nui nā hōkele, nā motele, a me nā condominium i ho‘olimalima ‘ia ma ka hana kiloi ‘ōpala. Ua nui nō nā mea like ‘ole i hiki i kēia ‘oīhana ke hana e ho‘ēmi ai i ka nui o ka ‘ōpala i hana ‘ia ma nā hōkele, nā motele, a me nā condominium. Na ka Luna Ho‘omalu Ho‘opō‘aiāpuni o ke Kalana e kōkua i nā hui hana ma ka ho‘opō‘aiāpuni ‘ana, ka ho‘ēmi ‘ana i ka ‘ōpala, a me ka ho‘oponopono ‘ana nō ho‘i i nā pilikia no ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala i kahi ‘ē a nāna e mālama i nā loiloī ‘ōpala ke noi ‘ia. E ho‘omau ke Kalana e hana me ka ‘oīhana hale noho ho‘omaha e paipai i ka ho‘ēmi ‘ana i ke kumu ‘ōpala.

3.2.2 Ka Ho‘ona‘auao ‘ana

E no‘ono‘o ke Kalana i ka ho‘onui hou aku i kāna mau hana e ho‘ona‘auao ai i ka lehulehu no ka ho‘ēmi ‘ana i ke kumu ‘ōpala, me kēia mau mana‘o nō:

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- Hana i kekahi ‘ao‘ao ma ka website o ke Kalana e pili ana i ka ho‘ēmi ‘ana i ke kumu ‘ōpala a me nā mana‘o no ka ho‘ohana hou ‘ana. Na kēia ‘ao‘ao e hō‘ike i kekahi mau mana‘o kōkua no nā kānaka noho a me nā hui no ka ho‘ēmi ‘ana i ka nui o ka ‘ōpala a lākou e hana ai.
- Ho‘omau i ka ho‘olako i nā pahu ho‘opulupulu no nā home me ke kāki ‘ole no nā kānaka noho i mea e paipai ai a ho‘onui ai i ka ho‘olilo ‘ana i ka mea‘ai a me ka ‘ōpala pā hale i mea ho‘opulupulu.
- No‘ono‘o i ka paipai ‘ana i ka ho‘ēmi ‘ana i ke kumu ‘ōpala ma o kekahi hanana ho‘olaha ma nā papa ho‘olaha, ke kīwī a i ‘ole ka ho‘olaha nūpepa, nā ho‘olaha no ka lehulehu, nā hō‘ike kīwī kūloko, e like me Russell the Rooster, a pēlā aku.

3.3 Ka Ho‘opō‘aiāpuni a me ka Ho‘ololi ‘ana i ka Mea Ola

‘O ke kumu no kēia māhele o ka papa hana, ‘o ia ka loiilo ‘ana i nā polokalamu ho‘opō‘aiāpuni me ka ho‘ololi mea ola a me ka mālama ‘ana i nā hanana like ‘ole no ka ho‘onui ‘ana i ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala i kahi ‘ē. Penei nā pahu hopu o nā hanana:

1. Ho‘onui i ka ho‘ohuli ‘ia ‘ana o nā ‘ōpala mai ka pu‘u ‘ōpala o Kekaha;
2. Ho‘ēmi i ka lilo o ke Kalana a me ka po‘e kū‘ai;
3. Paipai i ka hānai me ka ho‘olako ‘ana o ko Kaua‘i iā lākou iho;
4. Kōkua i ke kūkulu ‘ia ‘ana o nā hui li‘ili‘i;
5. Ho‘omau i ka pale ‘ana i ke kūlana kūpono o ka ‘āina o ke Kalana; a
6. Ho‘onui i ka komo ‘ana o nā hui i ka hana ho‘ēmi kumu ‘ōpala.

3.3.1 Ka Ho‘opō‘aiāpuni ‘ana

Ka ‘Ohi ‘ana i nā Mea Ho‘opō‘aiāpuni o nā Hale a me ka ‘Ōpala Unit-Based ma Ka‘e Alanui

Ua ho‘okumu ke Kalana i kekahi polokalamu ‘ohi mea ho‘opō‘aiāpuni ma ka‘e alanui ma Kepakemapa 2011. Ma lalo o kēia polokalamu, ua ‘ohi ‘ia nā mea ho‘opō‘aiāpuni mai 1,300 mau hale ‘ohana ma ka ho‘ohana ‘ana i kekahi hana ho‘okahi hana e ho‘okomo ai ka po‘e o kekahi hale ‘ohana i kā lākou mau mea ho‘opō‘aiāpuni a pau i loko o ho‘okahi pahu. ‘O ka pahu hopu o ka polokalamu, ‘o ia ka ho‘ā‘o ‘ana i ka hana lawelawe ho‘opō‘aiāpuni ma ka‘e alanui e

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ho‘omaopopo ai i ka nui o ke komo ‘ana o nā hoa komo a me nā hana like ‘ole e ho‘okō ‘ia ai ka hana i pili i ka ho‘okō ‘ia ‘ana o ka polokalamu ho‘opō‘aiāpuni.

Ma ka ‘awelike, ua kau nā ‘ohana i komo i loko o ka polokalamu ho‘ā‘o 342 paona mea ho‘opō‘aiāpuni ma ka‘e alanui ma ka makahiki. Ke ho‘onui ‘ia kēia huina ma ka huina he 31,297 mau hale ‘ohana, loa‘a ke kuhi o ka makahiki he 5,350 TPY, inā ho‘okō ‘ia kēia hanana ho‘ā‘o ā puni ka mokupuni. Aia i loko o ka hō‘ike no ka hanana ho‘ā‘o (SAIC 2011), hō‘ike ‘ia, ma muli o ka nānā ‘ia ‘ana o nā polokalamu ho‘opō‘aiāpuni ma ‘Amelika, he mea ma‘amau 400 paona o ka hale ‘ohana i huina ‘ohi ma hope o ho‘okahi makahiki o ka hana ‘ana, a he mea ma‘amau 520 paona o ka hale ‘ohana o ka makahiki ke piha pono ka polokalamu. I mea e loa‘a ai ka pahu hopu ho‘ohuli ‘ōpala he 70% i ka hiki ‘ana mai o ka 2023, a e like nō me ka lula alaka‘i ho‘opau ‘ōpala o ke Kalana, mana‘o ke Kalana he pono e ‘oi aku ka nui o ka ‘ohi ‘ia ‘ana o nā mea ho‘opō‘aiāpuni o nā hale. Hui pū ‘ia me nā lula alaka‘i ikaika e like me ka PAYT, paipai nā limahana o ke Kalana i ka mana‘o he pono ka laulā he 450-650 paona/hale ‘ohana/makahiki no nā mea ho‘opō‘aiāpuni i ‘ohi ‘ia. Ho‘olālā ke Kalana e ho‘okumu i ka polokalamu ‘ohi i nā mea ho‘opō‘aiāpuni ma ka‘e alanui i ka holo ‘ana o nā makahiki ‘elima e hiki mai ana a mana‘o ke Kalana e ho‘opa‘a ‘ia ka hana mīkini wale nō ma ka mokupuni i ka hiki ‘ana mai o ka 2019. Ma ka ho‘ohana ‘ana i nā kuhi ma‘amau a me nā kuhi o ke Kalana (SAIC 2011) a me ka huina hale ‘ohana i wānana ‘ia (SMS 2014) i ka holo ‘ana o ka wā ho‘olālā, he pi‘i ka huina kana o nā mea ho‘opō‘aiāpuni i ‘ohi ‘ia ma ka‘e alanui e like me ia i hō‘ike ‘ia ma ka Papa 3-1.

Papa 3-1. Ka Pi‘i Huina Kana Wānana ‘ia, Mea Ho‘opō‘aiāpuni i ‘Ohi, Ka‘e Alanui, 2020-2035

Makahiki	Huina Hale ‘Ohana i Wānana ‘ia	Nā Kuhi ‘Ohi Ma‘amau		Nā Kuhi o ke Kalana	
		TPY @ 400 lbs/h‘o/mh	TPY @ 520 lbs/h‘o/mh	TPY @ 450 lbs/h‘o/mh	TPY @ 650 lbs/h‘o/mh
2020	25,902	5,180	6,735	5,828	8,418
2030	28,788	5,758	7,485	6,477	9,356
2035	30,349	6,069	7,891	6,829	9,863

h‘o hale ‘ohana

Ma muli o ka ‘ike ma lalo nei, hō‘ulu‘ulu ‘ia ma loko o ka Papa 3-2 ka huina i hiki o nā mea ho‘opō‘aiāpuni o nā hale ‘ohana i hiki ke ‘ohi ‘ia a pono ka ho‘oponopono ‘ana i ka pau ‘ana o ka wā 15 makahiki (‘o ia ho‘i, 2035).

Papa 3-2. Ka Hō‘ulu‘ulu ‘ana no nā Mea Ho‘opō‘aiāpuni o nā Hale ‘Ohana i Hiki, Huina Kana o nā Mea, 2035

Kumu Mea Ho‘opō‘aiāpuni	Nā Mea Ho‘opō‘aiāpuni i Hiki (TPY i ka 2035)
Kuhi Ha‘aha‘a	Kuhi Ki‘eki‘e
Polokalamu Ho‘opō‘aiāpuni o Ka‘e Alanui (kuhi Kalana)	6,829 9,863
Nā Mea Ho‘opō‘aiāpuni Waiho ‘ia i Kēia Wā (hiki ke ‘ohi ‘ia ma ka‘e alanui i kēia mua aku)	1,568 2,858
Nā Mea HI-5 a	819 1,911
Huina Mea Ho‘opō‘aiāpuni Nui	9,216 14,632

a: He kuhi no ka hiki ke ho‘oponopono ‘ia 30% o nā mea HI-5 i ‘ohi ‘ia i kēia manawa ma ka MRF, a pi‘i hou ā ke 70% ma ka pau ‘ana o ka wā ho‘olālā.

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Ua hāpai ka hō‘ike no ka banana ho‘ā‘o (SAIC 2011) i kēia mau mana‘o paipai:

- Kūkulu i kekahi Kahua ‘Ohi Ukana (Material Recovery Facility: MRF) a i ‘ole kāko‘o i ke kūkulu ‘ia ‘ana o kekahi kahua o ia ‘ano ma waena o nā hui hana i hiki ke ho‘oponopono i nā mea ho‘opō‘aiāpuni i ‘ō‘ā ‘ia ho‘okahi manawa.
- Ho‘okumu i kekahi papa hana ‘ohi mea ho‘opō‘aiāpuni ho‘okahi manawa ma ka‘ae alanui ā puni ka mokupuni.
- Ma hope o ka ho‘opa‘a ‘ia ‘ana o ka polokalamu ‘ohi mea ho‘opō‘aiāpuni ā puni ka mokupuni, ho‘oponopono i ka palapala ‘aelike no nā pahu mea ho‘opō‘aiāpuni o Kaua‘i i kēlā manawa. Ho‘ēmi i ka pinepine o ka hana lawelawe, a ‘ohi i nā ‘ano mea ho‘opō‘aiāpuni like ‘ole, a ho‘ēmi i ka nui o nā pahu waiho mea ho‘opō‘aiāpuni. Ho‘omau i ka ‘ae i nā mea e ‘ohi ai ma ka polokalamu ho‘ā‘o a ho‘onui i nā mea e ‘ohi ai, me nā kini mea hao kila kekahi. Nānā i ka mea e hiki ai ke ho‘ohui ‘ia aku nā ‘ea #3 ā hiki i ka #7.
- Ho‘okumu i kekahi polokalamu Uku ma ke Kiloī ‘ana (Pay as You Throw: PAYT) (kāki ‘ia nā kānaka noho no ka ‘ohi ‘ia ‘ana o ka ‘ōpala ma muli o ka nui e kiloi ‘ia ai, ‘a‘ole ho‘i he kāki pa‘a mau ‘a‘ohe ona pili i ka huina e kiloi ‘ia ai) hui pū me kekahi polokalamu ‘ohi ma ka‘e alanui e paipai ai i nā pōmaika‘i kālā no ke komo ‘ana o ka lehulehu. He pōmaika‘i ka polokalamu PAYT ma ke ‘ano e ho‘onui ai nā hale ‘ohana e ho‘ohuli i ka ‘ōpala i kahi ‘ē a paipai i ke komo ‘ana i loko o ka polokalamu ‘ohi ‘ōpala ma ka‘e alanui a me nā banana ‘ē a‘e o ke Kalana no ka ho‘opō‘aiāpuni a me ka ho‘ohuli ‘ana i kahi ‘ē.

Ka Ho‘opō‘aiāpuni Hui Hana

Ma waho a‘e o nā huina mea ho‘opō‘aiāpuni o nā hale i hō‘ike ‘ia ma luna nei, e hiki ana i ka MRF o ke Kalana i hāpai ‘ia (hō‘ike ‘ia ma lalo nei) ke ho‘oponopono i nā mea ho‘opō‘aiāpuni o nā hui hana kekahi. Hō‘ike ‘ia nā huina mea ho‘opō‘aiāpuni i hiki mai nā hui hana ma ka Papa 3-3.

Papa 3-3. Ka Hana ‘ana i nā Mea Ho‘opō‘aiāpuni a me nā Mea i Hana ‘ia ai i Waewae ‘ia ma ke ‘Ano ma ke Kalana, 2010 a Wānana ‘ia no ka 2020-2035

Kōā Wā	Ke ‘Ano o ka Mea (TPY)		Huina Mea‘ai & Mea Inu Kini Mea Hao Ferrous & Ferrous ‘Ole	Huina Kini Mea‘ai me ka Mea Inu Aniani	Nā Mea Ho‘opō‘aiāpuni Hui Hana i Loa‘a (TPY)
	Huina Ma‘awe Ho‘opō‘aiāpuni ‘ia ^a	‘Ea #1 & #2			
Composition (%)	27.0%	2.1%	1.8%	3.6%	34.5%

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2010	15,179	1,181	1,012	2,024	19,395
2020	17,099	1,330	1,140	2,280	21,848
2030	18,950	1,474	1,263	2,527	24,214
2035	19,951	1,552	1,330	2,660	25,493

^a He hō‘ulu‘ulu ho‘ā‘o ‘ana: 56,218 kana ‘ōpala hui hana (mai ka Papa 203 mai) x (27% ma‘awe) = 15,179 TPY o ka huina ma‘awe ho‘opō‘aiāpuni mai nā kumu hui hana

Ma muli o ka huina ‘ōpala hui hana i hana ‘ia i ka 2010 (Papa 2-3), ua kuhi ‘ia ke ho‘ohuli ‘ia nei ma kahi o 9,000 kana mea ho‘opō‘aiāpuni o nā hui hana i kahi ‘ē. Hō‘ike nā helu i hō‘ike ‘ia ma ka Papa 3-3 i kekahi palena ki‘eki‘e o nā mea e ho‘ohuli ‘ia nei: ‘a‘ole e hiki ana ke ho‘ohuli 100% o ia mau mea mai ka pu‘u ‘ōpala aku. ‘O kekahi mea hou aku, hiki ke ho‘omalu ‘ia kekahi o nā mea i ho‘ohuli ‘ia e nā hui hana. Ma ka ho‘okumu ‘ana i nā lula alaka‘i a me nā pōmaika‘i no nā mea a nā hui hana e kiloi ai, he pahu hopu nō kā ke Kalana e loa‘a ai 60% o ka nui e ho‘ohuli ‘ia ai. Mana‘o nā limahana o ke Kalana e ho‘omalu ke Kalana 40% ā hiki i ke 60% o nā mea ho‘opō‘aiāpuni e ho‘ohuli ai i ka hiki ‘ana mai o ka pau ‘ana o ka wā ho‘olālā (Papa 3-4).

Papa 3-4. Ka Huina Kana Mea Ho‘opō‘aiāpuni Hui Hana e ‘Ohi ai ke Kalana i Loko o ka Wā Ho‘olālā

Makahiki	Nā Mea Ho‘opō‘aiāpuni Hui Hana i Loa‘a (TPY)	% Lalau i Wānana ‘ia	Huina Ho‘ohuli ‘ia (TPY)	% i Kuhi ‘ia i Ho‘omalu ‘ia e ke Kalana	Huina i Kuhi ‘ia i Ho‘omalu ‘ia e ke Kalana (TPY)
2010	19,395 + 9,000	—	9,000	0	0
2020	21,848 + 9,000	30%	9,254	15	1,388
2030	24,214 + 9,000	45%	14,946	40	5,979
2035	25,493 + 9,000	60%	20,696	60	12,417

Mea Ho‘omaopopo: Nā Mea Ho‘opō‘aiāpuni Hui Hana i Loa‘a mai ka Papa 3-3.

He ikaika kēia mau kuhi no ka ‘ohi ‘ia ‘ana o nā mea ho‘opō‘aiāpuni no nā hui hana, ‘oiai ‘a‘ohe mana o ke Kalana ma luna o ka hana kiloi ‘ōpala a nā hui hana; no laila, ‘a‘ole hiki ke hō‘oia‘i‘o e ho‘ohana nā hui halihali ‘ōpala i ka MRF o ke Kalana. Akā na‘e, ‘oiai he 70% ka pahu hopu o ke Kalana no ka ho‘ohuli ‘ana i ka ‘ōpala, he pono e ikaika kēia hana. Hiki i nā hui hana ke ho‘okumu i nā hana ‘ē a‘e e ho‘omalu ‘ia ai ka ‘ōpala (penei: hiki ke ho‘olaha i nā mea kū‘ai o ke kūlana ki‘eki‘e ma ka mākeke a ho‘ohuli i nā mea o ke kūlana ha‘aha‘a wale nō ma ka pu‘u ‘ōpala o ke Kalana). ‘Oiai e ‘imi ke Kalana i nā lula alaka‘i a me nā polokalamu e ho‘olalelale ai i nā hui hana e ho‘ohana piha i ka MRF o ke Kalana, hiki nō i ke Kalana ke hō‘ike hewa i kona ‘ao‘ao e pilikia auane‘i i ke kūlanalana o ke kūlana ho‘okele waiwai ke pi‘i ka nui o ka MRF ā keu loa ma muli o nā wānana i pākela kona ‘ao‘ao ho‘olana mana‘o. Ua ‘ike ‘ia he loa‘a nā kūlana pilikia o nā hui hana a me ka mea e hiki ai iā lākou ke ho‘olako i nā hana lawelaw e ho‘omakauli‘i mau ai i ke kālā no ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala i kahi ‘ē. ‘O ka hopena, he pono nō paha ke Kalana e mālama i kēia mau hana lawelaw e mea e loa‘a ai nā pahu hopu no ka ho‘ohuli ‘ōpala ‘ana.

Na ke Kalana e ho‘okumu i kekahi polokalamu ho‘ēmi/hō‘opō‘aiāpuni ‘ōpala i piha pono. Aia ā ponon ka holo ‘ana o ka polokalamu hui hana, na ke Kalana e hana me nā hui hana no ka ho‘oponopono hou ‘ana i nā kānāwai penei:

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- Koi i nā hui o nā ‘ano nui like ‘ole a i ‘ole nā hui e hana nei i kekahi huina li‘ili‘i o nā mea ho‘opō‘aiāpuni e ho‘okumu i nā polokalamu ho‘opō‘aiāpuni no ke aniani, ka pepa pahu, ka pepa ke‘ena a me ka ‘ōpala mea kanu;
- Pāpā i ke kiloi ‘ia ‘ana o ka pepa pahu i hana ‘ia e nā hui hana, ka ‘ōpala mea kanu, a me nā kahua kiloi ‘ōpala (a ho‘ākāka ‘ia ka palena li‘ili‘i o ka pu‘u);
- Ho‘ākāka i ka nui o ka pepa pahu i loko o ka pu‘u ‘ōpala o ka hui hana i pāpā ‘ia ai ke kiloi ‘ana (‘o ia ho‘i, nā pu‘u me ka palena li‘ili‘i he 1 ‘iā kupika pepa pahu ‘alu‘alu a kahiko);
- Ho‘ololi i nā ho‘opa‘i ho‘ouku ma ke kānāwai;
- Ho‘oponopono i nā kumu kāki kiloi ma ka pu‘u ‘ōpala a me nā kahua kiloi ‘ōpala e paipai ai i ka ho‘opō‘aiāpuni ‘ana; a
- Inā loa‘a ke koho e ho‘oponopono ‘ia nā mea e ho‘opō‘aiāpuni ai, koi ‘ia nā mea halihali ‘ōpala a pau e ki‘i i kekahi laikini mai ke Kalana mai me ke koi pū ‘ana inā makemake ‘ia ka laikini, pono e ho‘okumu ‘ia kekahi hanana ho‘opō‘aiāpuni no ka po‘e kū‘ai.

Ke Kānāwai Ho‘opō‘aiāpuni Hui Hana i Hāpai ‘ia no ke Kalana ‘o Kaua‘i

Pi‘i ka mea nui o ka pahu hopu ‘o ka ho‘onui ‘ana i ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala ā hiki i ka palena nui i hiki ma o ka nui ‘ōpala i koe i emi mai ma ka pu‘u ‘ōpala, hui pū ‘ia me ka hana lō‘ihī a pipī‘i ‘o ke kūkulu ‘ana i ke ana o ka pu‘u ‘ōpala o ka wā e hiki mai ana. Ma ka ho‘oikaika ‘ana e ho‘okō i kēia pahu hopu, ke hāpai aku nei ka Māhele ‘Ōpala Pa‘a o ke Kalana ‘o Kaua‘i i kekahi kānāwai e koi ana i nā hui e ho‘okumu i kekahi hanana ho‘opō‘aiāpuni e ‘ohi a ho‘ohuli i nā mea ho‘opō‘aiāpuni i ho‘ākāka ‘ia mai ka pu‘u ‘ōpala aku.

He kuhi ke Kalana he 55% ka palena nui o ka ‘ōpala i hana ‘ia e nā hui hana. He mea ho‘opō‘aiāpuni nā mea he nui o kēia ‘ōpala, a ho‘okoe ‘ia kahi ka‘awale i waiwai loa ma ka pu‘u ‘ōpala a ho‘omakauli‘i nō ho‘i i nā kumu waiwai loa‘a wale. Na kēia kānāwai e kōkua i nā pāpā ‘ana e pili ana i ka pepa pahu, nā mea hao, a me ka mea kanu i hana ‘ia e nā hui. Ke kuhi ‘ia nei na kēia kānāwai e ho‘ohuli ma kahi o 8,000 kana ‘ōpala mai ka pu‘u ‘ōpala aku i kēlē me kēia makahiki.

‘O ke kumu o ke Kānāwai Ho‘opō‘aiāpuni Hui Hana, ‘o ia ka ho‘okumu a me ka ho‘okō ‘ana i kekahi polokalamu no ke kōkua ‘ana i ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala i hana ‘ia e nā hui (nā hui hana, nā ‘oihana aupuni, nā hale kikowaena, a me nā hale he mau hale ko loko) mai ka pu‘u ‘ōpala aku. Ma loko o kēia kānāwai, koi ‘ia nā hui e waewae a ho‘opō‘aiāpuni i nā mea ho‘opō‘aiāpuni i hiki ke ho‘oponopono ‘ia ma kahi kūloko a me nā mākeke i ho‘opa‘a ‘ia. ‘O nā mea ho‘opō‘aiāpuni i ho‘ākāka ‘ia i kēia manawa, ‘o ia ka pepa pahu, nā mea hao, ka ‘ōpala mea kanu, a me nā pepa i ‘ō‘ā ‘ia no nā hui a pau, me kekahi koi hou aku no nā hale ‘aina a me

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nā hale kū‘ai mea inu e ho‘opō‘aiāpuni i kā lākou ‘ōmole aniani a me nā kini ‘aluminuma a me ka ‘ea HI-5.

Ka Ho‘opō‘aiāpuni ‘ana o nā Malihini

He ho‘okahi miliona ka heluna nui o nā malihini kipa o ke Kalana o ka makahiki. No laila, he nui ka hopena e ‘ike ‘ia ma ka polokalamu ho‘opō‘aiāpuni o ke Kalana inā pi‘i ka ho‘oikaika ‘ana ma ka ‘ohi ‘ana i nā mea ho‘opō‘aiāpuni i hana ‘ia e nā malihini kipa.

He nui nō ho‘i ka huina condominium a me nā hale e ho‘olimalima ai e noho ai nā malihini kipa. E ho‘oikaika ‘ia ka nānā ‘ia ‘ana o ka loa‘a o nā hana lawelawe ‘ohi mea ho‘opō‘aiāpuni ma kēia mau wahi noho, a i ‘ole, ‘o ka mea emi loa i loa‘a, hō‘ike ‘ia nā mea kipa no ka ho‘opō‘aiāpuni ‘ana. I nā manawa he nui, ‘ae ‘ia nā limahana o nā hōkele/condominium e ho‘olimalima ai e lawe i nā kini/‘ōmole i kiloi ‘ia i loko o nā lumi pākahī o nā mea kipa a ‘ohi i ke kālā no ia mau mea. He kōkua nō kēia i ka ho‘opō‘aiāpuni ‘ana; akā na‘e, ‘a‘ole nō ia he mea i ‘ike nui ‘ia e like me ka hā‘awi ‘ana i nā pahu waihana mea ho‘opō‘aiāpuni ma nā wahi ka‘ana like ‘ia ma nā hōkele/condominium e ho‘ohana ai nā malihini kipa.

Hō‘ike ke Kalana no ka nui o ka lilo i pili i ka ho‘okumu ‘ana i kekahī polokalamu ho‘opō‘aiāpili no nā malihini kipa a he pono e ho‘oili ‘ia kēia mau lilo ma luna o nā malihini kipa. Ma muli o ka pi‘i ‘ana o ke kumu kū‘ai ma kēlā me kēia wahi ho‘olimalima me nā polokalamu ho‘opō‘aiāpuni, he pono e loa‘a nā pōmaika‘i kālā a i ‘ole nā koi e kūpono ai ka ho‘opō‘aiāpuni ‘ana ma kēia mau wahi. I mea e ho‘omaopopo ai i nā hanana kūpono loa no ka ho‘opō‘aiāpili ‘ana i hiki ke ho‘omau loa ‘ia ma waena o nā malihini kipa, na ke Kalana e mālama i nā ‘aha hālāwai ma waena o nā pū‘ulu po‘e i wae ‘ia ai me ka po‘e limahana o ka ‘oihana malihini kipa a na kēia mau limahana e kōkua i ke kūkulu a me ka ho‘okō ‘ia ‘ana o ka polokalamu ho‘opō‘aiāpili no nā malihini kipa.

Ka Ho‘opō‘aiāpili ‘ana ma nā Hanana Kūikawā

He pilikia nō ka ho‘opō‘aiāpuni ‘ana ma nā hanana kūikawā i ka hapa nui o ka manawa, no ka mea, ma kēia mau hanana, he nui loa nō ka po‘e hiki mai, a nui nā hana, a hiki ke laha laulā ma nā wahi like ‘ole. ‘O kekahī mea nō, kaupalena ‘ia ka mea e hiki ai ke ho‘ona‘auao hou aku. Ma ke ‘ano laulā, waewae ‘ia nā hanana ma ‘ekolu mau hanana nui: (1) nā hanana alanui a wahi nō paha i nui ākea; (2) nā hana i kaupalena ‘ia ai ka nui (‘o ia ho‘i, mālama ‘ia ma kekahī kahua, akā, ‘oko‘a no ia hanana aku a ia hanana aku); a (3) nā hanana ho‘okūkū pā‘ani (‘o ka mea ma‘amau, aia ma ka stadium a i ‘ole he hale pā‘ani). Na ke Kalana e ho‘omau i ka nānā ‘ana i ka ho‘opō‘aiāpuni ‘ana ma nā hanana kūikawā ma ke a‘oa‘o ‘ana e pili ana i ka hana mīkini a me ka mālama ‘ana i kekahī mo‘olelo i ka holo ‘ana o ka makahiki e kōkua ai i nā luna ho‘omalu hanana ma nā hanana ho‘opō‘aiāpuni.

Ke Kahua ‘Ohi Ukana (Materials Recovery Facility: MRF)

He wahi ho‘oponopono ka MRF kahi e ‘ohi ‘ia ai nā mea ho‘opō‘aiāpuni, a nāna e waewae i nā ukana ma muli o kona ‘ano, a wehe ‘ia nā mea haumia, ‘ōpā ‘ia nā mea i ‘ohi ‘ia, a laila, wahī

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‘ia ma kekahi ‘ano e kūpono ai ka halihali ‘ana a me ke kū‘ai ‘ana i nā mākeke. I kēia manawa, ke nānā a ho‘ākāka mai nei ke Kalana i nā wahi e hiki ai ke kūkulu ‘ia ka MRF. Loa‘a nā mea ho‘opō‘aiāpuni i ke Kalana ma ke ‘ano he kumu kahi e ‘ohi ‘ia ai ka ukana no ka MRF mai nā kumu hale ‘ohana a me ka hui hana.

Loa‘a wahi ho‘oponopono mea ho‘opō‘aiāpuni ma ke Kalana, a kaupalena ‘ia ka nui e hiki ai ke ho‘oponopono i nā mea i ho‘ohuihui pū ‘ia ai. ‘O kekahi mea hou aku, aia ā ho‘okumu ke Kalana i kona polokalamu mea ho‘opō‘aiāpuni, wānana ‘ia he pi‘i pū nō ka nui o nā mea i ‘ohi ‘ia no ka ho‘oponopono ‘ana. ‘O ka hopena, he pono e ho‘oponopono ‘ia ka mea e hiki ai ke ho‘opō‘aiāpuni ‘ia nā mea ho‘opō‘aiāpuni i ho‘ohuihui pū ‘ia. E like me ia i ho‘ākāka ‘ia ma loko o ka ISWMP, ‘o ke kūkulu ‘ia ‘ana o kekahi kahua ‘ohi ukana (MRF) kekahi o nā māhele o nā pono kūlanakauhale e ho‘onui ai i ka ho‘ohuli ‘ana i ka ‘ōpala i kahi ‘ē.

Ma o ke kūkulu a me ka ho‘okō ‘ana i kekahi MRF, kuhi ke Kalana kekahi huina TPY ha‘aha‘a mai he 7,682, ma kahi o ka 5% o ka huina ‘ōpala o ke Kalana, me ke kuhi pū no ka huina TPY ki‘eki‘e he 26,683, ‘o ia kahi o ka 17% o ka huina ‘ōpala o ke Kalana. Ua hāpai ke Kalana he papa hana no ka MRF e hiki ai ke pi‘i ke kūlana hana pono o ka hana a i ‘ole ho‘opuka i nā mea kū‘ai ma‘ema‘e hou aku. Ma ka ho‘opau a me ke koho ‘ana i kekahi kahua no ka MRF, e kūkulu ‘ia kekahi ki‘i moākāka hou aku, e ho‘omaopopo ‘ia nā lilo i pili.

Ka Pāka ‘Ohi Kumu Waiwai (Resource Recovery Park: RRP)

I mea e loa‘a ai nā pahu hopu no ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala i kahi ‘ē, ua ho‘ākāka ke Kalana i kekahi Pāka ‘Ohi Kumu Waiwai (Resource Recovery Park: RRP) ma ke ‘ano he māhele nui ma ka papa hana o ke Kalana no ka ‘ōpala pa‘a. He kikowaena ka RRP kahi e hana ai i nā hana like ‘ole, e like me nā polokalamu a me nā kahua kahi e ho‘onui ‘ia ai ka hana e ho‘ohuli ‘ia ai ka ‘ōpala i kahi ‘ē mai ka pu‘u ‘ōpala aku ma o ka ho‘ohana hou ‘ana, ka ho‘opō‘aiāpuni ‘ana, a ka ‘ohi ‘ana. Ma ke kūkulu ‘ana i kekahi kahua nui kahi e hiki ai i nā kānaka noho a me nā hui hana ke lawe i kā lākou mau mea e ho‘opō‘aiāpuni a kiloi ai, hiki ke ku‘ikahi ka hana, a paipai i ka ho‘ohana hou ‘ana, ka ho‘opō‘aiāpuni ‘ana, a me ka ho‘ēmi ‘ana i ke kiloi ‘ōpala ‘ana, me ke kōkua pū aku i ke Kalana i ka ho‘omakauli‘i ‘ana i ke kālā ma o nā kumu waiwai i ka‘ana like ‘ia a me ka ho‘okele waiwai ‘oi o ka ho‘opukapuka ‘ana. ‘O nā pōmaika‘i e ho‘omau ai i pili i ka hō‘ike ‘ana i kekahi pu‘u ‘ōpala hou ma kahi kokoke i ke kumu ‘ōpala (kahī o ka mokupuni e hana ana i ka huina nui loa o ka ‘ōpala), hiki ke pi‘i hou aku kona mea nui inā kūkulu ke Kalana i kekahi RRP ma kahi o ka pu‘u ‘ōpala hou, ma kahi kokoke i hana ‘ia ai ka ‘ōpala. No laila, aia i loko o kēia kahua i hāpai ‘ia ke kuhikuhi ‘ia ‘ana o kahi o ka RRP ma kahi kokoke i ka pu‘u ‘ōpala.

Hiki ke ho‘ohui pū ‘ia i loko o ka RRP nā ‘ano māhele like ‘ole he nui o nā hana mīkini no ka ho‘ohuli ‘ana i nā mea i ‘ohi ‘ia ma kahi ‘ē mai nā hui halihali a i ‘ole nā kumu kahi e hana ‘ia ai ka ‘ōpala. He hana ka ho‘oholo ‘ia ‘ana o nā māhele a me nā hana mīkini like ‘ole ma ke ‘ano he māhele o ka RRP o nā ‘ao‘ao he nui, e like me ke ‘ano o ka ho‘ohana ‘ia ‘ana a i ‘ole ka loa‘a o nā mea i ‘ohi ‘ia a me nā mea i pili i ka lilo i loko o ka mākeke. Ua ho‘ohiki nō ho‘i ke Kalana ma ke ‘ano he māhele ia o kāna ‘ōlelo ho‘oholo e ho‘opau ai i ka ‘ōpala (Zero Waste Resolution) e ho‘ohuli aku ma kahi o ka 70% ka nui loa o ka ‘ōpala i hana ‘ia mai ka pu‘u ‘ōpala aku. Hiki

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ke kaha ‘ia ke ki‘i o ka RRP e kūpono ai i nā mea a me nā hana mīkini e hiki ai ke ho‘ohuli ‘ia a hiki ke ho‘okō ‘ia ma nā ka‘ina māhele like ‘ole ke kūpono nā mea ā puni e pono ai.

Paipai ‘ia nā mea ma lalo nei ma ke ‘ano he mea e kōkua ai i ka ho‘okumu ‘ana i ka RRP, aia nō i ke ‘ano o nā kaupalena ‘ana a me nā mana‘o i pili ‘ole i ka hana mīkini:

- He kahua kahi e kiloi ai i ka ukana ma kahi kikowaena me nā pahu waihona no nā mea ho‘opō‘aiāpuni, ka ‘ōpala mea kanu, ka ‘ōpala mea hao, ka ‘ōpala C&D mai nā hale ‘ohana mai a me nā kumu ‘ōpala o nā hui hana, nā taea i pau ka ho‘ohana ‘ia, a me nā ‘ōpala hale ‘ohana.
- He kahua kahi e ho‘oponopono ‘ia ai nā mea hao, e like me nā ka‘a, nā mea ke‘oke‘o, nā kini propane a me nā ‘āpana ‘ōpala, ka ‘ōpala C&D, a me nā taea i pau ka ho‘ohana ‘ia.
- Kahi i ho‘ākāka ‘ia ai no ka ‘ohi ‘ana, ka ‘ōpā ‘ana, ka wahī ‘ana, a me ka waiho ‘ana i nā ‘ōpala ho‘opilikia o ka hale, ka ‘aila uliuli a me nā kālana, ka ‘aila kuke i pau ka ho‘ohana ‘ia, ka ‘ōpala uila, kahi e ‘ohi ‘ia ai nā mea HI-5, he kikowaena hokuke i pau ka ho‘ohana ‘ia, ka ‘ōpala uila, kahi e ‘ohi ‘ia ai nā mea HI-5, he kikowaena mea ho‘ohana hou, a me kekahī kikowaena no nā mea i hana nui ka ho‘opō‘aiāpuni ‘ana.
- Ho‘okahi MRF, i kūkulu ‘ia no ka ho‘oponopono ‘ana i nā mea i ‘ohi ‘ia ma ka‘e alanui mai nā hale ‘ohana mai, nā mea HI-5, a me nā mea i loa‘a mai nā kumu hui hana mai, e like me kekahī kikowaena ho‘ona‘auao.
- He kahua ho‘opulupulu e loli ana i kahua paila ‘ōpala kahi e waiho ‘ia ai ma ke ea no ka ‘ōpala mea kanu, nā mea pa‘a mea ola, a me ka ‘ōpala mea‘ai.
- He kahua pu‘u ‘ōpala kahi e ho‘olilo ‘ia ai ke ea i ‘aila (landfill gas to energy: LFGtE).

Ke Kahua Ho‘opō‘aiāpuni Mea Hao

I kēia manawa, na ke Kalana e hai i ka PMRC ma ka palapala ‘aelike nāna e ho‘opō‘aiāpuni i nā mea ho‘opō‘aiāpuni, a ‘ae ‘ia nā ‘āpana mea hao no ka ho‘oponopono ‘ana, e like me nā ka‘a, nā mea ke‘oke‘o, nā kini propane a me nā ‘ano ‘ōpala mea hao like ‘ole. ‘Ae ‘ia nā ‘ōpala mea hao, a ho‘oponopono ‘ia, a ho‘omākaukau ‘ia no ka mākeke. Ho‘oholo ‘ia ka PMRC e kekahī hui i hai ‘ia ai ma ka palapala ‘aelike aia ma kekahī ‘āpana ‘āina i ‘ona ‘ia ma lalo o ka palapala ‘aelike. ‘Ae ke Kalana i nā mea ke‘oke‘o ma nā kahua kiloi ‘ōpala ‘ehā a me ka pu‘u ‘ōpala ma Kekaha. Paipai ‘ia kekahī kahua ho‘opō‘aiāpuni mea hao i māhele o ka RRP a kuhi ‘ia e hai ‘ia nā hana lawelawe ma lalo o ka RRP ma o kekahī palapala ‘aelike.

Aia ā ho‘opa‘a ‘ia ka RRP, mana‘o ke Kalana e ho‘oka‘awale i wahi no ke kūkulu ‘ia ‘ana o kekahī kahua ho‘opō‘aiāpuni mea hao me nā hana i ‘ano like nō me nā hana i mālama ‘ia ma ka PMRC. He mau koho nō ko ke Kalana no ka hai ‘ana no ke kūkulu ‘ana a me ka ho‘oholo ‘ana i ke kahua i hāpai ‘ia. Ho‘olako ‘ia paha nā lilo no kēia kahua e ke Kalana.

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Hō‘ike nā ‘ike o ke Kalana ua ho‘oponopono ‘ia ma kahi o 4,669 kana ‘āpana hao o nā ‘ano like ‘ole i ka makahiki waihona kālā 2011. He kū ka ‘ohi a me ka ho‘oponopono ‘ia ‘ana o kēia mau mea i kahi o 4.4% (he kuhi ‘ano hāiki nō) o ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala i kahi ‘ē. Kuhi ‘ia e ho‘omau kēia huina ho‘ohuli ‘ana ma kahi ‘ano likelike i ka wā e hiki mai ana, ‘oiai he polokalamu kēia i pa‘a pono a e ho‘one‘e ‘ia i ka RRP.

3.3.2 Ka Ho‘ololi Mea Ola

Ho‘ākāka a loiloi kēia māhele o ka Papa Hana i nā hana e ho‘onui ‘ia ai ka nui o ka ‘ōpala mea kanu i ho‘ohuli ‘ia mai ka pu‘u ‘ōpala aku. Aia i loko o ka ISWMP nā mana‘o paipai ma lalo nei i pili i ka ho‘ohuli ‘ana i hō‘oi ‘ia no nā ‘ōpala mea ola like ‘ole:

- Ho‘okumu i kekahi hana kū pule no ka ‘ohi ‘ia ‘ana o ka ‘ōpala mea kanu ma ka‘e alanui.
- Ho‘okumu i kekahi hana ‘ohi ‘ōpala mea ola no nā hui hana ‘ōpala mea ola.
- Ho‘onui hou i ka pāpā ‘ia ‘ana o ke kiloi ‘ia ‘ana o ka ‘ōpala i kahi kiloi ‘ōpala o ke kaona no nā ‘ōpala mea kanu no waho o nā hale ‘ohana e ho‘ohui ‘ia ai nā hale ‘ohana, a ho‘onui i ka pāpā ‘ia ‘ana o ke kiloi ‘ōpala ‘ana ma nā kahua kiloi ‘ōpala.
- Ho‘okumu i kekahi kahua kikowaena ho‘oponopono ‘ōpala mea kanu a mea ola e hana ai i ka mea ho‘opulupulu.

Ho‘ākāka ‘ia ma lalo nei kēia mau mana‘o a me nā hana like ‘ole pū a ke Kalana e no‘ono‘o mai nei e ho‘okumu no ka hō‘oi ‘ana i ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala mea kanu i kahi ‘ē.

Ka ‘Ohi ‘ana i ka ‘Ōpala Mea Kanu ma Ka‘e Alanui

Ke mana‘o mai nei ke Kalana e ho‘okumu i kekahi hanana ‘ohi ‘ōpala mea kanu ma ka‘e alanui no nā hale ‘ohana. Wānana ‘ia e ho‘okumu ‘ia kēia polokalamu ma kahi o ka 2020. He mea nui ka ho‘omau ‘ana i ka ho‘ohuli ‘ana i ka ‘ōpala mea kanu i kahi ‘ē, ‘oiai ‘o ia kekahi o ka mea ho‘omakauli‘i kālā nui loa e ho‘ohuli ai, ‘oiai he mea hiki nō ke kū‘ai ‘ia ma ka mokupuni a aia i loko o kēia mana‘o kekahi māhele nui o ka ‘ōpala o nā hale ‘ohana. Ma muli o ka emi ‘ana o ka makemake ‘ia o nā kahua kiloi ‘ōpala ma muli o ka mālama ‘ia ‘ana o ka hana lawelawe he ‘ohi ‘ōpala ma ka‘e alanui o nā hale ‘ohana, e nānā nui ke Kalana i ka ho‘ohana ‘ia ‘ana o kēia mau kahua.

Ka Polokalamu ‘Ohi ‘Ōpala Mea Ola Mai nā Hui Hana ‘Ōpala

Inā i loa‘a kekahi kahua no ka hana ‘ana i ka ‘ōpala mea ola i mea ho‘opulupulu, hiki paha ke ‘ohi ‘ia ka ‘ōpala mea‘ai a me ka pepa i hiki ‘ole ke ho‘opō‘aiāpuni ‘ia ma ka‘e alanui. I kinohi, e kaupalena ke Kalana i kēia hana lawelawe no nā hui hana wale nō, akā, e nānā a loiloi ‘ia ka mana‘o e ho‘onui hou a‘e ia hana lawelawe no nā mea kū‘ai o nā hale ‘ohana kekahī. Inā ho‘ohui ‘ia kēia mau ‘ōpala mea ola i ka polokalamu, na ke Kalana e ho‘olako i nā ka‘a huila i nā mea e hana ana i ka ‘ōpala. He mea pa‘a nā ka‘a a he po‘i nō kekahī, a he kōkua kēia i ka ho‘ēmi ‘ana i ke ea pilopilo a me ka pilikia i nā holoholona/mū i hiki ke ‘ike ‘ia i ka waiho ‘ia ‘ana o ka ‘ōpala

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ma waena o nā ‘ohi ‘ana a i ka waiho ‘ia ‘ana o ka ‘ōpala ma ka‘e alanui no ka ‘ohi ‘ana. Hiki ke ho‘ohana ‘ia nā ka‘a e waiho ai i ka ‘ōpala mea kanu, ka ‘ōpala mea‘ai, a me ka pepa i hiki ‘ole ke ho‘opō‘aiāpuni ‘ia.

Ka Pāpā ‘ia ‘ana o ka ‘Ōpala mea Kanu no nā Kānaka Noho a ma nā Kahua Kiloī ‘Ōpala

Ua ho‘āmana ‘ia ke Kalana e pāpā i ke kiloi ‘ia ‘ana o ka ‘ōpala mea kanu e pale ai i ke kiloi ‘ia ‘ana o kēia ‘ano ‘ōpala mai ka pu‘u ‘ōpala aku. Ho‘okō ‘ia nā pāpā ‘ana no ke kiloi ‘ōpala ‘ana ma ka pu‘u ‘ōpala ma kahi e kiloi ai ke kalaka halihali ‘ōpala – ma nā kahua kiloi ‘ōpala a me ka pu‘u ‘ōpala. Hana pono nā pāpā kiloi ‘ōpala ‘ana ma kahi i ‘ike akāka ‘ia ka pono o kēia hana, kahi ho‘i i ‘ike ‘ia ai ho‘i nā koho ‘ē a‘e ma kahi o ke kiloi ‘ōpala ‘ana.

I kēia manawa, pāpā ke Kalana i ke kiloi ‘ia ‘ana o ka ‘ōpala ma ka pu‘u ‘ōpala mai nā hui hana, nā hui hana mea kū‘ai, ke aupuni, nā kikowaena, a me nā kumu ‘a‘ole he hale ‘ohana i ‘oi a‘e i ka 20 pakeneka o ka ‘ōpala mea kanu. I mea e ho‘onui ‘ia ai ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala mai kahi e kiloi ‘ia ai ka ‘ōpala, e ho‘onui ke Kalana i ka pāpā ‘ana e kūpono ai nā kānaka noho a me nā hui e kaupalena i ka nui o ka ‘ōpala i kiloi ‘ia ai ma nā kahua kiloi ‘ōpala a me ka pu‘u ‘ōpala he huina li‘ili‘i wale nō. E ho‘okō ‘ia kēia pāpā ‘ana ma hope o ka wehe ‘ia ‘ana a me ka maopopo ‘ana i nā kānaka noho ka hana ‘ohi ‘ōpala mea kanu ma ka‘e alanui.

E like me ia i ‘ōlelo ‘ia ma luna nei, ‘a‘ole he hō‘oia ‘ana ka pāpā ‘ana i ke kiloi ‘ōpala mea kanu i ka ho‘ohuli pono ‘ia ‘ana o nā huina kūpono o ka ‘ōpala, inā ‘o ia wale nō ka hana. No laila, ma mua o ka ho‘okumu ‘ana o ke Kalana i ka pāpā ‘ana, e ho‘okumu ke Kalana i nā hana hou a‘e i ka wā ho‘okahi nō, penei:

- Ka hō‘oia ‘ana i ka maopopo ‘ana i ka lehulehu nā kumu/nā pōmaika‘i no ka pāpā ‘ana;
- Ka ho‘okō ‘ana i ka pāpā ‘ana;
- Ke kūkulu ‘ana i ke kāko‘o ma waena o nā kānaka/hui i loa‘a kekahi kuleana i pili i kēia pāpā ‘ana;
- Ka ho‘olaha ‘ana i ka ‘ike i ka lehulehu no nā koho like ‘ole no ke kiloi ‘ia ‘ana o ka ‘ōpala mea kanu; a me
- Ka paipai ‘ana i nā hana pono ma ka ho‘ohana ‘ana a me nā mākeke no ka ‘ōpala mea kanu i ho‘oponopono ‘ia.

Ke Kahua Hana Mea Ho‘opulupulu

I mea e ho‘omalu ai ka ‘ōpala mea kanu hou aku ma o ka polokalamu ‘ohi ma ka‘e alanui ma ke ‘ano ho‘omakauli‘i kālā, na ke Kalana e kūkulu i kekahi kahua ho‘oponopono ‘ōpala mea ola. E like me ia i ho‘ākāka ‘ia ma loko o ka ISWMP, he māhele nui ke kūkulu ‘ia ‘ana o kekahi kahua hana mea ho‘opulupulu no nā pono kūlanakauhale e ho‘onui ai i ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala i kahi ‘ē. E loa‘a ‘ekolu mau kumu nui no nā ‘ōpala mea ola no ka hana ‘ana i mea ho‘opulupulu:

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‘o ka ‘ōpala mai nā hale ‘ohana a me nā hui hana, nā mea pa‘a mea ola, a me ka mea‘ai. Aia ma lalo nei, hō‘ulu‘ulu ‘ia nā huina o kēlā me kēia mea o kēia manawa a me ka mea i wānana ‘ia no kēia mua aku e loa‘a auane‘i no ka ho‘oponopono ‘ana ma ke kahua i hāpai ‘ia.

Ka ‘Ōpala Mea Kanu

‘O ka ‘ōpala mea kanu, ‘o ia ka ‘ōpala i ‘oki ‘ia mai ka pā hale mai, nā la‘alā‘au, a me nā lā‘au Kalikimaka. Aia i loko o ka Papa 3-5, hō‘ulu‘ulu ‘ia nā huina ‘ōpala mea kanu i loa‘a ma ka pu‘u ‘ōpala o ke Kalana a me nā kahua kiloi ‘ōpala i nā makahiki i hala hope nei.

Papa 3-5. Ka Ho‘ohuli ‘ia ‘ana o ka ‘Ōpala Mea Kanu ma ke Kalana ma ka 2005 a me ka 2007-2010

Makahiki	‘Ōpala Mea Kanu i Loa‘a mai (Kana)		
	Nā Kahua Kiloī ‘Ōpala o ke Kalana	Ka Pu‘u ‘Ōpala o Kekaha	Huina Nui
2005	—	—	10,585
Iulai 2007-June 2008	10,814	1,221	12,035
Iulai 2008-June 2009	10,408	1,374	11,782
Iulai 2009-June 2010	17,809	930	18,739

Kumu: Ke Kalana ‘o Kaua‘i, Hawai‘i

— No ka 2005, ‘o ka huina nui wale nō ka mea i palapala ‘ia.

No nā kumu o kēia Papa Hana Laulā i Hō‘ano Hou ‘ia, ua kuhi ‘ia he loa‘a nā ‘ōpala a pau i kiloi ‘ia ma nā kahua kiloi ‘ōpala a me ka pu‘u ‘ōpala no ka ho‘oponopono ‘ana ma ke kahua kikowaena hana mea ho‘opulupulu aia ma ka RRP. No nā kumu o ka ho‘olālā ‘ana, ua kuhi ‘ia e ho‘omau nō ka nui o ka ‘ōpala i ‘ohi a ho‘ohuli ‘ia (‘o ia ho‘i he 18,739 TPY) no ka wā ho‘olālā.

Ma muli o ka wehewehe ‘ano no nā mea i hana ‘ia ai ka ‘ōpala, hui pū ‘ia me ka ‘ōpala e ho‘ohuli ‘ia nei ma o nā kahua kiloi ‘ōpala a me ka pu‘u ‘ōpala, ‘a‘ole e ‘ohi ‘ia nei ka ‘ōpala mea ola hou aku mai nā hale ‘ohana a me nā hui hana mai, a ua kuhi ‘ia ke kiloi ‘ia aku nei i ka pu‘u ‘ōpala. Hō‘ike ‘ia ma ka Papa 3-6 nā huina i kiloi ‘ia i ka 2010 (mai ka Papa 2-3) a me nā wānana ‘ana no kēia mau huina ma loko o ka wā ho‘olālā.

Papa 3-6. Ka Nui o ka ‘Ōpala Mea Kanu i Kiloī ‘ia ma ka Pu‘u ‘Ōpala o ke Kalana, 2010, a Wānana ‘ia no ka 2020-2035

Makahiki	‘Ōpala Mea Kanu i Kiloī ‘ia ma ka Pu‘u ‘Ōpala (TPY)		
	Hale ‘Ohana	Hui Hana	Huina Nui
2010	3,534	3,092	6,626
2020	3,981	3,483	7,464
2030	4,412	3,860	8,272
2035	4,645	4,064	8,709

*Ka mea i hana ‘ia ai ka ‘ōpala mea kanu 8% hale ‘ohana, 5.5% hui hana

I ka ho‘okō piha ‘ia ‘ana o ka polokalamu ‘ohi ‘ōpala ma ka‘e alanui, e like me ia i hāpai ‘ia ma loko o ka ISWMP, a me ka ho‘okō pū ‘ia aku o nā pāpā ‘ia ‘ana o ke kiloi ‘ia ‘ana o nā ‘ōpala mea ola ma ka pu‘u ‘ōpala mai nā hui hana mai, hiki ke kāpae ‘ia kekahi hapa o ka hō‘ike

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wānana no ka ‘ōpala mea kanu e kiloi ‘ia ai ma ka pu‘u ‘ōpala me ka ho‘oponopono pū ma ka RRP. Ua kuhi ‘ia he pi‘i ka nui o ka ‘ohi ‘ana mai nā hale ‘ohana mai mai ke 30% ā ke 60% i ka holo ‘ana o ka wā ho‘olālā. Ua kuhi ‘ia nō ho‘i e ho‘omau nā hui hana ‘ōpala ma ka mokupuni i kā lākou mau hana lawelawe na ko lākou po‘e kū‘ai; no laila, ua kuhi ‘ia he huina ‘ohi mai nā hui hana mai. ‘O nā huina ‘ohi i kuhi ‘ia mai nā hui hana mai i ka holo ‘ana o ka wā ho‘olālā, he 20%, 30%, a me ke 40% no nā makahiki 2020, 2030, a me ka 2035. Hō‘ulu‘ulu ‘ia i loko o ka Papa 3-7 nā huina ‘ōpala mea kanu i wānana ‘ia.

Papa 3-7. Nā Huina ‘Ōpala Mea Kanu i Hō‘alo ‘ia ai ke Kiloī ‘ia ‘ana ma Hope o ka Ho‘okumu ‘ana o ke Kalana i ka ‘Ohī ‘Ōpala ‘ana ma Ka‘e Alanui, 2010 a Wānana ‘ia no ka 2020-2035

‘Ōpala Mea Kanu i Kiloī ‘ia ma ka Makahiki (TPY)				Ka ‘Ōpala Mea Kanu i Hiki ke ‘Ohī ‘ia (TPY)			
MH	Hale 'Ohana	Hui Hana	Hale 'Ohana	Hui Hana	Hale 'Ohana	Hui Hana	Huina Nui aku i Wānana ‘ia e ‘Ohī ai
2010	3,534	3,092	—	—	—	—	—
2020	3,981	3,483	30%	20%	1,194	697	1,891
2030	4,412	3,860	60%	30%	2,647	1,158	3,805
2035	4,645	4,064	60%	40%	2,787	1,626	4,413

Mea Ho‘omaopopo: Huina ‘Ōpala Mea Kanu i Kiloī ‘ia ma ka Makahiki mai ka Papa 3-6 mai.

— ‘a‘ole i ho‘okō ‘ia

Ma ka ho‘ohui ‘ana i ka ‘ōpala mea kanu mai nā kahua kiloi ‘ōpala mai (18,740 TPY; Papa 305) i loko o ka huina ‘ōpala mea kanu i mana‘o ‘ia e ho‘ohuli ‘ia mai ka pu‘u ‘ōpala a‘e (Papa 3-7), pēlā e loa‘a ai ka huina nui i kuhi ‘ia no ka ‘ōpala mea kanu i loa‘a no ka ho‘oponopono ‘ana ma ka RRP, e like me ia i hō‘ulu‘ulu ‘ia ai i loko o ka Papa 3-8.

Papa 3-8. Nā Huina ‘Ōpala Mea Kanu i Wānana ‘ia i Loa‘a no ka Ho‘oponopono ‘ana

Makahiki	Huina ‘Ōpala Mea Kanu (TPY)
2020	20,630
2030	22,544
2035	23,152

Mea Ho‘omaopopo: Hō‘ulu‘ulu ‘ia nā huina mai ka:

Papa 3-5: Iulai 2009-June 2010 Huina +

Papa 3-7: Huina i ‘Ohī ‘ia i Wānana ‘ia

Nā Huina Mea Ola Pa‘a

‘O ka mea ola, ‘o ia nā mea pa‘a i koe a me nā mea pa‘a hapa i waewae ‘ia i ka wā e hooponopono ‘ia ana ka wai mea ‘ino ma ke kahua ho‘oponopono wai mea ‘ino o ke Kalana. Hiki nō ho‘i i ke kahua hana mea ho‘opulupulu RRP ke ho‘oponopono i nā mea ola pa‘a o ke Kalana (ka pelapela luawai pelapela), a ‘o ka hopena, ‘o ia ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala mai ka pu‘u ‘ōpala aku a me ka ho‘ohui ‘ia ‘ana o nā huina li‘ili‘i o nā mea pono no ke ola ‘ana i loko o ka mea ho‘opulupulu. Me ka nele nō o ka ‘ike no ka mea i hana ‘ia ai a i ‘ole ka pono o

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nā mea ola pa‘a, ma muli o ka nele o nā kumu mea ho‘ohaumia o nā hui hana mea kū‘ai i ho‘ākāka ‘ia i lawelawe ‘ia e nā kahua ho‘oponopono wai mea ‘ino, ua kuhi ‘ia ua kūpono nō nā mea ola pa‘a no ka mea ho‘opulupulu i kuhi ‘ia i ka pau ‘ana o ka hana. Ma ka ho‘ohana ‘ana i ka wānana no ka heluna kanaka i hō‘ike ‘ia ma ka Māhele 2 me ka ho‘omau pū aku i ka huina hana mea ola pa‘a o ke kanaka he 32.2 paona/kanaka/makahiki i kuhi ‘ia, kuhi ‘ia ma ka Papa 3-9 ka huina mea ola pa‘a i hiki ke loa‘a no ka ho‘oponopono ‘ana ma ka RRP.

Papa 3-9. Nā Huina Mea Ola Pa‘a i Loa‘a no ka Ho‘oponopono ‘ana na ke Kalana ma ka 2010, a Wānana ‘ia no ka 2020-2035

Makahiki	Heluna Kanaka ma ke Kalana	Huina Hana ‘Ōpala o ke Kanaka (paona/kanaka/makahiki)	Huina Mea Ola Pa‘a Nui (TPY)
2010	82,101	32.2	1,322
2020	92,485	32.2	1,489
2030	102,500	32.2	1,650
2035	107,915	32.2	1,737

Kumu: *Centralized Composting Facility Master Plan* (Beck 2008); ‘Ike no ka heluna kanaka o ke Kalana mai ka Papa 2-1

Nā Huina ‘Ōpala Mea‘ai

‘O ka ‘ōpala mea‘ai hui hana, ‘o ia ka mea‘ai ma‘ema‘e i hoo‘omākaukau ‘ole ‘ia i hana ‘ia ai i ka ho‘omākaukau ‘ia ‘ana no ka mākeke a i ‘ole no ka ‘ai ‘ana a me nā mea‘ai i ‘ai ‘ole ‘ia a me ke koena mea‘ai. ‘O nā kumu ‘ōpala mea‘ai o nā hui hana, ‘o ia nā hale kū‘ai mea‘ai, nā hōkele, nā hale ‘aina a me nā hale kū‘ai loa‘a koke. Hana ‘ia ka mea‘ai o ka hale ma ka ho‘omākaukau ‘ana i nā ‘aina me nā mea‘ai pū i ‘ai ‘ole ‘ia ma ka pā‘ina ‘ana a kiloi ‘ia. I ka 2010, ua kiloi ‘ia ma kahi o 15,200 kana ‘ōpala mea‘ai o nā hale ‘ohana a me nā hui hana ma ka pu‘u ‘ōpala o Kekaha, a ho‘ohana ‘ia ma kahi o 670 kana ‘ōpala mea‘ai e nā kānaka mālama pua‘a ma ke Kalana. No laila, ua hana ‘ia ma kahi o 15,870 ‘ōpala mea‘ai ka huina nui e nā hale ‘ohana a me nā hui hana, ‘o ia ho‘i, ma kahi o 1.0 paona/kanaka/lā, e like me ia i hō‘ulu‘ulu ‘ia ma lalo nei:

$$\frac{15,870 \text{ kana} \times 2,000 \text{ lbs/kana}}{82,101 \text{ ka heluna kanaka} \times 365 \text{ lā/makahiki}} = 1.0 \text{ lb/kanaka/lā}$$

Ua hō‘ike ka noi‘i wehewehe ‘ano ‘ōpala o Kaua‘i o ka 2005 ua kiloi ‘ia ma kahi o 7,257 kana ‘ōpala mea‘ai nai nā kānaka noho mai, a ‘a‘ohe mea i ho‘opō‘aiāpuni ‘ia i hiki ke ana ‘ia. Ua like kēia me kahi o kēia:

$$\frac{7,257 \text{ kana} \times 2,000 \text{ lbs/kana}}{67,217 \text{ ka heluna kanaka} \times 365 \text{ lā/makahiki}} = 0.59 \text{ lb/kanaka/lā}$$

No laila, inā he 1.0 lbs/kanaka/lā ka nui o ka hana ‘ia ‘ana o ka ‘ōpala mea ola o ke kanaka a he 0.59 lbs/kanaka/lā ka nui o ka hana ‘ia ‘ana o ka ‘ōpala mea ola o ka hale ‘ohana, a laila, he 0.41 lbs/kanaka/lā ka nui o ka hana ‘ia ‘ana o ka ‘ōpala mea‘ai.

E like me ia i hō‘ike ‘ia ma loko o ka ISWMP, he mana‘o ke Kalana e nānā nui i ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala mea‘ai i hana ‘ia e nā hui hana i ka ho‘omaka ‘ana. Hō‘ulu‘ulu ‘ia ma ka Papa

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3-10 ka wānana no nā huina ‘ōpala mea‘ai mai nā kumu hui hana a pau ma muli o ka heluna kanaka o ke Kalana.

Papa 3-10. Ka ‘Ōpala Mea‘ai Hui Hana Kūpono i Loa‘a no ka Ho‘oponopono/‘Ohi ‘ana na ke Kalana, 2010 a Wānana ‘ia no ka 2020-2035

MH	Heluna Kanaka Nui o ke Kalana	Huina ‘Ōpala Mea Ola Hui Hana/Kanaka i Hana ‘ia (lbs/kanaka/lā)	‘Ōpala Mea Ola Hui Hana i Hana ‘ia (TPY) ^a	% i Kuhi ‘ia he Kūpono/‘Ae ‘ia no ka Ho‘oponopono ‘ana (%)	Huina i ‘Ohi ‘ia (%)	Huina ‘Ōpala Mea‘ai Hui Hana (TPY) ^b
2010	82,101	0.41	6,143	50%	25%	768
2020	92,485	0.41	6,920	60%	30%	1,246
2030	102,500	0.41	7,670	70%	40%	2,147
2035	107,915	0.41	8,075	75%	50%	3,028

Mea Ho‘omaopopo: Mai ka Papa 2-1 ka ‘ike heluna kanaka o ke Kalana

He mau hō‘ike‘ike no ka hō‘ulu‘ulu ‘ana:

^a(82,101 kanaka) × (0.41 lbs/kanaka/lā) × (365 lā/2,000 lbs/kanaka) = 6,143 (kana)

^b(6,143 kana) × 50% × 25% = 768 (kana)

Ua hō‘ike nō ho‘i ke Kalana i ka wā lō‘ihī, i mea e ho‘onui hou ‘ia ai ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala, e ho‘okumu ‘ia kekahī hanana ‘ohi a ho‘oponopono ‘ōpala mea‘ai o nā hale ‘ohana. Wānana ‘ia e ho‘okumu ‘ia kēia polokalamu ma kahi o ka 2020 a ma hope paha. Hō‘ulu‘ulu ‘ia ma ka Papa 3-11 ka wānana no nā huina ‘ōpala mea‘ai o nā hale ‘ohana.

Papa 3-11. Nā Huina ‘Ōpala Mea‘ai Kūpono o nā Hale ‘Ohana a me nā Malihini Kipa i Loa‘a no ka Ho‘oponopono/‘Ohi ‘ana na ke Kalana, 2010 a Wānana ‘ia no ka 2020-2035

MH	Heluna Kanaka o ke Kalana	Huina ‘Ōpala Mea Ola o ke Kanaka i Hana ‘ia (lbs/kanaka/lā)	Huina ‘Ōpala Mea Ola o ka Hale ‘Ohana i Hana ‘ia (TPY) ^a	% i Kuhi ‘ia he Kūpono/‘Ae ‘ia no ka Ho‘oponopono ‘ana (%)	Huina i ‘Ohi i Kuhi ‘ia (%)	Huina ‘Ōpala Hale ‘Ohana (TPY) ^b
2010	82,101	0.59	8,840	80%	0%	0
2020	92,485	0.59	9,958	80%	50%	3,983
2030	102,500	0.59	11,036	80%	60%	5,297
2035	107,915	0.59	11,619	80%	70%	6,507

Mea Ho‘omaopopo: Mai ka Papa 2-1 mai ka ‘ike no ka heluna kanaka.

He mau hō‘ike‘ike no ka hō‘ulu‘ulu ‘ana:

^a(82,101 kanaka) × (0.59 lbs/kanaka/lā) × (365 lā/2,000 lbs/kana) = 8,840 (kana)

^b(8,840 kana) × 80% × 0% = 0 (kana)

Ma loko o ka Papa 3-12, hō‘ulu‘ulu ‘ia ka huina o ‘ōpala mea ola i hiki ke loa‘a no ka ho‘oponopono ‘ana ma ka RRP i ka holo ‘ana o ka wā ho‘olālā.

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Papa 3-12. Ka Hō‘ulu‘ulu ‘ana no ka ‘Ōpala Mea Ola i Loa‘a Mai nā Kumu Like ‘Ole mai o ke Kalana, 2010 a Wānana ‘ia no ka 2020-2035

MH	‘Opala Mea Kanu Mai nā Kahua Kiloī ‘Opala mai a me ka Pu‘u ‘Opala ^a	‘Opala Mea kanu i ‘Ohi ‘ia Mai Ka‘e Alanui mai ^b	Nā Mea Ola Pa‘a ^c	‘Opala Mea‘ai Hui Hana ^d	‘Opala Mea‘ai Hale Noho i Kūpono ^e	Huina Mea Ola Nui i Loa‘a
2010	18,739	—	1,322	768	—	20,829
2020	18,739	1,891	1,489	1,246	—	23,365
2030	18,739	3,805	1,650	2,147	5,297	31,638
2035	18,739	4,413	1,737	3,028	6,507	34,424

— ‘a‘ole i ho‘okō ‘ia

^a Mai ka Papa 3-5 mai: Ka Huina Mai Iulai 2009–June 2010

^b Mai ka Papa 3-7 mai: Ka Huina ‘Ohi Hou ‘ana i Wānana ‘ia

^c Mai ka Papa 3-9 mai: Huina Mea Ola Pa‘a

^d Mai ka Papa 3-10 mai: ‘Ōpala Mea‘ai Hui Hana i Kūpono

^e Mai ka Papa 3-11 mai: Nā Huina ‘Ōpala Mea‘ai Hale Noho i Loa‘a no ka Ho‘oponopono/‘Ohi Hou ‘ana na ke Kalana

Ma muli o ka ho‘okō ‘ia ‘ana o kēia mau banana ho‘ohuli ‘ōpala i loa‘a paha i loko o ka wā ho‘olālā, ua kuhi ‘ia he ‘ohi ‘ia ma kahi o 34,424 TPY o ka ‘ōpala mea ola a ho‘ohuli ‘ia i ka hiki ‘ana mai o ka pau ‘ana o ka wā ho‘olālā 15 makahiki (Papa 3-12). Ua like kēia me kahi o 21% o ke ka‘ina holo ‘ōpala.

He mea pono ke kahua kikowaena no ka hana mea ho‘opulupulu, no ka mea, ua keu aku nā kahua hana mea ho‘opulupulu i kēia manawa i ka mea e hiki ai ke hā‘awi ‘ia i ka palapala ‘ae a ‘a‘ole i loa‘a ma kahi kokoke i nā wahi kahi e noho ai ka hapa nui o nā kānaka. ‘O kekahī mea hou aku nō, hiki ke ho‘olālā ‘ia kekahī kahua kikowaena ‘a‘ole no ka hana mea ho‘opulupulu wale nō i ka ‘ōpala mea ola, ‘o ka ‘ōpala mai nā pō‘ino mai nō kekahī. Ke ho‘ākāka ‘ia kekahī wahi he wahī hana mea ho‘opulupulu, e no‘ono‘o ‘ia kekahī kahua waihona ‘ōpala pō‘ino kekahī, ‘oiai e hana ‘ia ka hapa nui o kēia ka‘ina holo ‘ōpala i mea ho‘opulupulu. Hō‘ike ‘ia kekahī ‘ike hou aku no ke kiloi ‘ōpala pō‘ino ma ka Māhele 3.7.2.3.

Ke Kōkua i nā Kahua i ‘Ona ‘ia me ka Hana ‘ana i ka Mea‘ai i Mea Ho‘opulupulu

I kēia manawa, ‘a‘ole e hana nei nā hui hana mea ho‘opulupulu o ka mokupuni i ka mea‘ai i mea ho‘opulupulu. I mea e paipai ai iā lākou e hana pēlā, ua kō i kēia mau kahua ka mea e kūpono ai ka pu‘u kālā ho‘opō‘aiāpuni akamai e hō‘ike‘ike ai i ka mea e mau ai ka hana ‘ana i ka ‘ōpala mea‘ai i mea ho‘opulupulu i ka Papa Ola, ‘oiai he pono e ho‘ololi ‘ia kā lākou mau palapala ‘ae, a kōkua i nā hui hana ho‘opulupulu i ka ho‘oponopono ‘ana i nā pilikia i ‘ike ‘ia.

E kōkua nō ho‘i ke Kalana ma “ka ho‘ohui ‘ana” i nā mea hana ‘ōpala mea‘ai a me nā hui hana mea ho‘opulupulu.

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Nā Mea e Pono ai ka “‘Ōpala Mea‘ai i Mea‘ai Holoholona”

Na ke Kalana e ho‘oponopono hou aku i nā mea e pono ai kekahi polokalamu “‘ōpala mea‘ai i mea‘ai holoholona” ma ka ho‘omalu ‘ana a me ka ho‘olako ‘ana i ke kālā i ka polokalamu ‘ohi ‘ōpala mea‘ai e loa‘a ai ka mea‘ai i nā kānaka mālama kao a me ka pua‘a.

‘O kekahi hana nui, na ke Kalana e ho‘ona‘auao a paipai i nā hui hana ‘ōpala mea‘ai e komo i kekahi polokalamu ho‘ohuli ‘ōpala mea‘ai. ‘O kekahi māhele o kēia, ‘o ia ka ‘ohi ‘ana i ka ‘ōpala mea ola i kūpono i mea‘ai pua‘a a me ke kao, a me ka ho‘okumu ‘ana i nā pilina me nā mahi ‘ai e loa‘a ai ka ‘ōpala mea ola. He loa‘a nō paha ka pu‘u kālā akamai a ke Kalana i nā hui hoihoi e ho‘okumu ai i kekahi hanana e hō‘ike‘ike ana i nā ‘ao‘ao hana a kālā e ho‘ohuli ‘ia ai ka ‘ōpala mea‘ai i mea‘ai holoholona.

Ka Paipai i ka Ho‘ohana Hou ‘ia o nā Pā Halihali Ukana Nui

Kilo i ‘ia ka hapa nui o nā pā halihali ukana nui i hana ‘ia e nā hui i ‘ōpala a ho‘ouna ‘ia i ka pu‘u ‘ōpala. I kēia manawa, ‘a‘ohe hui pā halihali ukana nui ma Kaua‘i, no laila, ua kaupalena ‘ia nā koho no ka ho‘opō‘aiāpuni ‘ana a i ‘ole ka ho‘ohana hou ‘ana i nā pā halihali ukana nui. Ke ho‘iho‘i hou aku nei nō paha kekahi o nā hui nui i nā pā halihali ukana nui i ka ‘āina haole ma o nā pahu halihali ukana nui.

Na ke Kalana e loiilo i nā lilo a me nā pōmaika‘i no ka ho‘owelu ‘ana i nā pā halihali ukana nui ke ho‘omaka ka hana o nā kahua hana mea ho‘opulupulu. Ā hiki mai ia manawa, na ke Kalana e loiilo i ka mea e hiki ai ke ho‘owelu ‘ia i nā pā halihali ukana nui me ‘elua mau hui i ‘ona ‘ia i pa‘a ka palapala ‘aelike me ke Kalana e lawelawe ai i ka hana ho‘owelu ‘ōpala lā‘au.

3.4 Ka ‘Ōpala Kūikawā

‘O ka ‘ōpala kūikawā, ‘o ia nā māhele o ke ka‘ina holo ‘ōpala e pono ai ka ho‘opā ‘ana ma kahi ‘ano ‘oko‘a loa ma muli o ke ana a i ‘ole no kekahi mea pa‘a, lā‘au a i ‘ole mea ola paha i hana ‘ia ai ia mea no ka ho‘oponopono ‘ana a i ‘ole no ke kiloi ‘ana. Aia ma lalo nei nā hana i hāpai ‘ia a ke Kalana e no‘ono‘o mai nei no ka ho‘omalu ‘ana i kēia mau mea. ‘O kekahi mea hou aku, hō‘ike ‘ia nā pilikia i pili i ka ho‘omalu ‘ia ‘ana o kēia mau mea a me nā hana e hana ai e ho‘oponopono ai i kēia mau pilikia.

Ke Kahua Ho‘oponopono ‘Ōpala Kūkulu a Wāwahi Hale

Ke ho‘olālā aku nei ke Kalana e ho‘oka‘awale i kekahi wahi ma ka RRP i hāpai ‘ia no ke kūkulu ‘ia ‘ana o kekahi kahua ho‘oponopono ‘ōpala kūkulu a wāwahi hale (construction and demolition: C&D). ‘O ka ‘ōpala C&D, ‘o ia nā ‘ano ‘ōpala like ‘ole. ‘O ka mea ma‘amau a me ka huina nui loa, ‘o ia ke kimeki, ka uinihapa, ka palaka, a me ke kimeki alanui, ka papa lā‘au i kī ‘ia ai ka lā‘au a me ka mea ‘a‘ole i kī ‘ia, ka papa drywall, ka pahu waihona pā, ke pani puka, ka pukaaniani, ka piula, a me ka lepo.

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Hō‘ike ka ‘ike i loa‘a no ka mea i hana ‘ia ai ka ‘ōpala hana ‘ia he 5,000 TPY ‘ōpala C&D a ‘oi ma Kaua‘i; ‘a‘ole he kūpono kēia ‘ōpala a pau no ka ‘ohi ‘ana ma ka RRP. Hō‘ike nā limahana Kalana o kēia wā i hala hope a‘ela ke hana ‘ia nei ka ‘oi aku o ka nui o ka ‘ōpala C&D i kēlā – ‘o ia ho‘i, ma kahi o ka 16,000 TPY, ‘o ia kahi kokoke i ka 15% o ke ka‘ina holo ‘ōpala o ka makahiki. I loko o kēia huina he 3,000-4,000 kana kimeki/uinihana/palaka a me ke kimeki alanui, ‘o ia ka mea e hana ‘ia nei e Pacific Cutting & Coring. Kiloi ‘ia he 10,000–12,000 kana o nā ‘ano ‘ōpala C&D ‘ē a‘e ma ka pu‘u ‘ōpala o ke Kalana. Ua hō‘ulu‘ulu ‘ia ka mea i hana ‘ia ai kēia mau ‘ano ‘ōpala a me ka huina ma muli o ka loihoi ‘ana ma ka nānā ‘ana a ma ka helu ‘ana o nā limahana o ke Kalana i nā ‘ōpala e komo ana i ka pu‘u ‘ōpala o Kekaha ma waena o ‘Apelila a me Iulai 2011.

Aia i loko o ka hana ‘o ka ho‘ohuli ‘ana i ka ‘ōpala C&D mai kahi e kiloi ‘ia ai, loa‘a nā polokalamu/nā lula alaka‘i, nā palapala ‘aelike no ka hana lawelawe, a me nā mea e pono ai paha ka hana ma ‘elua mau māhele;

Māhele 1 o ke kahua ho‘oponopono ‘ōpala C&D: Na kekahi kānāwai ‘ōpala e koi e waewae ‘ia ka ‘ōpala C&D ma kahi i kūkulu a wāwahi ‘ia ai ma ke ‘ano he ‘ea pa‘akikī a me ka palupalu, ka drywall ma‘ema‘e, ka ‘ōpala mea hao i ‘ō‘ā ‘ia, ka lā‘au i ho‘ohaumia ‘ole ‘ia, ke pā halihali ukana nui, ka pepa pahu kahiko, a me nā huina li‘ili‘i o ka uinihana a me ka palaka kimeki. E halihali ‘ia kēia mau pu‘u ma‘ema‘e i kahi ma ka RRP me kekahi hale waihona no kēlā me kēia ‘ano mea. Aia a piha kekahi huina kūpono o kekahi o kēia mau ‘ano mea e kūpono ai ka halihali ‘ia ‘ia ‘ana i kahi ‘ē, e halihali ‘ia nō i ka mākeke. Hō‘ike kēia ma ke ‘ano ‘o ia ke kahua ho‘oponopono ‘ōpala C&D Māhele 1.

Māhele 2 o ke kahua waewae ‘ōpala C&D: Inā ‘a‘ole puka pono ka hopena i makemake ‘ia ma muli o ke kānāwai no ka waewae ‘ia ‘ana ma kahi i hana ‘ia ai ka ‘ōpala, hiki ke ho‘okumu ke Kalana i ka māhele ‘elua o kēia kahua, ‘o ia kekahi laina waewae ‘ōpala C&D e ho‘oponopono ai i ka ‘ōpala C&D.

E like me ia i pili i ka 3,000–4,000 kana ‘ōpala kimeki/uinihana/palaka a me ke kimeki alanui, e ho‘omau ke Kalana i ke kauka‘i ma luna o kekahi hui i ‘ona ‘ia nānā e ho‘oponopono i kēia ‘ōpala. Akā na‘e, hāpai ‘ia ka mana‘o e ho‘oka‘awale ‘ia kekahi wahi ma ka RRP no ka waiho ‘ana no ka manawa lō‘īhi/pōkole a i ‘ole no ka ho‘oponopono ‘ana he 5,000 kana ka palena nui o kēia ‘ano ‘ōpala. Na kekahi hui me nā mīkini ‘ōpā/waewae holoholo e hele i ke kahua ‘ekolu manawa a ‘oi o ka makahiki e ho‘oponopono ai i ka ‘ōpala. Ua pili kēia hana i ka Māhele 1 a me ka 2 o ka hana ho‘oponopono e like me ia i ho‘ākāka ‘ia ma luna nei.

‘A‘ole e ‘ohi ‘ia nei ka ‘ōpala C&D i kēia manawa e ke Kalana no ka ho‘opō‘aiāpuni ‘ana. E like nō me nā hana lawelawe ma lalo o ke Kalana, ua kuhi ‘ia na kekahi hui i ‘ona ‘ia e lawelawe i ka ho‘opō‘aiāpuni ‘ōpala C&D ma ka RRP. Aia i ke ‘ano o ka huina maoli o kēia mau ‘ano ‘ōpala i hana ‘ia maloko o ke Kalana, hiki ke kōkua ‘ia ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala i kahi ‘ē.

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Ke Kānāwai Ho‘ohuli ‘Ōpala Kūkulu a Wāwahi Hale i Hāpai ‘ia o ke Kalana ‘o Kaua‘i

Ma ka noke ‘ana ā loa‘a aku ka palena nui o ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala, ke hāpai aku nei ka Māhele ‘Ōpala o ke Kalana ‘o Kaua‘i i ke kānāwai e koi aku i ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala C&D mai ke kiloi ‘ia ‘ana ma ka pu‘u ‘ōpala.

Kuhi ke Kalana he ‘ōpala C&D he 15% ka palena nui o ke ka‘ina holo ‘ōpala o Kaua‘i. He ‘ōpala ho‘opō‘aiāpuni kekahī hapa nui o kēia ‘ōpala, a ma ka ho‘ohuli ‘ana i ka ‘ōpala, e mālama ‘ia kahi ka‘awale ma ka pu‘u ‘ōpala a pēlā ho‘i e ho‘omakauli‘i ‘ia ai nā kumu waiwai loa‘a wale. Na kēia kānāwai e kōkua i nā pāpā ‘ana o kēia manawa no ke kiloi ‘ia ‘ana o ka pepa pahu, ka mea hao, a me ka ‘ōpala mea kanu i hana ‘ia e nā hui. Ua kuhi ‘ia he kōkua kēia ‘ano kānāwai i ka ho‘ohuli ‘ana ma kahi o 4,000 kana ‘ōpala mai ka pu‘u ‘ōpala aku ia makahiki aku a ia makahiki aku.

Hana ‘ia ke kānāwai C&D no nā hanana kūkulu hale he \$100,000 ka waiwai a ‘oi. Ho‘okoe ‘ia nā hanana ‘o ka hana paipu, uila, a hana mīkini wale nō ka hana i pono ai, a pēlā pū nā hanana kaupaku ‘a‘ole pono ka wehe ‘ia ‘ana o ke kaupaku i pa‘a mua. Hiki nō ho‘i ke ho‘okoe ‘ia nā hanana me ka palapala ‘ae a ka ‘Oihana i lawa ‘ole ai kahi nui kūpono a i ‘ole kahi e komo ai a i ‘ole nā hanana ‘a‘ohe ‘ōpala ho‘opō‘aiāpuni.

Ma loko o kēia kānāwai, koi ‘ia nā hui kūkulu hale e waewae a ho‘opō‘aiāpuni i nā mea ho‘opō‘aiāpuni i wae ‘ia i hiki ke ho‘oponopono ‘ia ma kahi i loa‘a ai a me nā mākeke i pa‘a pono. ‘O nā mea ho‘opō‘aiāpuni i wae ‘ia ai, ‘o ia ka pepa pahu, ka ‘ōpala mea kanu, ke kimeki, a me ke kimeki alanui. Paipai ‘ia nō ho‘i ke ki‘i hou ‘ana i nā mea ho‘opō‘aiāpuni ma lalo o ke kānāwai.

Ma lalo o ke kānāwai, koi ‘ia nā hui kūkulu hale e palapala i nā hana ho‘opō‘aiāpuni, ki‘i hou, a kiloi i ka wā e holomua ana ka hanana, me ka helu pū ‘ia nō o nā mea i hana ‘ia ma kahi o ka hana a me ka palapala ‘ia ‘ana ho‘i o kahi i waiho ‘i ai nā mea ho‘opō‘aiāpuni. Na ka Māhele ‘Ōpala Pa‘a e nānā i nā hanana a me nā hō‘ike i mea e hō‘oia ‘ia ai ka ho‘okō ‘ia ‘ana o ke kānāwai.

Ke Kahua Ho‘oponopono Taea i Pau ka Ho‘ohana ‘ia

Ho‘oponopono ‘ia ka hapa nui o nā taea i pau ka ho‘ohana ‘ia mai nā ka‘a mai ma Kaua‘i e nā hui kahi e ho‘okomo ‘ia ai nā taea hou. ‘Ae ‘ia nā taea o nā hui hana mea kū‘ai a me nā taea mai nā wahi mai ‘a‘ole he hale ‘ohana ma nā hui kūloko i ‘ona ‘ia. I kēia manawa, ‘ae ke Kalana i nā taea i pau ka ho‘ohana ‘ia mai nā kānaka noho mai ma nā kahua kiloi ‘ōpala a pau a me ka pu‘u ‘ōpala. Ho‘omalu ‘ia nā taea i ia manawa e kekahī hui kūkulu hale i ‘ona ‘ia. ‘O ka hana ma‘amau, ho‘ouna ‘ia i kahi ‘ē ma waho o ka mokupuni kahi e ho‘oweluwele a puhi ‘ia ai i ke ahi i ‘aila. No nā taea ‘a‘ole i ‘ohi ‘ia ma kēia hana, hiki ke ‘ohi ‘ia ma ka RRP. Hāpai ke Kalana i ka mana‘o e kūkulu i kekahī wahi kahi e ho‘oponopono ai ma ka RRP no nā taea i pau ka ho‘ohana ‘ia, hui pū ‘ia me ka mea e hiki ai ke ho‘omalu ‘ia nā taea a pau i pau ka ho‘ohana ‘ia ma ke Kalana. Ua kuhi ‘ia ma kahi kēia o ka 70,000-80,000 mau taea o ka makahiki. Ua kuhi ‘ia he emi mai ka nui o nā taea i pau ka ho‘ohana ‘ia a kiloi ‘ia i ka 1% o ke ka‘ina holo ‘ōpala, a he

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100% ka nui o nā taea e ‘ohi ‘ia nei ma o ka hana e kū nei i kēia manawa. Pāpā ‘ia ke kiloi ‘ia ‘ana o nā taea ma ka pu‘u ‘ōpala o ke Kalana.

‘Ae ke Kalana i nā taea ma nā kahua kiloi ‘ōpala a pau a ma ka pu‘u ‘ōpala o Kekaha. Ma ia hope mai, ho‘oponopono ‘ia nā taea e kekahi hui. Kuhi ‘ia na kekahi hui i ‘ona ‘ia e hana i kēia hana lawelawe i māhele o ka RRP. Loa‘a i ka RRP ka mea e hiki ai ke ho‘omalu 70,000-80,000 mau taea o ka makahiki.

3.5 Ka ‘Ōpala Ho‘opilikia a Uila o ka Hale

Ke Kahua Waihona ‘Ōpala Ho‘opilikia o ka Hale

Ma ka RRP, he pono e ‘ohi ‘ia ka ‘ōpala ho‘opilikia o ka hale i kaupalena ‘ia ai ka huina he huina ma‘amau no ka hale, e like me ia ma ka pu‘u ‘ōpala. He makemake pū nō paha ke Kalana e ‘ae i nā huina li‘ili‘i o ka ‘ōpala ho‘opilikia mai nā hui li‘ili‘i mai a me nā mahi ‘ai, e like me ka mea e pono ai. ‘O nā ‘ōpala ho‘opilikia ma‘amau o nā hale, ‘o ia ke kini lā‘au kīkī, ka iho, ka ‘aila, ka pena, nā lā‘au ho‘oma‘ema‘e, ka lā‘au make mū, a me ke kini propane. ‘O kekahi o nā ‘ano hana e ho‘ohuli ‘ia ai ka ‘ōpala i ho‘ākāka ‘ia e ke Kalana, he hanana kuapo lā‘au a me kahi e ho‘ohuihui hou ‘ia ai ka pena. Malia paha ‘a‘ole hiki ke ki‘i hou ‘ia nā mea he nui o kēia mau mea, akā, hiki ke pilikia ka ‘āina inā kiloi ‘ia me ka hana pono ‘ole ‘ana. ‘O kekahi mea hou aku, he pi‘i ka pono o ke kahe ‘ana o nā mea ‘ano wai ma ka pu‘u ‘ōpala i ke kāpae ‘ia ‘ana o kēia mau mea mai ka pu‘u ‘ōpala aku. Hana ‘ia 370 TPY o ka HHW e nā kānaka noho (ma kahi o ka 0.35% o ke ka‘ina holo ‘ōpala holo‘oko‘a).

Paipai ‘ia ka mana‘o he māhele ke kahua waihona HHW i māhele o ka RRP holo‘oko‘a. I kēia manawa, mālama ke Kalana i kekahi hanana HHW ma nā kahua kiloi ‘ōpala ‘ehā. Akā na‘e, ma kekahi kahua waihona pa‘a mau, hiki i ke Kalana ke mālama i ka hana lawelawe i ‘oi aku kona pono a ‘oi aku kona nui.

Ke Kahua Waihona ‘Ōpala Uila

Paipai ‘ia ka mana‘o i kahua waihona ‘ōpala uila i māhele o ka RRP kahi e ‘ohi a ho‘oponopono ai i ka ‘ōpala uila. ‘O nā ‘ōpala uila, e like me ka mīkini lolouila, ka pahu ho‘olele ki‘i, ke kīwī, ke kelepona, a me nā mīkini pahu ho‘olele leo, he ‘ohi ‘ia ma ka hale kahua waihona HHW i ho‘ohuihui ‘ia i hāpai ‘ia. Ke lawa kūpono ka nui o nā mea i ‘ohi ‘ia, halihali ‘ia ka pahu, kini, a pā halihali ukana nui paha i kahi e ho‘oponopono ‘ia ai (ma kekahi mokupuni ‘oko‘a nō paha) no ka wāwahi ‘ana (inā kūpono), ke ki‘i hou ‘ana, a me ke kiloi pono ‘ia ‘ana o ka ‘ōpala ho‘opilikia a ho‘okoe ‘ia. ‘O ka hana i ho‘okoe ‘ia ma kēia hana ‘ana, ua pili i nā mīkini uila i oia mau ka hiki ke ho‘ohana ‘ia a hana pono. I kēia ‘ano manawa, ho‘omalu ‘ia ka ‘ōpala uila ma o ke kikowaena ho‘ohana hou ma ka RRP. Mālama ‘ia nō ka ‘ohi ‘ia ‘ana o ka ‘ōpala uila i ka makahiki e ke Kalana ma o kekahi hui i ‘ona ‘ia. Kuhi ‘ia nā kekahi hui i ‘ola ‘ia e mālama i kēia hana ho‘okahi nō i māhele o ka RRP. ‘Ohī ‘ia nō ho‘i kekahi o kēia mau mea mai ka lehulehu mai ma o nā hui ‘a‘ole ma lalo o ke aupuni.

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I kēia manawa, na ke Kalana e mālama i nā hanana ‘ohi ‘ōpala uila i kekahi manawa. I ka 2011, ‘ohi ‘ia ma kahi o 100 kana (‘o ia ho‘i, emi mai i ka 0.1% o ke ka‘ina holo ‘ōpala holo‘oko‘a) ‘ōpala uila ma kekahi hanana mai nā hui hana mai. Ma ka mālama ‘ana i kekahi hana lawelawe pa‘a mau no ka ‘ohi ‘ana i kēia ‘ano ‘ōpala a me ka hana ‘ana ā ‘oi aku ka ma‘alahi o ka ‘ohi, mana‘o ‘ia e pi‘i auane‘i ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala i kahi ‘ē. He kōkua nō ho‘i ke ho‘ohuli ‘ia ‘ana o ka ‘ōpala uila i ka pono o ke kahe ‘ana o ka mea wai a me ke ki‘i hou ‘ia ‘ana o nā mea hao i waiwai.

3.6 Ke Kikowaena Ho‘ona‘auao

He mea nui ka ho‘ona‘auao a me ka ho‘olaha ‘ana i ka ho‘onui ‘ia ‘ana o ka ‘ohi a me ka ho‘ohuli ‘ia ‘ana o nā mea ho‘opō‘aiāpuni a pau. No laila, paipai ‘ia ka mana‘o e kūkulu ‘ia kekahi kikowaena ho‘ona‘auao i māhele nui o ka RRP, ‘oiai pēlā e hiki ai ke kūkākūkā me nā kānaka noho, nā hui, nā ‘ahahui kuapo, nā hui kaiāulu, nā kula, nā malihini kipa, nā luna aupuni, a me nā mea ‘ē a‘e no nā pōmaika‘i o ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala a me nā polokalamu i mālama ‘ia ma ka RRP. Ma ia hope mai, hiki ke kōkua ‘ia kēia mau kūkākūkā ‘ana ma ka mālama ‘ana i nā huaka‘i i alaka‘i ‘ia ma ka RRP e māka‘ika‘i ai i nā hana ma ia wahi a pēlā e kōkua ‘ia ai nā hana a ke Kalana ma ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala. Hiki nō ho‘i ke kūkulu ‘ia nā kū‘ono hana ma ke kikowaena ho‘ona‘auao e kāko‘o ai i ka noi‘i e ho‘omau ana ma ka RRP i pili i nā ‘ao‘ao like ‘ole, e like me ka hana mea ho‘opulupulu, ka hana uila ‘ana, ka loiloi ‘ana i ka hana mīkini, a me ke a‘oa‘o ‘ana.

3.7 Ka Hō‘ili‘ili ‘Ōpala Pa‘a

He nui nō nā kaiāulu e ho‘ololi nei i kā lākou hana he hana mīkini ma ka ho‘ā‘o ‘ana e ho‘ēmi i ka nui o ka ‘ōpala me ka lilo, a ho‘onui i ka pono o ka hana me nā ‘eha o nā limahana. Paipai kēia Papa Hana e ho‘omau ke Kalana i ka ho‘ololi ‘ana mai ka hana lima ā ka hana mīkini, penei:

- E ho‘omau ke Kalana i ka ho‘ohui ‘ana mai i nā kalaka mīkini ‘ohi ‘ōpala ma nā ‘āpana ‘ohi ‘elima. Ma ka ho‘ololi ‘ana i ka hana mīkini ‘ohi, pēlā e emi ai ka nui o nā limahana e pono ai no ka ‘ohi ‘ana i ka ‘ōpala pa‘a. Hiki ke wehe ‘ia ho‘okahi limahana o kēlā me kēia pū‘ulu hana. Na ke Kalana e ho‘one‘e i kēlā limahana i ka ‘ohi ‘ōpala mea kanu ma ka‘e alanui;
- Ho‘omaka ke Kalana i ka ‘ohi i ka ‘ōpala mea‘ai i hana ‘ia e nā hui hana mea‘ai.
- Na ke Kalana e mālama i ka hana noi‘i no ka holo pono o ka hana ‘ohi a me ka mālama pono ‘ia ‘ana o nā ka‘a; a
- Na ke Kalana e hai i kekahi hui nāna e ho‘omalu i ka ho‘okō ‘ia ‘ana o ka polokalamu mīkini ‘ohi.

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3.8 Nā Kahua Kiloī ‘Ōpala a me nā Pu‘u ‘Ōpala

3.8.1 Nā Kahua e Kū nei

Na ke Kalana e ho‘oholo ‘ehā mau kahua kiloi ‘ōpala ma Hanapēpē, Līhu‘e, Kapa‘a, a me Hanalei no ka ho‘ohui pū ‘ana i ka ‘ōpala mai nā kalaka ‘ohi ‘ōpala mai a ho‘ouka ma luna o nā ka‘a halihali nui no ka halihali pono ‘ana i ka pu‘u ‘ōpala ma Kekaha me ka ho‘omakauli‘i pū i ke kālā. ‘A‘ohe mana‘o o ke Kalana e ho‘ololi a ho‘onui paha i nā kahua kiloi ‘ōpala e kū nei i kēia manawa.

Ua ho‘oholo ‘ia ka pu‘u ‘ōpala o Kekaha, ‘o ia ho‘i ka pu‘u ‘ōpala ho‘okahi wale nō o ka mokupuni, ma ‘elua mau māhele Ua piha ka Māhele I he mau makahiki ma mua o ka mea i kuhi ‘ia ai ma muli o ka pi‘i nui ‘ana o ke kiloi ‘ia ‘ana o ka ‘ōpala pa‘a ma hope o ka makani pāhili nui, ‘o ‘Iniki, ma ka 1992. Ua wehe ‘ia ka Māhele II i ka 1993 a ke kokoke aku nei i kona kūlana piha. I ka 1998, ua ho‘onui hou ‘ia a‘ela ke ki‘eki‘e o ka Māhele II ā ke 60 kapua‘i ma luna a‘e o ka msl. Mai kēlā manawa mai, ua ho‘onui hou a‘e ke Kalana i ke ki‘eki‘e he 85 kapua‘i ma luna a‘e o ka msl a ho‘olaulā hou ‘ia (Cell 1). Mana‘o ‘ia e piha aku i ka pu‘u ‘ōpala o Kekaha kona kūlana piha e like me ka ‘ae ‘ia ‘ana ma lalo o ka palapala ‘ae o kēia manawa (‘o ia ho‘i, Māhele II, me ka Cell 1 pū kekahi) i loko o ka hapa o hope Malaki 2014. I kēia manawa, ke hana mai nei ke Kalana me ka ho‘ā‘o pū e ‘ae aku i ka palapala ‘ae no ka ho‘olaulā hou ‘ana (Cell 2) me ka ho‘onui pū ‘ia ‘ana o ke ki‘eki‘e o ka Māhele II/Cell 1 a me ka 2.

Ke loa‘a ka ‘ae na ke Kalana mai no nā ho‘onui ‘ana a ho‘omau i ka ho‘ohana ‘ana i ka pu‘u ‘ōpala o Kekaha, e piha aku ka pu‘u ‘ōpala ma waena o ka 2022 a me ka 2024, a laila, e pono ana e kūkulu ‘ia kekahi pu‘u ‘ōpala hou. E pono ana nō ho‘i e pani ‘ia ka pu‘u ‘ōpala o Kekaha kekahi no ka manawa. Mana‘o ‘ia he 18 paha mahina ka lō‘ihī o ka wāwahi ‘ia ‘ana o ka pu‘u ‘ōpala o Kekaha a e ho‘omaka ‘ia i ka piha ‘ana o ke kūlana piha a pau ke kūkulu ‘ia ‘ana o ka pu‘u ‘ōpala hou. I mea e kūpono ai nā huina ‘ōpala e hana ‘ia ana i kēia mua aku, ua hō‘ike ke Kalana i kekahi mau hana ma ke ‘ano ho‘opōkole ma lalo nei.

3.8.2 Ka Ho‘olalā ‘ana i ka Papa Hana no ka Wā Lō‘ihī

3.8.2.1 Ka Pu‘u ‘Ōpala o Kekaha

Ka Ho‘olaulā ‘ana

Ma Nowemapa 2007, ua pa‘i ‘ia ka Final Environmental Assessment no ka Māhele II o ka pu‘u ‘ōpala o Kekaha. ‘O ke kumu o kēia hana i hāpai ‘ia, ‘o ia ka ho‘olaulā ‘ana i ka Māhele II, a pēlā e ho‘olō‘ihī ‘ia ai o ke ola o ka pu‘u ‘ōpala o Kekaha, ‘oiai ‘o ia wale nō ka pu‘u ‘ōpala i loa‘a ai kona palapala ‘ae ma ka mokupuni ‘o Kaua‘i.

Ua ho‘olalā ‘ia nā ho‘olaulā ‘ana i hāpai ‘ia ma ‘ekolu mau wahi: Cell 1, Cell 2, a me ka Cell 3. Ma ka 2009, ua kūkulu ‘ia ka Cell 1 o ka pu‘u ‘ōpala ma ka ho‘olaulā ‘ana i ka Māhele II ma ka loko ho‘oki‘o mea wai e kū nei a me kekahi mau ‘eka hou aku ma ka ‘ao‘ao. ‘Ae ‘ia ka Māhele

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II/Cell 1 i kēia manawa no ka ‘ohi ‘ana i ka ‘ōpala ā hiki i ke 85 kapua‘i ma luna o ka msl a ke ho‘ohana ‘ia mai nei a mana‘o ‘ia e piha aku i ka hapa o hope o Malaki 2014. Aia ke ho‘olālā ‘ia mai nei ka Māhele II/Cell 2 me ka ho‘oponopono pū i ka palapala ‘ae. Na ka ho‘olaulā ‘ana o ka Cell 2 e ho‘onui hou aku i kahi ho‘opiha o ka Māhele II ma kahi o ke awāwa ma waena o ka pu‘u ‘ōpala o ka Māhele I i pau i ke pani ‘ia a me ka pu‘u ‘ōpala o ka Māhele II e kū nei. Ma muli o ka pa‘apū o ka pu‘u ‘ōpala o kēia manawa a me ka nui o ke kiloi ‘ia ‘ana o ka ‘ōpala ia lā aku a ia lā aku, mana‘o ‘ia he ho‘olō‘ihī ka ho‘olaulā ‘ana o ka Māhele II/Cell i ke ola ho‘ohana o ka pu‘u ‘ōpala o kēia manawa no nā makahiki he nui hou aku. Na ka ho‘olaulā ‘ia ‘ana o ka Māhele II/Cell 3 e ho‘onui hou aku i kahi ho‘opiha o ka Māhele II ma luna pono o ka pu‘u ‘ōpala o ka Māhele I. ‘A‘ole i mana‘o ‘ia e ho‘okō ‘ia ka ho‘olaulā ‘ia ‘ana o ka Māhele II/Cell 3, akā, mana‘o ke Kalana e kūkulu i kekahī pu‘u ‘ōpala Subtitle D ma mua o ka piha ‘ana aku o ka Māhele II/Cell 2.

Ka Ho‘onui Hou ‘ana Ā Ki‘eki‘e Hou a‘e

Ma ‘Okakopa 2013, ua pa‘i ‘ia ka Final Environmental Assessment a me ka Final Environmental Assessment and Finding of No Significant Impact for Kekaha Landfill Phase II Vertical Expansion. ‘O ke kumu no ka hana i hāpai ‘ia, ‘o ia ka ho‘onui hou ‘ana i kahi o ka Māhele II/Cell 1 i ‘ae ‘ia ai ma ka palapala ‘ae i kēia manawa a me ka ho‘olaulā ‘ia ‘ana o ka Cell 2 i hāpai ‘ia, a pēlā e ho‘olō‘ihī ‘ia ai ke ola o ka pu‘u ‘ōpala o Kekaha. Pi‘i ka pono o kēia, no ka mea, wānana ‘ia e piha aku ka Māhele II o ka pu‘u ‘ōpala o Kekaha i ka hapa o hope o Malaki 2014, a ia manawa, ‘a‘ohe wahi pu‘u ‘ōpala o Kaua‘i kahi e waiho ai i ka ‘ōpala ma ke ‘ano palekana.

Ka Hanana Pani Pu‘u ‘Ōpala no ka Manawa

Ke pa‘a nā ‘ae i ke Kalana e ho‘omau i ka ho‘ohana ‘ia ‘ana o ka pu‘u ‘ōpala o Kekaha ā hala ka 2014, aia ā piha ke kūlana piha, na ke Kalana e ho‘okō i kekahī hanana pani no ka manawa. Ma ke pani ‘ia ‘ana, no ka ‘ona a me ka mea ho‘oholo o ka pu‘u ‘ōpala ke kuleana ‘o ke pani ‘ana i ka pu‘u ‘ōpala a me ka nānā ‘ana i ka wai o lalo o ka honua, ke ea methane, a me ke kahe ‘ana o ka mea wai, no ke kōā o ka manawa ‘a‘ole e emi ma lalo o 30 mau makahiki ma hope o ka pau ‘ana o ka ‘ae ‘ana o ka pu‘u ‘ōpala o Kekaha i ka ‘ōpala. Mana‘o ‘ia he 18 mau mahina paha ka lō‘ihī o ke kūkulu ‘ana e pani ai i ka pu‘u ‘ōpala o Kekaha a mana‘o ‘ia e ho‘omaka ‘ia ma waena o ka 2022 a me ka 2024.

3.8.2.2 Ka Pu‘u ‘Ōpala Hou he Subtitle D

Ma Ianuali 2013, ua pa‘i ‘ia ka palapala, ‘o ka Final Environmental Assessment/Environmental Impact Statement Preparation Notice for the New Kaua‘i Landfill and Resource Recovery Park. E pono ana kekahī pu‘u ‘ōpala hou i ka piha ‘ana o ka pu‘u ‘ōpala o Kekaha e ho‘okō ai i ka pahu hopu o ka hanana, ‘o ia ka hana ‘ana i ka mea e hiki ai ke kiloi ‘ia ‘ana o nā mea like ‘ole o ka ‘ōpala i hiki ‘ole ke ho‘ohana hou ‘ia, ho‘opō‘aiāpuni ‘ia, a i ‘ole ki‘i hou ‘ia. Aia i loko o ka hanana i hāpai ‘ia ke kūkulu a me ka ho‘oholo ‘ia ‘ana o kekahī pu‘u ‘ōpala a me kekahī RRP kekahī (Section 3.3.1).

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He mana‘o nō ke koho ‘ana o ka Kalana i kekahi wahi kūpono no ka pu‘u ‘ōpala hou no ka mokupuni holo‘oko‘a mai ka 2000, a pēlā e ho‘okaulike ‘ia ai nā mea e pono ai ma waena o ka ‘āina, nā hana mīkini, ka ho‘okele waiwai, a me nā hopena o ka lehulehu a me nā kaiāulu e ho‘opuni mai ana. Ma hope o ka ‘ae ‘ia ‘ana o ka EIS, pono e ho‘opa‘a ‘ia nā kuleana no ka ‘āina, a laila, pono e kaha ki‘i ‘ia, ‘ae ‘ia ka palapala ‘ae, ‘āpono ‘ia, a kūkulu ‘ia nā kahua i hāpai ‘ia ma mua o ka mākaukau ‘ana o ka pu‘u ‘ōpala no ka ‘ae ‘ana i ka ‘ōpala. Mana‘o ‘ia he mau makahiki ka lō‘ihī o ka hana holo‘oko‘a. Ua pili ka ho‘opau ‘ia ‘ana o ka hanana i hāpai ‘ia i ka manawa i kaupalena ‘ia ai i mea e hō‘oia ai he kūpono nō ka ho‘omalu ‘ia ‘ana o ka ‘ōpala ma ka mokupuni ke ho‘omaopopo ‘ia ke pani ‘ia ‘ana o ka pu‘u ‘ōpala o Kekaha i nā makahiki e hiki mai ana.

Ke hāpai aku nei ke Kalana e kūkulu a ho‘oholo ‘ia ka pu‘u ‘ōpala hou ma luna o kekahi ‘āpana ‘āina he 270 ‘eka ka nui ma kahi o Alanui Mā‘alo ma Kaua‘i. ‘O nā pono kūlanakauhale ma ia pu‘u ‘ōpala, ‘o ia nā alanui, nā uea uila, he ke‘ena, he wahi kū‘ai, he loko ho‘oki‘o wai hū, he loko ho‘oki‘o mea wai, he hale kaupaona, he wahi waiho ‘ōpala, a me nā alanui ma loko. Hiki ke kūkulu ‘ia ka RRP ma ka pu‘u ‘ōpala nō a i ‘ole ma kahi kokoke, ma luna o 80 ‘eka, ma kahi i ‘ona ‘ia, aia i ka hopena o nā kūkākūkā ‘ana ma waena o nā ‘ona ‘āina a me ke Kalana.

E kaha ki‘i ‘ia ka pu‘u ‘ōpala hou i hāpai ‘ia e ‘ae i ka ‘ōpala. ‘O kekahi mau ‘ano o ka ‘ōpala i hiki ke ‘ae ‘ia ma ia kahua, ‘o ia ke koena mea ho‘opō‘aiāpuni, a me ka ‘ōpala i ‘ae ‘ole ‘ia i ho‘ākāka ‘ole ‘ia ai kona ‘ano he ‘ōpala ho‘opilikia. ‘A‘ole e ‘ae ‘ia ka ‘ōpala ho‘opilikia ma ka pu‘u ‘ōpala. E hiki mai nā ‘ōpala mai kahi e ‘ohi ‘ia ai e ke Kalana, nā hui ‘ohi ‘ōpala i ‘ona ‘ia, nā hui halihali ‘ōpala o nā hale ‘ohana a me nā hui, nā hui hana ‘ōpala pa‘a, a malia paha mai nā kahua ho‘oponopono wai mea ‘ino mai nō kekahī.

I ka hiki ‘ana mai o ka manawa e holo ai ka hana, ‘o kēia pu‘u ‘ōpala hou wale nō ka mea e kō ai nā lula pekelala, ‘o ka Resource Conservation and Recovery Act (RCRA) Subtitle D. He kōkua kēia mau lula i kēia mau mea nei:

- Ke kūkulu a me ka ho‘oholo ‘ia ‘ana o ke kahua e like me nā ana no ke kaha ki‘i ‘ia ‘ana a me ka palekana
- Ka ho‘okō ‘ia ‘ana o kekahi papa hana ho‘oponopono a nānā wai honua
- Ka ‘ae ‘ia ‘ana o ka loko ho‘oki‘o mea wai ma ka pu‘u ‘ōpala a me ka nānā a me ka ‘ohi ‘ia ‘ana o ke ea
- Nā papa hana mālama ma ke pani a ma hope o ke pani ‘ia ‘ana
- Ka hō‘oia ‘ana he hiki nō i ka hui nānā e ho‘oholo i ke kahua ke ho‘opau a mālama i nā hana e pono ai ke pani ‘ia ‘ana a me nā hana e pono ai ma hope o ke pani ‘ana a me nā mea e pono ai ka mālama ‘ana

Ma loko nō ho‘i o nā koi no ka ho‘oholo ‘ia ‘ana o ka pu‘u ‘ōpala, e pono ana he pālulu ia lā aku a ia lā aku, ka pale ‘ana i kahi o ka heluna mea nānā e ho‘olaha i ka ma‘i (e like me ka ‘iole nui, ka ‘iole li‘ili‘i, a me ka nalo), ka nānā ‘ia ‘ana o ke ea methane, ka pāpā ‘ia ‘ana o ke komo ‘ana

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o ka lehulehu, ka pale ‘ana i ka lū ‘ōpala ‘ana, ka pale ‘ana i ka wai hū a wai kahe, ka pale ‘ana i ka wai ma luna o ka honua i ‘ole e haumia, a me ka mālama ‘ana i nā palapala kūpono. E koi ana nō ho‘i nā ana pekelala a moku‘āina e hana ‘ia kekahī pale no ka ‘ōpala i ‘ō‘ā ‘ia i hana ‘ia i kekahī ‘ano ‘ili ‘ea palupalu i kau ‘ia ma luna o kekahī ‘ili pālolo. Ma nā pu‘u ‘ōpala a pau, pono e loa‘a kekahī luawai nānā wai honua, a no ka ‘ona a me ka mea nāna e ho‘oholo ke kuleana e ho‘oma‘ema‘e i ka haumia ke loa‘a. Ma ke pani ‘ana, no ka ‘ona a me ka mea nāna e ho‘oholo ke kuleana e pani i ka pu‘u ‘ōpala me ka nānā pū i ka wai honua, ke ea methane, a me ka mea wai e kahe ana, no kekahī kōā o ka manawa he 30 makahiki ka li‘ili‘i loa ma hope o ka pau ‘ana o ka ‘ae ‘ia ‘ana o ka ‘ōpala ma ia pu‘u ‘ōpala. Mana‘o ‘ia e ho‘omaka ‘ia ke kūkulu ‘ia ‘ana o ka pu‘u ‘ōpala hou ma ke Alanui Mā‘alo i ka 2022.

3.8.2.3 Ka Papa Hana Ho‘omalu ‘Ōpala Pō‘ino

Ma Kepakemapa 1992 i ka pā ‘ana mai o ka makani pāhili, ‘o ‘Iniki, ma Kaua‘i nei, ua pi‘i he pālima ka nui aku o ka ‘ōpala i hana ‘ia i kekahī kōā o ka manawa he emi i ka 24 hola. Ia manawa, ua kokoke e piha ke kūlana piha o ka Māhele I o ka pu‘u ‘ōpala o Kekaha a ‘a‘ole i mākaukau ka hana ho‘omalu no kēia pi‘i hikiwawe ‘ana o ke kūlana piha. He ‘elua mau makahiki a ‘oi ka lō‘ihi o ka ho‘oponopono hou ‘ana a ‘o kekahī mea i a‘o ‘ia ma ia hana, ‘o ia ka pono o kekahī lula alaka‘i a me ka papa hana alaka‘i; ka mea e hiki ai ke hana me ka ‘āwīwī a me ka pololei ma ke kūkulu hou ‘ana i nā kahua kūikawā, ka ho‘okō ‘ana i nā palapala ‘aelike; a me ka ho‘olako ‘ana i ka papa hana a‘o a me ka ‘ike no nā limahana ho‘omalu ‘ōpala i ‘ole e pono ai e hana hou ‘ia nā hana like ‘ole. ‘O kekahī mea moakāka hou aku:

- Pono e loa‘a kekahī papa hana alaka‘i e ho‘oholo ai i nā limahana Kalana a me nā mīkini;
- Pono ‘ike ākea ‘ia nā lula alaka‘i a me nā palapala papa hana ma waena o nā limahana a pau ma ke ‘ano he ‘ākena ma lalo o ke Kalana a i ‘ole nā mea e lawelawē ana ma lalo o ke Kalana;
- Pono e ho‘ākāka ‘ia nā kahua kūikawā a ki‘i ‘ia i loko o nā hola kokoke ma hope o kekahī pō‘ino;
- Pono e pa‘a a mākaukau mua nā palapala ‘aelike no nā hana lawelawē a nā hui i ‘ona ‘ia. ‘O kēia mau hana, ‘o ia ka ho‘omalu ‘ia ‘ana o nā kahua, ka halihali ‘ana, a me ka ho‘oponopono ‘ana i nā ‘ōpala i ho‘ākāka ‘ia. ‘O ka hana wale nō a ka Meia, ‘o ia ka ho‘olaha ‘ana i ka ‘ōlelo e ho‘omaka i ka hana i mea e ho‘okō ‘ia ai i mau hana lawelawē, a
- Pono e mākaukau nā limahana o ka pu‘u ‘ōpala me ka mea e hiki ai ke ho‘oponopono i ka pi‘i hou ‘ana o ka ‘ōpala me ka pōkolo loa pū na‘e o ka ho‘omaopopo ‘ia ‘ana.

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‘O nā kumu waiwai o ke Kalana i loa‘a no ka ho‘omalu ‘ana i nā ‘ōpala pō‘ino, ‘o ia kēia mau ‘ano mea nui nei:

- Ka mea e hiki ai i ka pu‘u ‘ōpala e kū nei ke ‘ae i ka ‘ōpala
- Ka mea e hiki ai i ka pu‘u ‘ōpala o kēia mua aku ke ‘ae i ka ‘ōpala
- Nā kahua kiloi ‘ōpala
- Nā limahana a me nā luna o nā ‘oihana
- Nā mīkini hana me nā ‘ōpala pa‘a
- He kikowaena ho‘opō‘aiāpuni o Puhi (Puhi Recycling Center)

Ke hiki aku nei ka Māhele II pu‘u ‘ōpala o Kekaha i kona kūlana piha a ‘o ia ka pu‘u ‘ōpala ho‘okahi wale nō i pa‘a ai kona palapala ‘ae. Ma muli o ka mamao o ka pu‘u ‘ōpala mai kahi o ka nui loa o ka heluna kanaka ma ka mokupuni ma kekahi alaloa ma kapa kai, he pā mai nō ka makani ikaika, ka nalu a i ‘ole ke kai mimiki. Inā ‘a‘ole e kūkulu ‘ia kekahi pu‘u ‘ōpala hou, he maika‘i ke kūkulu ke Kalana i kekahi alanui hō‘alo ma kahi o Kekaha kahi i pili loa ai ke alaloa i kapa kai. He kōkua kēia alanui hō‘alo i nā kalaka nunui e hiki aku i ka pu‘u ‘ōpala me ka mā‘alo ‘ole aku i nā kaiāhome o Kekaha e pēlā e emi ai ka mea e pani ‘ia ai ke alanui ma muli o ka pā ‘ia e ka nalu nui i ka makani pāhili a i ‘ole ke kai mimiki. ‘O kekahi mea hou aku, ‘o ka hana e kū nei ma nā kahua kiloi ‘ōpala, he kauka‘i ma luna o ka uila uea e hana ai (koe ke kahua kiloi ‘ōpala ma Līhu‘e), a pau ka hana ma ia mau kahua i ka wā e pau ai ka holo o ka uila. He mana‘o maika‘i ke ho‘olako ke Kalana i nā mīkini hana uila i hiki ai ia mau kahua ke hana i ka wā nō o kekahi pō‘ino.

Ua ho‘opau ka Māhele ‘Ōpala Pa‘a i kekahi noi‘i ‘imi pu‘u ‘ōpala a ua loiilo ‘ia nā mana‘o like ‘ole i hāpai ‘ia no nā hana mīkini ‘oko‘a e ho‘ēmi ai i ka nui o ka ‘ōpala i kiloi ‘ia ma ka pu‘u ‘ōpala. Ke kūkulu ‘ia mai nei nō ho‘i kekahi pu‘u ‘ōpala. Ma ke ‘ano ma‘amau, mana‘o ‘ia he 5 paha makahiki ke kali ‘ana ma waena o ke kūkulu ‘ia ‘ana o kekahi pu‘u ‘ōpala a me kona ho‘oholo ‘ia ‘ana ma ke ‘ano he kahua ‘ohi ‘ōpala pa‘a. Ke nānā ‘ia nā mea e ‘āpono ‘ia ai ka pu‘u ‘ōpala i kēia manawa, i ka holo ‘ana o nā makahiki 4 a 5 paha e hiki mai ana, ‘a‘ole e loa‘a ana kahi nui kūpono ma ke Kalana nei e hana pono ai i ka wā o kekahi pō‘ino. Ā hiki mai ka manawa e ‘āpono ‘ia ai ka ho‘onui ‘ia ‘ana o ka pu‘u ‘ōpala o Kekaha a i ‘ole ke ho‘omaka ka hana ma kekahi pu‘u ‘ōpala, he mea pono e ho‘oponopono ‘ia kēia pilikia ma o kekahi o kēia mau hana, a i ‘ole ma ia mau hana nō a pau:

- Hō‘ike i nā wahi kūpono no nā kahua waihana a ‘ohi ‘ōpala no ka manawa ma kahi kokoke i kahi i hana ‘ia ai ka ‘ōpala.
- Kūkulu i nā ka‘ina hana no ka ho‘ohuli ‘ana i ka ‘ōpala huina nui, e like me ka ‘ōpala ‘ōma‘oma‘o, ka papa lā‘au, a me ka ‘ōpala i ‘ō‘ā ‘ia.

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- Ho‘okō i nā palapala ‘aelike no ka ho‘ohana hou ‘ana, ka ho‘opō‘aiāpuni ‘ana, a i ‘ole ka ho‘ēmi ‘ana i ka huina ‘ōpala.
- Ho‘olako i nā kahua kiloi ‘ōpala i ka mea e hiki ai ke ho‘oholo me ka uea uila ‘ole, a ho‘olako pū i nā pine e pa‘a pono ai ka pālulu ma luna o nā ka‘a halihali a me nā mīkini o ke Kalana.

Ma waho a‘e o ka papa hana ho‘oponopono pilikia, ua ho‘omākaukau ke Kalana i kekahi palapala, ‘o ka Disaster Debris Action Manual (DDAM) no ka ho‘ēmi ‘ana i ka hopena pilikia o kekahi pō‘ino ma ka ho‘omalu ‘ana i ka ‘ōpala a no ke kōkua ‘ana i nā luna aupuni o ke Kalana ma ka ho‘omākaukau ‘ana a me ka hana ‘ana i ka wā o ka pō‘ino e like me ka makani pāhili, ka wai hālana, a me ke kai mimiki.

Hō‘ulu‘ulu ‘ia ma lalo nei kēlā me kēia hana o ka papa hana:

- Ho‘ākāka i nā ‘oihana nui o ke Kalana a me nā kuleana o nā limahana no ke kūkulu a me ka ho‘oholo ‘ia ‘ana o ka DDAM, a me ke kuhikuhi ‘ia ‘ana o kekahi luna ho‘omalu ‘ōpala o Kaua‘i (Kaua‘i Debris Management Coordinator: DMC), ‘o ia ho‘i ka mea nona ke kuleana ma luna o nā hana ho‘omalu ‘ōpala a pau i pili i nā pō‘ino.
- Kuhikuhi i kekahi pū‘ulu ho‘omalu ‘ōpala pō‘ino nona ke kuleana e ho‘omalu i ka ‘ōpala, ka hana kupakako, ka hai ‘ana ma ka palapala ‘aelike a me nā hana ā puni ka mokupuni e pili ana i ka ho‘okō ‘ia ‘ana o ka DDAM.
- Ho‘ākāka i nā kahua waihona ‘ōpala ā puni ke Kalana no ke kumu ‘o ke kuhikuhi ‘ana i nā mīkini, nā hui i hai ‘ia a me nā kahua waihona a ho‘ēmi ‘ōpala no ka manawa (Temporary Debris Storage and Reduction sites: TDSR).
- Hō‘ulu‘ulu i ka huina ‘ōpala a me ka mea i hana ‘ia ai ka ‘ōpala no ka “hanana i ho‘olālā ‘ia ai” (“design event”), he makani pāhili o ke kūlana 4.
- Ho‘omākaukau i nā ka‘ina hana ho‘omalu ‘ōpala a me nā hana ‘oi loa no ka ho‘omalu ‘ana i nā ‘ano ‘ōpala pō‘ino like ‘ole.
- Ho‘oholo i nā ka‘ina hana no ka hana ‘ana me nā ‘ōpala ‘a‘ole he ‘ōpala pō‘ino.
- Ho‘oholo i nā koi no nā pono kūlanakauhale no ka hana ‘ana i nā hana e pono ai ka pō‘ino.
- Ho‘ākāka i ke ka‘ina o nā hana e hana ai i ka wā nō o nā ‘ano pō‘ino like ‘ole.
- Ho‘ākāka i nā wahi e koho ai i kahua waihona ‘ōpala me ke ki‘i hou no ka manawa.

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‘A‘ole i ho‘ohui ‘ia i loko o ka DDAM ke kūkulu ‘ia ‘ana o nā palapala ‘aelike ho‘omalu ‘ōpala, ‘oiai loa‘a nā kope ho‘ā‘o o nā palapala ‘aelike ma loko o ka Papa Hana o ka Moku‘āina ‘o Hawai‘i (Hawai‘i State Plan); akā na‘e, he mana‘o maika‘i ke hana ke Kalana i nā ‘aelike me nā hui ho‘olako limahana a me nā mīkini i mea e hō‘oia ai he loa‘a nā hana lawelawe i ka wā o kekahi pō‘ino. He mana‘o maika‘i nō ho‘i e ho‘opa‘a i nā palapala ‘aelike me nā ‘ona o nā kahua TDSR ma mua o ka loa‘a i ka pō‘ino i mea e holo pono ai ke ho‘okō ‘ia ‘ana o ka DDAM ma hope o ka pō‘ino.

3.9 Nā Hana Kiloī ‘Ōpala Like ‘Ole

Ua loiloi ke Kalana i nā hana like ‘ole i lalo o ke ka‘ina holo ‘ōpala, ‘o ia ho‘i nā ‘ano hana ma waho a‘e o ke kiloi ‘ia ‘ana o ka ‘ōpala ma ka pu‘u ‘ōpala, i mea e ho‘omalu ‘ia ai ka māhele o ke ka‘ina holo ‘ōpala pa‘a o Kaua‘i i mana‘o ‘ole ‘ia ai no luna o ke ka‘ina e ho‘ēmi ‘ia ai, ho‘ohana hou ‘ia ai, a ho‘opō‘aiāpuni a hana ‘ia ai paha i mea ho‘opulupulu. Ke nānā aku nei ke Kalana nā hana like ‘ole i kēia manawa ma waho a‘e o ke kiloi ‘ōpala ‘ana ma ka pu‘u ‘ōpala, e like me kēia mau mana‘o:

- Kahua Puhi Mea Ola;
- Ke ea pu‘u ‘ōpala i uila (Landfill Gas to Energy: LGtE);
- Ka ‘ōpala i uila (Waste-To-Energy: WtE); a me ka
- ‘Ōpala i ‘aila (Waste to Fuel: WtF).

3.9.1 Ke Kahua Puhi Mea Ola

Ua ho‘okumu ka Hawai‘i Bioenergy, LLP i kekahi hanana pu‘u mea ola i ‘aila ma Kaua‘i i hō‘ike ‘ia ma ka inoa ‘o ka Hawai‘i BioFuel Supply Project. Ua mana‘o ‘ia ma kinohi he hiki nō ke kūkulu ‘ia kahua puhi pu‘u mea ola ma ka RRP e ho‘omakaui‘i ai ke Kalana i ke kālā. Ma ‘Aukake 2011, ua ho‘okō kēia hui i kekahi palapala ‘aelike ho‘olako ‘aila mea ola me ka Hawaiian Electric Company (HECO). Pono e holo ka hana o ke kahua ma loko o 60 mau mahina mai ka ‘āpono ‘ia ‘ana mai o ka palapala ‘aelike. I loko o kēia kōā manawa he 60 mahina, pono e ho‘omaka ka Hawai‘i Bioenergy i nā mahi pu‘u mea ola lā‘au kūpono (‘o ia ho‘i he kumulā‘au), a kaha ki‘i, ‘ae, kūkulu, a ho‘āmana i ke kahua puhi mea ola ma mua o ka ho‘oponopono ‘ana. ‘Oiai mana‘o ‘ia ‘a‘ole e ho‘opau ‘ia ka RRP i loko o ia kōā manawa, ‘a‘ole paha e hiki ana ke kūkulu i ke kahua ma ka RRP.

Ka Pili me ke Ka‘ina Holo ‘Ōpala o Kaua‘i

He ‘i‘ini ka Hawai‘i Bioenergy e ho‘oulu i ka pu‘u mea ola ma Kaua‘i a ho‘oponopono i ka pu‘u mea ola ma o kekahi hana mīkini e like me ka ho‘olilo ‘ana i ea a i ‘ole ka AD i mea e hana ai i ka ‘aila mea ola a i ‘ole ka hana ‘ana i ka uila. E holomua ka hanana ma luna o nā ‘āina i ‘ona ‘ia ma kahi kokoke i ka pu‘u ‘ōpala me ka RRP i hāpai ‘ia. He kuleana nō paha ko ka Bioenergy ma

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ka ‘ae a me ka ho‘oponopono ‘ana i nā ‘ōpala pepa a pau i loa‘a mai ke Kalana mai, aia i ke kūlana pono o ka pepa, ka huina a me ke ‘ano o nā mea ho‘ohaumia ma loko (e like me ke kui ‘ūmi‘i pepa), ke kawa‘ū (e like me ka mea‘ai, ka ‘ōpala mea‘ai), a me ka waiwai mākeke o ka pepa. Akā na‘e, ‘oi aku ka makemake ‘ia o ka pu‘u mea ola ho‘okahi nō ona ‘ano no kēia hana, a e like ka huina pepa i loa‘a mai ke Kalana mai me 5-10% paha o kā lākou huina e ho‘okomo ai.

Ka Mea e Hiki ai ke Ho‘ohuli i ka ‘Ōpala

He wahi kēia kahua e hiki ai i ke Kalana e ho‘ohuli i kahi o 30,000 TPY ‘ōpala i kēia mua aku, ‘o ia ho‘i kahi o 21% o kona ka‘ina holo ‘ōpala, ke no‘ono‘o ‘ia nā kumu ‘ōpala mai nā hale ‘ohana a me nā hui hana.

3.9.2 Ke Kahua Ea Pu‘u ‘Ōpala i Uila

Hana ‘ia ke ea pu‘u ‘ōpala (landfill gas: LFG) me ka palahō ‘ana o ka ‘ōpala mea ola ma kekahī pu‘u ‘ōpala pa‘a kaona. He huihuina ia i hiki ke ‘ā ‘ia a hana ‘ia i ke ea methane a me ke carbon dioxide, a ‘o ka hana ma‘amau, ‘ohi ‘ia a puhi ‘ia i ke ahi e ho‘opau ai i ka hohono, a hiki nō ke ho‘ohana ‘ia no ka hana uila. Hiki ke pōmaika‘i ke Kalana i ke kahua hana uila LFGtE ma nā ‘ano like ‘ole. He mea ia e ho‘omalu ai i ke ea pu‘u ‘ōpala ma kekahī ‘ano e hiki ke ho‘omau ‘ia ai me ka hana uila pū no kahi o 2,200 mau home ka palena nui loa a he \$6.96 miliona i ‘ohi ‘ia i kēlā me kēia makahiki i nā makahiki e hiki mai ana. Paipai ‘ia e ho‘ohui ‘ia kēia ‘ano kahua i loko o ka RRP.

Aia ma kahi o ka \$2.32 miliona ka nui o ka lilo no ke kūkulu ‘ana i kēia kahua no ka māhele mua, me ka pi‘i hou ‘ana ā hiki i \$6.96 miliona ke piha pono ke kūlana piha o ka hana. Aia ma kahi o \$133,000/makahiki ka nui o ka lilo no ka ho‘oholo a me ka mālama ‘ana i kēia kahua no ka māhele mua, a pi‘i hou ā \$312,000/makahiki ke piha pono ka hana.

Ka Pili i ke Ka‘ina Holo ‘Ōpala o Kaua‘i

Me kona ho‘ohuli ‘ole ‘ana nō ho‘i i ka ‘ōpala i kahi ‘ē, he mau pōmaika‘i nui nō i ke kahua LFGtE. Hiki ke ‘ohi a puhi ‘ia ke ea methane i hana ‘ia e ka pu‘u ‘ōpala ma kekahī ‘ano e hiki ai ke hana ‘ia ka uila. Ma muli o ke kuhi ‘ana no ka nui o ka ‘ōpala e kiloi ‘ia ai ma ka pu‘u ‘ōpala hou o Mā‘alo, mana‘o ‘ia he ho‘omalu ke kahua LFGtE i ke ea pu‘u ‘ōpala ma kekahī ‘ano e hiki ai ke ho‘omau ‘ia ma ka ‘ohi a me ke puhi ‘ana i ke ea pu‘u ‘ōpala ma kekahī hana i hiki ke ho‘omalu ‘ia.

Ka Mea e Hiki ai ke Ho‘ohuli ‘ia ka ‘Ōpala

Inā ho‘okumu ‘ia kekahī hanana LFGtE he 3.75-MW (megawatt) ma ka pu‘u ‘ōpala i hāpai ‘ia ma Mā‘alo, pēlā e emi mai ai ka nui o ka uahi i ho‘opuka ‘ia ā kahi o 158,000 kana mekele carbon dioxide o ka makahiki, a hana ‘ia ka uila nui kūpono no kahi o 2,200 home “ma‘amau”. Kuhi ‘ia ‘o ka nui o ke kālā i ‘ohi ‘ia ma ke ku‘ai ‘ia ‘ana o ka uila, inā he \$0.13/kW-hola (ke kumu kū‘ai i hō‘ike ‘ia i loko o ka ISWMP), ua like kēlā me \$1.73 miliona o ka makahiki no ka māhele mua (1.6 MW) a pi‘i hou ā ka \$4.0 miliona o ka makahiki ke holo ma ke kūlana piha nui

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loa (3.75 MW). ‘A‘ole kōkua ka LFGtE i ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala i kahi ‘ē. ‘O ka pololei, he emi ka nui o ka uila i hana ‘ia ma ke kahua LFGtE i ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala mea ola mai ka pu‘u ‘ōpala aku.

He mea nui ka ho‘omaopopo ‘ana, ma muli o ke kuhi ‘ana no ka lō‘ihī o ke ola o ke kahua pu‘u ‘ōpala (ma kahi o 264 makahiki), ‘a‘ole e loa‘a ke kūlana piha he 3.74-MW o ka uila i hana ‘ia no kekahi wā ‘ano lō‘ihī nō. Akā na‘e, ‘o kekahi pōmaika‘i no nā hanana me nā mīkini he nui me kēia ‘ano, he hiki ka ho‘onui hou ‘ia ka mea e hiki ai ke hana i ka uila ma ka māhele he 1.3-1.6 MW ka nui i ka loa‘a ‘ana o ka LFG nui kūpono. ‘O ka mana‘o nui o ka loa‘a o kekahi kahua he 264 makahiki ka lō‘ihī o ke ola, ‘o ia ho‘i, he hiki ke hō‘ā ‘ia ‘ekolu mau mīkini hana uila i ho‘olālā ‘ia ma kahi o ka ‘ahiku o ka makahiki o ka holo ‘ana o ka pu‘u ‘ōpala, hiki ke ho‘ohui ‘ia mai ka ‘alua o ka mīkini hana uila ma kahi o ka 18 o ka makahiki, a hiki ke ho‘ohui ‘ia mai ka ‘akolu o ka mīkini hana uila ma kahi o ka 97 o ka makahiki o ka holo ‘ana o ka pu‘u ‘ōpala. I loko o ka wā ma hope o ke pani ‘ia ‘ana o ka pu‘u ‘ōpala (ma hope o ka ‘ae ‘ia ‘ana mai o ka ‘ōpala), hiki nō ho‘i ke ho‘opau ‘ia nā mīkini hana uila ‘ekolu, i ka emi pū ‘ana o ke ea pu‘u ‘ōpala.

3.9.3 Ka ‘Ōpala i Uila

‘O ka ‘ōpala i uila (Waste to Energy: WtE), o ‘ia ke ki‘i hou ‘ana i ka uila e hana ‘ia ai ka uila a i ‘ole ka wela ma ke puhi ‘ia ‘ana o ka ‘ōpala. Hiki i nā mīkini puhi o kēia wā hou ke ho‘ēmi i ka nui o ka ‘ōpala i ‘ohi ‘ia ā hiki i ke 95%, aia i ke ‘ano o ka mea i hana ‘ia ai ka ‘ōpala a me ka nui o ke ki‘i hou ‘ia ‘ana o ka ‘ōpala, e like me ka ‘āpana mea hao mai ka lehu mai no ka ho‘opō‘aiāpuni ‘ana. Loa‘a nā ‘ano hana mīkini i ho‘okumu ‘ia ma luna o ka wela i hiki ke ho‘ohana ‘ia ma kekahi kahua WtE, e like me ke puhi ‘ana i ho‘ēmi ‘ia ai ke ea (‘o ia ho‘i ke puhi ‘ana ma nā māhele he nui), ke puhi ‘ia ‘ana o ka pu‘u (‘o ia ho‘i ke puhi ‘ana ho‘okahi manawa), ka loko i hana ‘ia ai ia mea wai, ka ‘oma niniu. ‘O ka mea e ‘oko‘a ai nā hana mīkini, he ua pili i ka hana ‘ana o kēlā me kēia ‘aha hana a ua pili i nā mea like ‘ole e like me ka piha o ka oxygen i loko o ka hana a me ka nui o ka wela. He pono ke koho ‘ia ke ‘ano o ka hana mīkini ma muli o ka huina ‘ōpala i mana‘o ‘ia ai a me ka mea i loa‘a i hana ‘ia ai ka ‘ōpala.

No kekahi kahua WtE e ‘ae ana ma kahi o 80,000 TPY ‘ōpala, kuhi ‘ia nā lilo o ke kumu waiwai he \$120-\$125 miliona, me ka pi‘i pū o ka lilo ā kahi o ka \$150 miliona no kekahi kahua WtE e ‘ae ana 100,000 TPY ‘ōpala. ‘O nā ‘ano lilo no ka O&M, ‘o ia ho‘i, ‘o ka hana, nā lā‘au, ka ho‘opā ‘ana i nā koena, ka mālama mau ‘ana, a me nā mea e ho‘ohana ‘ia ai, a aia ma kahi o \$120 miliona o ke kana, ka loa‘a mai ke kālā i ‘ohi ‘ia ai i ke kū‘ai ‘ia ‘ana o ka uila, ‘a‘ole na‘e i hui ‘ia i loko o kēia ke kiloi ‘ia ‘ana o nā koena. Ma ka ho‘ohālike ‘ana, ua kuhi ka ISWMP i ka lilo kumu waiwai he \$46-\$52 miliona a me nā lilo o ka makahiki he \$8-\$9 miliona, hui pū ‘ia me ka hana lawelawe ‘ai‘ē ma muli o ka ho‘okomo ‘ia ‘ana he 40,500 TPY, ‘o ia ho‘i he emi i ka hapalua o nā koena i loa‘a ma ka mokupuni. Ua kuhi ka ISWMP i ka lilo o ke kana, ‘o ia ka loa‘a o ke kālā ‘ohi ‘ia no ka uila, he \$121-\$139 o ke kana.

I mea e ho‘opukapuka ai i ke kahua WtE, pono e mālama ‘ia he noi‘i ho‘olako ‘aila (ka mea i hana ‘ia ai ka ‘ōpala) e kuhi ai i ke kūlana pono a me ka nui o ka ‘ōpala i loa‘a i ‘aila no ke kahua WtE. E kūkulu ‘ia ke ki‘i ma luna o ka ‘ike i loa‘a i ka wā e hana ‘ia ana ka noi‘i ho‘olako

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‘aila. Ma hope o kēlā hana, hiki ke mālama ‘ia he wehewehe ‘ano ho‘okele waiwai kahi i kūkulu ‘ia ai kekahī papa hana no ke kumu ‘o ka hō‘ulu‘ulu ‘ia ‘ana o nā kumu kāki i kuhi ‘ia ai, ka nui o ka ‘ai‘ē, ka waiwai loa‘a i kuhi ‘ia ai, ka loa‘a o ka po‘e ho‘opukapuka, a me nā mana‘o like ‘ōle nō ho‘i i pili i ka waiwai puka, ma ka hō‘ike ‘ana i nā kuhi pili i ka hana mīkini a me nā lilo. Ho‘ohana ‘ia kēia ‘ike i kumu no ka ho‘oholo ‘ana inā ‘o ka WtE ka hana kūpono loa no ka ho‘omalu ‘ana i kekahī o nā ka‘ina holo ‘ōpala ma ka mokupuni. E waiho ‘ia ke koena ‘ōpala i ho‘oponopono ‘ole ‘ia ma o ke kahua WtE, hui pū ‘ia me ka lehu i pau i ke puhi ‘ia, ma ka pu‘u ‘ōpala. Ma muli o ka mea i ‘ike ‘ia ma O‘ahu, hiki i ka Papa Ola ke koi i ke Kalana e ho‘oholo i kekahī māhele o ho‘okahi wale nō ‘ano ma ka pu‘u ‘ōpala e mālama ai i ka lehu ma kahi ka‘awale mai nā ‘ano ‘ōpala ‘ē a‘e. ‘A‘ole i paipai ‘ia ke kahua WtE i kēia manawa i māhele o ka RRP.

Ka Pili i ke Ka‘ina Holo ‘Ōpala o Kaua‘i

He mau pōmaika‘i nō ma o ka WtE i hiki ai ke ho‘ohana ‘ia ke koena ‘ōpala i mea e ho‘olako ai i ka uila. Ma waena o ka wānana no ka huina ‘ōpala e hana ‘ia ai no ka makahiki, he kuhi ke Kalana aia ma kahi o 80,000 TPY (kuhi ‘ia i mea e ma‘alahi ai ka hō‘ulu‘ulu ‘ana) koena ‘ōpala i hiki ke ho‘ohana ‘ia no ke kahua WtE i ka hiki ‘ana mai o ka 2035. Hiki ke kuhi ‘ia ka mea e hiki ai ke hana ‘ia ka uila ma ka ho‘ohana ‘ana i kēia mau hana hō‘ulu‘ulu. Ma ka ho‘ohana ‘ana i ka waiwai kaha ki‘i he 80,000 TPY ‘ōpala, a ma ke kuhi ‘ana he mau ka holo o ke kahua no 7,900 hola o ka makahiki (hola/mh) (‘o ka hana ma‘amau, holo nā kahua WtE 7,800-8,000 hola/mh), a laila, ‘o ka ‘ōpala e ho‘okomo ‘ia, ua like me 10.13 kana o ka hola, ‘o ia ho‘i 2.81 kilogram o ke kekona (kg/kek). Hō‘ike ‘ia ua no‘ono‘o ka ISWMP no kekahī kahua WtE he 40,500 kana e kūpono ai ke ka‘ina holo ‘ōpala o ka hale ‘ōhana.

Aia ka holo pono ‘ana o ke kahua WtE i ke ki‘i i kaha ‘ia; akā na‘e, hiki ke kuhi ‘ia e holo ke kahua ma ke ‘ano holo pono he 25% ka huina uila loa‘a a he 28% huina uila piha. No ke kumu o ka ho‘opuka ‘ana i kekahī heluna hana uila i kuhi ‘ia, hiki ke ho‘ohana 25%. Inā pēlā, hana ‘ia ka uila he 26.72 MJ/kek (MW) × 25% = 6.68 MW/kekona × 7,900 hola o ka makahiki = 52,780 MW-hola o ka makahiki (waiwai loa‘a).

Ka Mea e Hiki ai ke Ho‘ohuli ‘ia ka ‘Ōpala

Hiki ke ho‘oponopono ke kahua WtE ā hiki i ke 80,000 TPY (‘o ia ho‘i, 53% o ke ka‘ina holo ‘ōpala) i ka hiki ‘ana mai o ka pau ‘ana o ka wā ho‘olālā. Ma ka ‘ae ‘ana 25% ‘ōpala hiki ‘ole ke ‘ā ‘ia, hiki ke ho‘ohuli ‘ia 60,000 kana ‘ōpala mai ka pu‘u ‘ōpala aku.

3.9.4 Ke Kahua ‘Ōpala i ‘Aila

‘O ka hana ‘ōpala i ‘aila, ‘o ia ka ho‘oponopono ‘ana i ka ‘ōpala e hana ai i ka ‘aila a me ka ho‘ohana pū aku ia ‘aila e pani ai i kekahī ‘ano ‘aila i ho‘ohana ‘ia no ka hana ‘ana i ka uila, ‘o ia ho‘i, no ka hui hana mea kū‘ai, ka hui hana, a i ‘ole ke kikowaena hana (e like me ka hana ‘ana i ka uila a i ‘ole ka ho‘owela wai). He ‘elua mau ‘ano hana ‘ōpala i ‘aila kēia:

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- Ho‘okahi o nā ‘ano hana hui hana he nui e hana ai i kekahi ‘ano ‘aila i hana ‘ia mai ka ‘ōpala mai (refuse-derived fuel: RDF), ‘o ka māhele hope o kēia hana, ‘o ia paha ka ‘ōpā ‘ia ‘ana o ka RDF a hana ‘ia i ‘ana‘ana (Section 3.8.4.1).
- Ka hana ‘ia ‘ana o ka pyrolysis i ea, a pēlā e hana ‘ia ai kekahi ea i hana ‘ia (“syngas”) (Section 3.8.4.2).

3.9.4.1 Ka Hana ‘Aila Mai ka ‘Ōpala mai

‘O ka hana ‘aila mai ka ‘ōpala mai (Refuse Derived Fuel: RDF), ‘o ia ka ‘aila ma nā ‘ano like ‘olei loa‘a mai ka ‘ōpala mai. Ho‘ohana pinepine ‘ia kēia ‘ōlelo RDF no ka ‘ōpala pa‘a i ho‘oponopono ‘ia ai me ka mīkini e hana ai i ka ‘aila i hiki ke waiho a halihali koke ‘ia he ho‘okahi wale nō ona ‘ano, a no laila, he kūpono nō no ke puhi ‘ia ‘ana. ‘Elua nō mau māhele o ka RDF: ka hana ‘ia ‘ana a me ke puhi ‘ia ‘ana. Hana ke kahua hana RDF i ka RDF ma nā ‘ano like ‘ole ma o ka waewae ‘ana, ka ho‘ēmi ‘ana i ka nui, a me ka hana ‘ana i ‘ana‘ana. Me ka pōmaika‘i nō o ka hana RDF ma wehe ‘ana i nā mea ho‘opō‘aiāpuni a me nā mea haumia mai ke ka‘ina holo ‘ōpala aku, he pi‘i ka lilo ma ka ho‘oholo ‘ana a me ka mālama mau ‘ana a he emi ka mea e hiki ai ke hilina‘i i ka hana ma ke kahua hana RDF. Ma ka ‘awelika, he ‘oi a‘e ka lilo o ke kumu waiwai a me ka ho‘oholo ‘ana no ke kūlana piha o ke kana no nā mīkini puhi e ho‘ohana ana i ka RDF ma mua o nā koho ‘ē a‘e no ke puhi ‘ana.

‘O ka RDF i hana ‘ia, he ‘ana‘ana a i ‘ole he pepa a i ‘ole he ‘ea i ‘ōpā ‘ia kona ‘ano ma‘amau, a kū‘ai ‘ia ma ka mākeke nā kahua hana uila e ho‘ohana nei i ka hana mīkini ho‘olilo wai (fluidized bed). ‘O ka mea ma‘amau, hana ‘ia ka RDF ke ka‘awale loa ka mākeke ma kahi mamao mai kahi e hana ‘ia ka ‘ōpala a pono e halihali ‘ia ka ‘ōpala ma kahi mamao.

3.9.4.2 Ka Hana Ea/Puhi Mea Ola

‘O ka hana ea, ‘o ia ke puhi hapa ‘ana, a pēlā e hana ‘ia ai kekahi ea i hana ‘ia (syngas) i hiki ke ho‘oholo i kekahi ‘enekini ‘a‘ā koke ma loko, ka pela hana uila, a i ‘ole ka pahu wai wela, ke nui loa ke ea. Hiki ke hana ‘ia pēia no ka ho‘olilo ‘ana i ka ‘ōpala pa‘a o ke kaona i ‘aila ea.

Ua ‘ano like nō ka pyrolysis me ka hana ea ‘ana koe no ka mea nāna e ho‘owela. Ho‘ohana ka hana pyrolysis i kekahi mea ho‘owela no waho e ho‘oholo ai i ka hana, akā, ho‘ohana ka hana ea ‘ana i ka wela o ka ‘ōpala. ‘O ka mea ma‘amau, ho‘oponopono ‘ia ka hana ea ‘ana no ka ho‘onui ‘ana i ke ea ‘aila a he kūpono ka pyrolysis no ka hana ‘ana i ka ‘aila mea wai. ‘A‘ole nui ka ho‘ohana ‘ia ‘ana o ka pyrolysis no ka ‘ōpala pa‘a i ‘ō‘ā ‘ia, aia ma Iapanaka nui.

Ka Mea e Pili ai i ke Ka‘ina Holo ‘Ōpala ma Kaua‘i

Ma muli o ka emi o nā mākeke no ke kū‘ai ‘ana i ka mea RDF ma Kaua‘i i kūpono no ke puhi ‘ia ‘ana o ka ‘ōpala, ka pōkole o ka hiki ‘ana i nā mākeke o nā ‘ano ‘aila like ‘ole i hiki ke loa‘a inā loa‘a, ka ho‘ohuli ‘ole ‘ana o ka hana ‘ana i ka RDF i ka ‘ōpala i kahi ‘ē koe ke loa‘a kekahi mākeke no ka mea RDF, a me nā lilo o ka māhele no ka ho‘omalu ‘ana i ka ‘ōpala, ‘a‘ole kēia he māhele i paipai ‘ia no ka RRP.

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Ma ke ‘ano laulā, he hō‘ike ka ‘ike i loa‘a no nā kahua e kū nei he nui loa ka mea e hiki ai ke lilo ma ke kauka‘i ‘ana ma luna o nā hana mīkini hana ea/pyrolysis e ho‘omalu ai i ka ‘ōpala o Kaua‘i, a ‘a‘ohe o mākou mana‘o e paipai i kēia mau hana i kēia manawa ma ke ‘ano he ha‘ina hana pono i hiki ke kauka‘i ‘ia.

Ka Mea e Ho‘ohuli ‘ia ai ka ‘Ōpala i Kahi ‘E

Ua kuhi ‘ia ma ka hahai ‘ana i ka ho‘ohuli ‘ia ‘ana o nā mea ho‘opō‘aiāpuni o ka hale ‘ohana a me ka hui hana, hui pū ‘ia me nā ‘ōpala mea ola a me nā ‘ōpala ‘a‘ole i ‘ohi ‘ia ma ka‘e alanui (e like me ka HHW, ka taea, ka ‘āpana mea hao, ka mea uila, ka ‘ōpala C&D o ka hale ‘ohana), hiki ke loa‘a ma kahi o 55% o ke ka‘ina holo ‘ōpala holo‘oko‘a no ka ho‘okomo ‘ia ‘ana i loko o kekahī hana ho‘owela. He mea ma‘amau ke kuhi ‘ana he mea puhi ‘ole ‘ia ma kahi o 25% o ke ka‘ina holo ‘ōpala ma ke kaumaha a he pono ka ho‘omalu hou ‘ana ma ke ‘ano he koena (‘o ia ho‘i, ‘o ka hana ma‘amau, ‘o ia ka waiho ‘ia ‘ana o ka lehu keu, e like me ia i hana ‘ia ma O‘ahu). No laila, hiki ke like ka huina nui o ka ho‘ohuli ‘ia ‘ana o ka ‘ōpala ma kekahī kahua ‘ōpala i ‘aila me 41% o ke ka‘ina holo ‘ōpala holo‘oko‘a.

3.10 Ka Hō‘ulu‘ulu no ka Papa Hana no ka Wā Lō‘ihī

3.10.1 Ka Ho‘ēmi Kumu ‘Ōpala

- Ho‘omaka e hana me nā kalana like ‘ole o Hawai‘i e ho‘okumu ai i nā kānāwai Extended Producer Stewardship legislation ma Hawai‘i nei;
- Paipai a ho‘onui i ka polokalamu ‘eke huluhulu e pani ai i nā ‘eke kū‘ai i hiki ke kiloi ‘ia me nā ‘eke huluhulu;
- Paipai i nā kānaka noho e kū‘ai i nā mea kū‘ai, e like me ka lā‘au ho‘oma‘ema‘e, me nā pilikia he li‘ili‘i no ke olakino a i ‘ole ka ‘āina;
- Ho‘ona‘auao i nā kānaka noho no nā lilo no ka ‘āina a me ka ho‘okele waiwai o ka aupuni i pili i ka hana ‘ia ‘ana a me ka ho‘omalu ‘ia ‘ana o ka ‘ōpala pa‘a;
- Hana me nā kula no ka ho‘ohui ‘ia ‘ana o ka ho‘ona‘auao ‘ana no ka ho‘ēmi ‘ōpala i loko o ka papa ha‘awina.
- Ho‘omaka i ke kūkulu ‘ia ‘ana o kekahī polokalamu ‘Ohi ‘Ai/Uku ma ke Kiloī ‘ana (Unit Based/Pay-As-You-Throw: PAYT) me nā lula alaka‘i no ke kāki ‘ana a me nā pono ho‘ona‘auao no ka ho‘okō ‘ana i ka polokalamu; a
- Ho‘okumu i kekahī polokalamu ‘ohi PAYT i ho‘ohuihui ai e uku ai nā kānaka noho a pau i kekahī kumu kāki ma ka māhele ke pono iā lākou ka ‘oi a‘e i ka ho‘okahi ka‘a no ka ‘ohi ‘ana i ka ‘ōpala ma ka pule.

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3.10.2 Ka Ho‘opō‘aiāpuni me ka Ho‘ololi Mea Ola

3.10.2.1 Ka Ho‘opō‘aiāpuni

- Kūkulu i kekahi Kahua ‘Ohi Mea Ho‘opō‘aiāpuni i ‘ona ‘ia e ke Kalana (Materials Recovery Facility: MRF);
- Mālama i ka ‘ohi mea ho‘opō‘aiāpuni ma ka‘e alanui ma nā hale ‘ohana i kēlā me kēia ‘elua pule, me kekahi ‘ano polokalamu PAYT i ho‘ohuihui ‘ia ai;
- Ho‘onui i ka ho‘opō‘aiāpuni ‘ana o nā hui hana ma o nā kānāwai, ke kōkua hana mīkini, a me nā hana lawelawe;
- Ho‘onui i ka ho‘opō‘aiāpuni ‘ana o nā malihini kipa;
- Kōkua i ka ho‘opō‘aiāpuni ‘ana ma nā hanana kūikawā;
- Kūkulu i kekahi pāka ‘ohi kumu waiwai ma lalo o ke Kalana (Resource Recovery Park: RRP); a
- Kōkua i nā hanana ho‘opō‘aiāpili akamai ma ka ho‘olako kālā ‘ana.

3.10.2.2 Ka Ho‘ololi Mea Ola

- Kūkulu i kekahi hana ‘ohi kū pule no ka ‘ōpala mea kanu, me ka hana mīkini ‘ohi ‘ōpala;
- Ho‘onui i ka pāpā ‘ia ‘ana o ke kiloi ‘ia ‘ana o ka ‘ōpala mea kanu o nā hale ‘ohana ma ka pu‘u ‘ōpala ma Kaua‘i no ka ‘ōpala o nā hale ‘ohana pū kekahi a ho‘onui i ka pāpā ‘ia ‘ana ma nā kahua kiloi ‘ōpala kekahi;
- Ho‘okumu i kekahi kahua ho‘oponopono e hana ‘ia ai ka mea ho‘opulupulu;
- Mālama i ka ‘ohi ‘ana ma ka‘e alanui no ka ‘ōpala mea‘ai i hana ‘ia ma mua o ke kū‘ai ‘ia ‘ana ma nā hui hana;
- Kōkua i nā kahua i ‘ona ‘ia ma ka hana ‘ana i ka mea‘ai i mea ho‘opulupulu;
- Kūkulu i nā mea e pono ai ka polokalamu “‘ōpala mea‘ai i mea‘ai holoholona” ā nui hou aku;
- Paipai i ka ho‘ohana hou ‘ia ‘ana o nā pā halihali ukana nui; a

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- Loiloi i ka mana‘o e ho‘onui hou ‘ia a‘e ka hana ‘ohi mīkini ‘ana i ka ‘ōpala no ka ‘ōpala mea kanu a me nā mea ho‘opō‘aiāpuni kekahi.

3.10.3 Ka ‘Ōpala Kūikawā

- Kūkulu i kekahi kahua ‘ōpala kūkulu a wāwahi hale; a
- Kūkulu i kekahi kahua ‘ohi taea i pau ka ho‘ohana ‘ia.

3.10.4 Ka ‘Ōpala Ho‘opilikia ma ka Hale a me ka ‘Ōpala Mīkini Uila

- Kūkulu i kekahi kahua waihona ‘ōpala ho‘opilikia o ka hale; a
- Kūkulu i kekahi kahua waihona mea uila.

3.10.5 Ka Māhele Ho‘ona‘auao o ka Lehulehu a me ka Ho‘olaha ‘Ike

- Kūkulu i kekahi kikowaena ho‘ona‘auao.

3.10.6 Ka ‘Ohī ‘Ōpala Pa‘a

- Ho‘omau i ka ho‘ohui ‘ia mai o ka hana ‘ohi mīkini ‘ana ma nā ‘āpana ‘elima a ho‘okohu ho‘okahi kanaka no ka ‘ohi ‘ōpala mea kanu ma ka‘e alanui;
- Ho‘omaka i ka ‘ohi ‘ana i ka ‘ōpala mea‘ai ma ka hui hana ma mua o ke kū‘ai ‘ia ‘ana.
- Mālama i kekahi noi‘i no ka pono o ka holo ‘ana o ka ‘ohi ‘ana a me ka mālama ‘ia ‘ana o nā ka‘a; a
- Hai i kekahi hui ma ka palapala ‘aelike no ka ho‘omalu ‘ana i ka ho‘okō ‘ia ‘ana o ka polokalamu ‘ohi mīkini ‘ana.

3.10.7 Nā Kahua Kiloī ‘Ōpala a me nā Pu‘u ‘Ōpala

3.10.7.1 Ka Pu‘u ‘Ōpala o Kekaha

- Ho‘omau i ka ‘ae ‘ana i ka palapala ‘ae no ke kūkulu hale ‘ana no ka ho‘olaulā ‘ana i ka Māhele II o ka pu‘u ‘ōpala o Kekaha;
- Ho‘omau i ka ‘ae ‘ana i ka palapala ‘ae no ke kūkulu hale ‘ana no ka ho‘onui ‘ana i ka Māhele II/Cell 1 a me ka Cell 2 he 120 kapua‘i ke ki‘eki‘e a‘e i ka msl; a

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- Ho‘okumu i kekahi hanana pani no ka manawa no ka pu‘u ‘ōpala o Kekaha aia a piha ke kūlana piha a pau ke kūkulu ‘ia o kekahi pu‘u ‘ōpala Subtitle D.

3.10.7.2 He Pu‘u ‘Ōpala Subtitle D Hou

- Ho‘opa‘a i nā kuleana ‘āina a kaha ki‘i, ‘ae, ‘āpono, a kūkulu i nā mea e pono ai a me ka pu‘u ‘ōpala Subtitle D hou.

3.10.7.3 Ka Papa Hana Ho‘omalu ‘Ōpala Pō‘ino

- Ho‘ākāka i nā ‘oihana nui o ke Kalana a me nā limahana no lākou ke kuleana no ke kūkulu ‘ana a me ka ho‘okō ‘ana i ka Disaster Debris Action Manual (DDAM), a ho‘okohu i kekahi luna ho‘omalu ‘ōpala (Debris Management Coordinator: DMC) nona ke kuleana no nā hanana ho‘omalu ‘ōpala i pili i nā pō‘ino;

Ho‘okohu i kekahi pū‘ulu ho‘omalu ‘ōpala pō‘ino no lākou ke kuleana no ka ho‘omalu ‘ana i ka ‘ōpala, ka hana kupakako, ka hai ‘ana ma ka palapala ‘aelike, a me nā hana e kōkua ai ā puni ka mokupuni i ka ho‘okō ‘ia ‘ana o ka DDAM;

- Ho‘ākāka i nā kahua ‘ōpala ā puni ke Kalana no ke kumu ‘o ke kuhikuhi ‘ana i nā mīkini e pono ai, nā hui e hai ai, a me kahi e waiho a ho‘ēmi ai i ka ‘ōpala no ka manawa (Temporary Debris Storage and Reduction: TDSR site);
- Kuhi i ka huina ‘ōpala a me ka mea i hana ‘ia ai no ka hanana kaha ki‘i no Kaua‘i no ka makani pāhili o ke kūlana 4;
- Ho‘omākaukau i ke ka‘ina hana ho‘omalu ‘ōpala a me nā hana ‘oi loa no ka ho‘omalu ‘ana (best management practices: BMP) no ka ho‘omalu ‘ana i nā ‘ano like ‘ole o ka ‘ōpala pō‘ino;
- Ho‘oholo i ke ka‘ina hana no ka hana ‘ana me ka ‘ōpala ‘a‘ole he ‘ōpala pō‘ino;
- Ho‘oholo i nā mea e pono ai no ke kōkua ‘ana i ka wā o kekahi pō‘ino;
- Ho‘ākāka i nā hana e hana ‘ia ai i ka wā nō o nā māhele o ka pō‘ino; a
- Ho‘ākāka i nā wahi i hiki ke kūkulu ‘ia ai ke kahua waihona ‘ōpala no ka manawa a me nā kahua waihona a ‘ohi.

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3.10.8 Nā Hana Mīkini Kiloī Like ‘Ole

- Paipai i ka ho‘okumu ‘ia ‘ana o kekahī kahua puhi mea ola ma ke kāko‘o ‘ana i ka Hawai‘i Bioenergy, LLP ma ka ho‘oulu ‘ana i kekahī mahi pu‘u mea ola lā‘au (‘o ia ho‘i, he kumulā‘au), a kaha ki‘i, ‘ae, kūkulu, a ‘āpono i kekahī kahua puhi mea ola ma mua o ka hana ‘ana;
- No‘ono‘o i ke kūkulu ‘ana i kekahī kahua ea pu‘u ‘ōpala i uila (Landfill Gas to Energy: LGtE) no ka ho‘omalu ‘ana i ke ea pu‘u ‘ōpala ma kekahī ‘ano i hiki ke ho‘omau ‘ia me ka ho‘olako pū nō i ka uila;
- No‘ono‘o i ke kūkulu ‘ana i keahi kahua ‘ōpala i uila (Waste-To-Energy: WtE) e ho‘ohuli ai i ka ‘ōpala mai ka pu‘u ‘ōpala aku me ka ho‘olako pū i ka uila; a
- No‘ono‘o i ke kūkulu ‘ana i kekahī kahua ‘ōpala i ‘aila (Waste to Fuel: WtF) no ka ho‘oponopono ‘ana i ka ‘ōpala e hana ai i ka ‘aila me ka ho‘ohana pū ‘ia ‘ana o ia ‘aila i pani no kekahī o nā ‘aila ma‘amau no ka hana uila ‘ana. ‘Elua mau ‘ano o ia mau hana ‘ōpala i uila, ‘o ia ho‘i: ka ‘aila mai ka ‘ōpala mai (refuse-derived fuel: RDF) a me ka hana ea ‘ana a i ‘ole ka pyrolysis.

Māhele 4. Ka Pili me ka Papa Hana Laulā

4.1 Hō‘ike Laulā

E like me ia i hō‘ike ‘ia ma ka Māhele 3, i ka holo ‘ana o nā iwakālua mau makahiki e hiki mai ana, e ho‘oponopono hou ana ke Kalana i nā polokalamu ho‘omalu ‘ōpala pa‘a me ka ‘ohi pū ‘ia ‘ana o ka ‘ōpala mea kanu a me nā mea ho‘opō‘aiāpuni i ‘ō‘ā ‘ia a me ka ho‘ohui pū ‘ia ‘ana mai o kekahī ‘ano i ho‘ohuihui ‘ia o ka hana ‘ohi mīkini ma nā kaiāulu i lawelawē ‘ia ma ka hana lima i kēia manawa; ho‘onui i ka pono o ka holo o ka hana ma nā kahua kiloi ‘ōpala hui pū ‘ia me ke kūkulu ‘ia ‘ana o kekahī kahua hana ho‘opulupulu no ka ‘ōpala mea kanu, mea‘ai, a me ka pelapela luawai pelapela; a kūkulu pū i nā pu‘u ‘ōpala kūloko no nā koena he li‘ili‘i i hiki ‘ole ke ho‘opō‘aiāpuni ‘ia i uila a i ‘ole i mea hou aku i mea e ho‘ēmi ‘ana i ke kauka‘i ‘ana ma luna o ka pu‘u ‘ōpala.

4.2 Ka Lula Alaka‘i

Ua pili kēia mau lula alaka‘i i ka ho‘omalu ‘ia ‘ana o ka ‘ōpala ma Kaua‘i. He maika‘i ke hō‘ike ‘ia nā lula alaka‘i moakāka no ke alaka‘i ‘ana i nā polokalamu ‘ōpala pa‘a i loko o ka ISWMP no ka wā lō‘ihī.

- a. Ma ka ho‘ohana ‘ana i ke kūkulu papa hana i ho‘ohuihui ‘ia no ka wā lō‘ihī, na ke Kalana e ho‘omalu i kekahī hana ā puni ka mokupuni no ka ‘ohi ‘ana i ka ‘ōpala pa‘a, ka

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ho‘ohana hou ‘ana, ka ho‘opō‘aiāpuni ‘ana a me ke kiloi ‘ana ma ke ‘ano he (1) kūpono no ka ‘āina a makepono ke kumu kū‘ai; (2) ho‘onui i ka ‘ōpala mai nā pu‘u ‘ōpala a‘e o ka mokupuni; a (3) kōkua i ka ho‘onui ‘ia ‘ana o nā kahua kiloi ‘ōpala me ka ‘āwīwī kūpono a ma ke ‘ano i ho‘onohonoho pono ‘ia.

- b. Ma o kekahī polokalamu ho‘ona‘auao, nā hana ho‘omalu, a me nā pōmaika‘i kālā, na ke Kalana e kāko‘o a hō‘eu i nā hui hana a me nā kānaka noho o Kaua‘i e ho‘ēmi i ka hana ‘ōpala ‘ana a ho‘onui i ka ho‘ohana hou ‘ana a me ka ho‘opō‘aiāpuni ‘ana i ka ‘ōpala.
- c. Na ke Kalana e ho‘ohui i nā mana‘o no ka ho‘oholo ‘ana i ka hui hana ma ka ho‘omalu ‘ana i ka ‘ōpala, a ho‘ohui pū i nā hui hana ma ka hana, a kōkua i nā mana‘o a me nā hana akamai i ho‘okumu ‘ia ma luna o nā mākeke. Ma waho a‘e o nā koho like ‘ole, e no‘ono‘o ke Kalana i nā mea e hiki ai ke ho‘ohana i ke ka‘ina holo ‘ōpala no ka hana ‘ana i ka uila.

4.3 Ka Ho‘okō ‘ana i ka Hana

Na ke aupuni Kalana e:

- a. Ho‘omākaukau i kekahī papa hana ho‘omalu ‘ōpala pa‘a i ho‘ohuihui ‘ia no ka wā lō‘ihī (Integrated Solid Waste Management Plan) e ho‘okō ‘ia ai e ke Komikina Kalana a hō‘ano hou ‘ia i kēlā me kēja ‘elima makahiki. Na ka ISWMP e ho‘opa‘a i nā lula alaka‘i no ke alaka‘i ‘ana i nā polokalamu ‘ōpala pa‘a, ke kūkulu ‘ana i ka papa hana no nā kahua, ka ho‘oponopono ‘ana i nā kumu waiwai, ka ho‘oholo ‘ana, nā kumu kāki no ka po‘e ho‘ohana, a me ka ho‘olako kālā ‘ana.
- b. Ho‘ohiki i ke kālā nui kūpono a me nā kumu waiwai no nā limahana e ho‘okō ai i ka ISWMP.
- c. Ho‘onui i ka pono o ka holo ‘ana o ka hana ‘ōpala pa‘a o ke Kalana ma ka ho‘onui ‘ana i ka ma‘alahi o ka ho‘ohana ‘ia ‘ana o nā kahua ho‘ohana hou me ka ho‘opō‘aiāpuni e nā mea ho‘ohana.
- d. Ho‘okumu i nā pahu hopu i hiki ke ana ‘ia no ka loiilo‘i ‘ana i nā hana a ke Kalana e ho‘ohuli aku i ka ‘ōpala pa‘a mai ka pu‘u ‘ōpala aku o ka mokupuni.
- e. Kūkulu i kekahī hana ‘eleu no ke kuhikuhi ‘ana a me ke kaha ki‘i ‘ana i nā pu‘u ‘ōpala a me nā kahua ‘ē a‘e e ho‘ohui koke ana i nā mana‘o moākāka me ke kūkākūkā pū ma waena o ka hui ho‘olako uila, ke aupuni Kalana, ka po‘e o ke kaiāulu no lākou ke kuleana, a me ka lehulehu pū nō.

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